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Polity and Governance

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National Strategy and Roadmap for Medical and Wellness Tourism

Why in News?

Recently, the Ministry of Tourism has formulated a **National Strategy and Roadmap for Medical and Wellness Tourism.**

➢ **The policy envisages promoting** India as a **Medical Value Travel (MVT)** and Wellness destination.

What is Medical and Wellness Tourism?

➢ **Medical & Wellness tourism** may be defined as 'activities related to travel and hosting a foreign tourist who stays at least one night at the destination region for the purpose of **maintaining, improving or restoring health through medical intervention'** .

What are the Key Points of the Roadmap?

➢ **Mission:** To create a robust framework and synergy amongst the **Ministries of Central Government and State Governments and Private Sector** for promoting India as a **Medical Value Travel (MVT)** and Wellness destination.

➢ **New Agency:** For this, a new **National Medical and Wellness Tourism Board** will be created as Minister of Tourism as its Chairman.

  ○ It will provide a **dedicated institutional framework** to take forward the cause of promotion of Wellness & Medical Tourism.

➢ **Key Strategic Pillars:** The Strategy has identified the following key pillars:

  ○ **Develop a brand for India** as a wellness destination.

  ○ **Strengthen the ecosystem** for medical and wellness tourism.

  ○ **Enable digitalization** by setting up Online MVT Portal.

  ○ **Enhancement of accessibility** for MVT.

  ○ **Promoting** Wellness Tourism.

  ○ Governance and **Institutional Framework.**

What does SWOT Analysis of Medical Tourism in India Reveal?	
Strengths	➢ India has **world-class doctors and hospitals**
	➢ The **cost of the treatment is a fraction** of the cost in the source markets
	➢ The increasing popularity of **India as a tourist destination** in the west.

Note:

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	○ India offers a range of tourism opportunities to Medical Value Traveller to **combine the treatment with visit to tourist destinations.** ➤ Eastern Healthcare Wisdom along with the expertise of Western Medicine ○ **Eastern:** Traditional Healthcare Therapies like **Yoga, Ayurveda & Naturopathy.** ○ **Western:** Allopathy ➤ Fast track appointments.	
Weaknesses	➤ **Unorganised MVT Framework:** There are no regulations to govern MVT sector, which leaves the sector unorganised and lack of monitoring the quality of services. ➤ **Lack of a nodal body** to spearhead Medical Value Travel. ➤ **No campaign for India** as a MVT destination. ➤ Lack of awareness about **National Accreditation Board for Hospitals (NABH)** accreditation at the international level. ➤ **Lack of uniform pricing policies** across the Hospitals. ➤ Western perception of India as an unhygienic country.	
Opportunity	➤ Demand from Countries with an **Ageing population.** ➤ Demand for **Wellness and Alternative cures.** ➤ **Long waiting periods** in developed countries. ➤ Demand from countries with **undeveloped medical facilities.** ➤ India has a **huge diaspora** and they can combine their visit to India with medical treatment. ➤ Improved Connectivity.	
Threat	➤ Regional Competition. ➤ Lack of international accreditation. ➤ Overseas medical care not covered by the insurer. ➤ Exploitation by middlemen.	

What are the Steps taken for the Promotion of Medical and Wellness Tourism?

➤ The Ministry of Tourism, releases **global print, electronic and online media campaigns** in important and potential markets overseas, under the 'Incredible India' brand line.

➤ **'Medical Visa'** has been introduced, which can be given for specific purposes to foreign travellers coming to India for medical treatment.

  ○ **'E- Medical Visa'** and **'E-Medical Attendant Visa'** have also been introduced for 156 countries.

➤ The Ministry of Tourism provides financial Assistance under Market Development Assistance Scheme to Medical Tourism Service Providers accredited by **National Accreditation Board for Hospitals & Healthcare Providers (NABH)** for participation in Medical/ Tourism activities.

What are Other Major Schemes of the Ministry of Tourism?

➤ **Iconic Tourist Sites Initiative**

➤ **DekhoApnaDesh Campaign**

➤ **PRASHAD Scheme**

➤ **Swadesh Darshan Scheme**

Way Forward

➤ **'One India One Tourism' Approach:** Tourism encompasses multiple ministries and takes place in and within many states and thus requires collective efforts and cooperation with centre and other states.

➤ **Promoting Ease of Tourism:** To truly ensure a seamless tourist transportation experience we need to standardise all interstate road taxes and make them payable at a single point which will facilitate the **ease of doing business.**

Representation of Women in Judiciary

Why in News?

Recently, the **Chief Justice of India** raised concerns about the **lack of women among High Court judges.**

➤ He made this remark while addressing an event on the occasion of the **International Day of Women Judges (10th March).**

What is the International Day of Women Judges?

➤ **About:**

❍ **United Nations General Assembly** **Resolution 75/274** designated **10ᵗʰ March** the International Day of Women Judges **in 2021.**

  ● India was **among the nations that sponsored the resolution**, which was moved by Qatar.

➤ **Significance:**

❍ The day **aims to recognise the efforts and contributions** being made by women judges.

❍ The day also **empowers young women and girls** who aspire to become judges and leaders in the community.

❍ Combating gender disparity in the judicial services will also **help achieve the Sustainable Development Goals of the United Nations.**

  ● **SDG Goal 5:** Achieve gender equality and empower all women and girls.

What is the State of Women in Judiciary?

➤ In high courts, the percentage of **women judges** is a **mere 11.5%**, while in the **Supreme Court** there are **four sitting women judges out of 33 in office.**

➤ The situation of **women lawyers in the country** is not any better. Out of 1.7 million advocates registered, **only 15% are women.**

What are the Reasons for Low Women Representatives?

➤ **Patriarchy in Society:**

❍ The **primary reason for underrepresentation** of women in judiciary is deeply ingrained patriarchy in society.

  ● Women often have to face **hostile atmospheres within courtrooms. Harassment, lack of respect from members of the bar and bench**, the silencing of their opinions, are some of the other traumatic experiences often recounted by many women lawyers.

➤ **Opaque Collegium System Functioning:** More women tend to enter the lower judiciary at the entry level because of the method of recruitment through an entrance examination.

❍ However, the higher judiciary has a collegium system, which has tended to be more opaque and, therefore, more likely to reflect bias.

❍ Recently, the **Supreme Court Collegium** recommended **192 candidates for the High Courts**, out of these, 37, that is 19%, were women. But Unfortunately, so **far only 17 of the 37 women recommended were appointed.**

➤ **No Women Reservation:** Many states have a reservation policy for women in the lower judiciary, which is missing in the **High Courts and Supreme Court.**

❍ States such as **Assam, Andhra Pradesh, Telangana, Odisha and Rajasthan have benefited from such reservation** as they now have 40-50% women judicial officers.

❍ However, the **Bill for giving 33% reservation to women in Parliament** and state legislatures has not been passed till date, despite all major political parties publicly supporting it.

➤ **Familial Responsibilities:** Factors of age and family responsibilities also **affect the elevation of women judges from the subordinate judicial services** to the higher courts.

➤ **Not Enough Women in Litigation:** Since lawyers elevated from the bar to the bench form a significant proportion of judges in the high courts and Supreme Court, it is worth noting that the number of women advocates is still low, reducing the pool from which women judges can be selected.

➤ **Judicial Infrastructure:** Judicial infrastructure, or the lack of it, is **another barrier to women in the profession**.

❍ Small courtrooms which are crowded and cramped, absence of restrooms, and childcare facilities are all barriers.

➤ **No Serious Attempt:**

❍ No serious attempt has been made **during the past 70 years to give adequate representation to women** either in the high courts or in the Supreme Court.

  ● In India, women constitute about **50% of the total population and a large number of women** are available in the Bar and in the judicial services for elevation but, in spite of that, the **number of women judges is small.**

Note:

What is the Significance of High Women Representation?

➢ **Motivates More Women to Seek Justice:** Higher numbers, and greater visibility, of women judges can **increase the willingness of women to seek justice** and enforce their rights through the courts.
  - ○ Though not true in all cases, having a judge who is the same gender as litigant, **can play a role in setting the litigant's mind at ease.**
  - ○ For instance, think of a **transgender** woman as a judge listening to the case of other trans women. That would inspire confidence in the litigant, as well.
➢ **Different Point of Views:** It is **definitely valuable to have representation of various marginalities** in the judiciary because of their different lived experiences.
  - ○ **Diversity on the bench would definitely bring in alternative** and inclusive perspectives to statutory interpretations.
➢ **Increase Judicial Reasoning:** Increased judicial diversity **enriches and strengthens the ability of judicial reasoning** to encompass and respond to varied social contexts and experiences.
  - ○ This can **improve justice sector responses** to the needs of women and marginalized groups.

Kanya Shiksha Pravesh Utsav

Why in News?

Recently, the government launched a nation-wide campaign called **Kanya Shiksha Pravesh Utsav** on the eve of the **International Women's Day (8th March).**

➢ The aim of the campaign is **to bring back four lakh out-of-school adolescent girls in the 11-14 years age group** into the education system.

What are the Key Points of the Campaign?

➢ **Aim:** The project **aims to work on a complete system for out-of-school girls** by building on existing schemes and programmes such as **Schemes for Adolescent Girls (SAG)**, **BetiBachaoBetiPadhao (BBBP),** and **National Education Policy (NEP).**

➢ **Implementing Agency:** The campaign is being steered by the **Ministry of Women And Child Development** in partnership with the **Ministry of Education.**

➢ **Implementation:** The campaign focuses on **convergence and coordination** between ministries, departments and states.
  - ○ The campaign **will be implemented as part of the BBBP project,** with the primary beneficiaries being over 4,00,000 out-of-school adolescent girls.
  - ○ **Over 400 districts across all states will be funded under the Beti Bachao Beti Padhao Scheme** for grassroots level outreach and awareness generation to sensitise communities and families to enrol adolescent girls in schools.
  - ○ Further, **funding from Samagra Shiksha Abhiyan, and Anganwadi workers (AWWs)** will be further incentivised for counseling and referring out of school adolescent girls.
➢ **Data to be Collected:** It strives to collect data on out-of-school girls, **based on their visits to anganwadi centres for nutrition, nutrition education and skilling.**
➢ **Significance:** Bringing out-of-school girls back to the education system has been the target since the **Right to Education Act** was enacted (2009).
➢ **Need:** The need has arisen because the Scheme For Adolescent Girls (SAG)**,** which initially took care of out-of-school girls, was getting less traction.

Swatantrata Sainik Samman Yojana

Why in News?

The Centre has approved the continuation of the **Swatantrata Sainik Samman Yojana (SSSY)**, under which freedom fighters and their eligible dependents are given pension and other financial benefits, till 2025-26.

What are the Key Points?

➢ **Background:**
  - ○ The Government of India introduced the 'Ex-Andaman Political Prisoners Pension Scheme' in 1969 to honor the freedom fighters who had been incarcerated in the Cellular Jail at Port Blair.
  - ○ In 1972, to commemorate the 25th Anniversary of Independence, **a regular scheme for grant of freedom fighters' pension was introduced**.
  - ○ Since 1980, a liberalized scheme, namely the **'Swatantrata Sainik Samman Pension Scheme, 1980'** has been implemented.

Note:

○ From the financial year 2017-18 onwards, the nomenclature of the Scheme has been changed as **'Swatantrata Sainik Samman Yojana'.**

○ The amount of pension has been revised from time to time and Dearness Relief has also been given since 2016.

➤ **About the Scheme:**

○ The scheme provides for **a monthly Samman Pension to freedom fighters**, as a token of respect for their contribution in the national freedom struggle.

○ On their demise, **pension is provided to their eligible dependents viz. spouses and thereafter, unmarried and unemployed daughters** and dependent parents, as per prescribed eligibility norms and procedure.

○ It is implemented by the **Ministry of Home Affairs (Freedom Fighters Division).**

○ There are 23,566 beneficiaries across the country covered under this scheme.

Guardianship of Minors

Why in News?

Recently, a **Public interest Litigation (PIL)** in Madras High Court sought that all documents must also require the mother's name to be mentioned along with the father's.

➤ In the recent past, there have been changes to the rules for **Passport** and **Permanent Account Number (PAN)** cards that allow an applicant to furnish their mother's name if she is a single parent.

➤ But this continues to be an annoying issue when it comes to school certificates and a lot of other documents that insist on the **father's name as the guardian.**

➤ **PAN** is a means of identifying various taxpayers in the country.

What are the Rules for Issuing Passports and PAN cards to those with Single Parents?

➤ **Passports** : In **December, 2016,** the Ministry of External Affairs **liberalised its rules for the issuance of passports and took a number of steps**.

○ Certain changes were made following the **recommendations of a three-member committee comprising the Ministry of External Affairs and the Ministry of Women and Child Development** that examined various concerns pertaining to passports for children after a divorce or in case of adoptions.

○ Following the changes, **applicants could provide the name of either parent instead of providing details of both the father and mother.**

○ The **new passport application form also does not require the applicant to provide the name of her or his spouse** when they are divorced and neither are they required to provide the divorce decree.

➤ **PAN** : In **November 2018**, the **Central Board of Direct Taxes** amended **Income Tax Rules, 1962,** so that the **father's name was not mandatory** when a mother was a single parent.

○ The new PAN application form also seeks the mother's name alongside the father's.

○ **Applicants can also choose** whether they want their father's name on the PAN card or their mother's name.

What do the guardianship laws in the country say?

➤ **Hindu Minority and Guardianship Act:**

○ Indian laws accord **superiority to the father in case of guardianship of a minor** (below the age of 18 years).

○ Under the religious law of Hindus, or the **Hindu Minority and Guardianship Act, (HMGA) 1956,** the **natural guardian of a Hindu minor in respect of the minor's person or property "is the father,** and after him, the mother.

● Provided the custody of a minor who has not completed the age of five years shall ordinarily be with the mother."

➤ **Muslim Personal Law (Shariat) Application Act, 1937**:

○ It says that the Shariat or the **religious law will apply in case of guardianship** according to which the **father is the natural guardia**n, but custody vests with the mother until the son reaches the age of seven and the daughter reaches puberty though the father's right to general supervision and control exists.

Note:

○ The **concept of Hizanat in Muslim law states that the welfare of the child is above all else.**

○ This is the reason why **Muslim law gives preference to the mother over father** in the matter of custody of children in their tender years.

➢ **Supreme Court Judgement:**

○ The **Supreme Court's** landmark judgement in *Githa Hariharan v. The Reserve Bank of India in 1999* provided partial relief.

○ In this case, the HMGA was challenged for violating the guarantee of equality of sexes under **Article 14** of the Constitution of India.

● **Article 14** says that no person shall be denied treatment of equality before the law or the equal protection of the laws within the territory of India.

○ The court held that the **term "after" should not be taken to mean "after the lifetime of the father "**, but rather "in the **absence of the father".**

○ But the **judgement failed to recognise both parents as equal guardians,** subordinating a mother's role to that of the father.

○ Though the j**udgement sets a precedent for courts,** it has not led to an amendment to the HMGA.

➢ **Law Commission of India:**

○ The **Law Commission of India** in its 257th report on **"Reforms in Guardianship and Custody Laws in India"** in May 2015 recommended that:

● The **"superiority of one parent over the other should be removed**.

● Both the mother and the father should be regarded, simultaneously, as the natural guardians of a minor."

● The **HMGA should be amended** to "**constitute both the father and the mother as being natural guardians 'jointly and severally,' having equal rights** in respect of a minor and his property."

What is the Major Concern?

➢ Though courts may tend to grant custody of a child following marital dispute to the mother, **guardianship rests primarily with the father** in the law and this contradiction highlights that **mothers are perceived as caregivers**, but not as decision makers for children.

Way Forward

➢ Various Government departments **must proactively amend their rules t**o ensure that they are in sync with the Githa Hariharan judgement as amending laws can be a challenging exercise.

➢ Until that happens individuals will have to continue to flock courts to seek relief.

Democracy Report 2022

Why in News?

According to the **latest report** from the **V-Dem Institute at Sweden's University of Gothenburg**, the **level of democracy enjoyed by the average global citizen in 2021 is down to 1989 levels**, with the democratic gains of the post-Cold War period eroding rapidly in the last few years.

➢ The Report is titled 'Democracy Report 2022: Autocratisation Changing Nature?'.

➢ Varieties of Democracy (V-Dem) produces the largest global dataset on democracy with over 30 million data points for 202 countries from 1789 to 2021.

➢ Earlier, the **Global State of Democracy Report, 2021** was released by the **International Institute for Democracy and Electoral Assistance (International-IDEA).**

What Parameters were used to Assess the Status of a Democracy?

➢ The report **classifies countries into four regime types** based on their score in the **Liberal Democratic Index (LDI):**

○ Liberal Democracy, Electoral Democracy, Electoral Autocracy, and Closed Autocracy.

➢ The LDI captures both **liberal (individual and minority rights) and electoral aspects (free and fair elections) of a democracy** based on 71 indicators that make up the **Liberal Component Index (LCI)** and the **Electoral Democracy Index (EDI).**

○ The **LCI** measures aspects such as protection of individual liberties and legislative constraints on the executive, while the **EDI** considers indicators that guarantee free and fair elections such as freedom of expression and freedom of association.

Note:

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○ In addition, the LDI also uses an **Egalitarian Component Index** (to what extent different social groups are equal), **Participatory Component Index** (health of citizen groups, civil society organisations), and **Deliberative Component Index** (whether political decisions are taken through public reasoning focused on common good or through emotional appeals, solidarity attachments, coercion).

What are the Main Findings of the Report?

➢ **Top Performance:**
  ○ **Sweden** topped the LDI index, other Scandinavian countries such as **Denmark and Norway, along with Costa Rica and New Zealand** make up the top five in liberal democracy rankings.

➢ **India's Performance:**
  ○ India is **part of a broader global trend of an anti-plural political party** driving a country's autocratisation.
  ○ It was **ranked 93rd in the LDI**, India figures in the "**bottom 50%" of countries.**
  ○ It has slipped **further down in the Electoral Democracy Index, to 100**, and even lower in the Deliberative Component Index, at 102.
  ○ In South Asia, **India is ranked below Sri Lanka (88), Nepal (71), and Bhutan (65) and above Pakistan (117)** in the LDI.

➢ **Spreading Autocratisation:**
  ○ Autocratisation is spreading rapidly, with a record of 33 countries autocratising.
  ○ Signaling a sharp break from an average of 1.2 coups per year, **2021 saw a record 6 coups**, resulting in 4 new autocracies: Chad, Guinea, Mali and Myanmar.
  ○ While the number of liberal democracies stood at 42 in 2012, their number has shrunk to their lowest level in over 25 years, with just 34 countries and 13% of the world population living in liberal democracies.
  ○ **Closed autocracies, or dictatorships,** rose from 25 to 30 between 2020 and 2021.

➢ **Electoral Autocracy Most Common Regime Type:**
  ○ The world today has **89 democracies and 90 autocracies**, electoral autocracy remains the most common regime type, accounting for 60 countries and 44% of the world population or 3.4 billion people.

○ **Electoral democracies were the second most common regime**, accounting for 55 countries and 16% of the world population.

What does the report say about the Changing Nature of Autocratisation?

➢ **Biggest Drivers of Autocratisation:**
  ○ One of the **biggest drivers of autocratisation** is **"toxic polarisation".**
    ● **Polarisation** has been defined as a **phenomenon that erodes respect of counter-arguments** and associated aspects of the deliberative component of democracy.
    ● It is a **dominant trend in 40 countries**, as opposed to 5 countries that showed rising polarisation in 2011.
    ● Toxic levels of polarisation **contribute to electoral victories of anti-pluralist leaders** and the **empowerment of their autocratic agendas.**
    ● Noting that **"polarisation and autocratisation are mutually reinforcing"**, the report states that "measures of polarisation of society, political polarisation, and political parties' use of hate speech tend to systematically rise together to extreme levels."

➢ **Tools used to Sharpen Polarisation:**
  ○ **"Misinformation" has been identified** as a **key tool deployed by autocratising governments** to sharpen polarisation and shape domestic and international opinion.
  ○ Repression of **civil society and censorship of media** were other favoured tools of autocratising regimes.
    ● While **freedom of expression declined** in a record 35 countries in 2021, with only 10 showing improvement, repression of **Civil Society Organisations (CSOs) worsened in 44 countries** over the past ten years, "putting it at the very top of the indicators affected by autocratisation".
    ● Also, in 37 countries, **direct government control over CSOs' existence moved in an authoritarian direction** — "evidence of the far-ranging weakening of civil society around the world."
    ● **Decisive autonomy for the Electoral Management Body (EMB) deteriorated** in 25 countries.

Note:

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Comparison Element	Democracy	Autocracy
Meaning of Term	From Greek – Demos means "people" and Kratos means "power" or "authority".	From Greek – Auto means "self" and Kratos means "power" or "authority".
Government	The power and strength of the government are given to it by the people.	One person or group holds all the power, without the participation, or sometimes even the consent, of the people.
Freedoms & Rights	Identified in country's constitution and created by laws.	• Determined by person or group in power • Often severely restrictive to suppress opponents. • Vary based on religion, sex, status etc. • Books, magazines censored by government • Ability to express one's point of view, to assemble etc. often limited.

Brahmaputra (NW2) gets connected with Ganga (NW1)

Why in News?

Recently, the **Union Minister of Ports, Shipping & Waterways** received the **maiden voyage of food-grains from Patna to Pandu port** via Bangladesh in Guwahati (Assam).

➢ **Inland Waterways Authority of India (IWAI)** is **planning to run a fixed schedule** sailing between **NW1 and NW2** heralding a new age of inland water transport for Assam & the Northeast India.

➢ The **Inland Vessels Bill, 2021**, was also approved to **regulate safety, security and registration of inland vessels.**

What is the Significance of this Achievement?

➢ The start of cargo movement through ships through **Indo Bangladesh Protocol Route (IBRP)** marks the **beginning of a new age of economic prosperity** for the whole region of Northeast.

➢ This will **pave the way for growth & development** of inland water transport.

➢ This will also **provide the business community a viable, economic & ecological alternative** and will also play a pivotal role in **energising India's northeast as the engine of growth.**

➢ The sustained effort to **rejuvenate the historical trade routes** via Bangladesh got a fillip under **PM Gati Shakti.**
   ○ It has been envisioned that **Northeast will slowly turn & convert into a connectivity hub.**
   ○ The integrated development plan, under PM Gati Shakti, has been envisioned in order to amp up swift movement of cargo over Brahmaputra.

THE 13 NATIONAL WATERWAYS NOW IN OPERATION		
NW-1	Ganga–Bhagirathi–Hooghly (Haldia-Allahabad)	1,620 km
NW-2	Brahmaputra river	891 km
NW-3	West Coast Canal–Champakara Canal–Udyogmandal Canal	205 km
NW-4	Krishna (Muktiyala–Vijayawada)	82 km
NW-10	Amba river	45 km
NW-83	Rajpuri Creek	31 km
NW-85	Revadanda Creek–Kundalika river	31 km
NW-91	Shastri river–Jaigad Creek System	52 km
NW-68	Mandovi river (Usgaon Bridge–Arabian Sea)	41 km
NW-111	Zuari river (Sanvordem Bridge–Marmugao Port)	50 km
NW-73	Narmada river	226 km
NW-100	Tapi river	436 km
NW-97	Sunderbans Waterways	172 km

What are Inland Waterways?

➢ **About:**
   ○ India has about **14,500 km of navigable waterways** which consist of rivers, canals, backwaters, creeks, etc.
   ○ As per the **National Waterways Act 2016**, 111 waterways have been declared as National Waterways (NWs).
      ● **NW-1:** Ganga-Bhagirathi-Hooghly River System (Prayagraj-Haldia) with length 1620 km is the **longest National Waterway in India.**
      ● **The Inland Waterways Authority of India (IWAI)** is implementing the **Jal Marg Vikas Project (JMVP)** for capacity augmentation of navigation on the Haldia-Varanasi stretch of Ganga (part of NW-1) with the technical and financial assistance of the **World Bank.**

➢ **Related Steps taken:**
   ○ The waterways have also been proposed to be linked to the **eastern and western Dedicated Freight Corridors (DFCs),** as well as the **Sagarmala Project**, which aims to promote port-led direct and indirect development.
   ○ Further, the provisions of the **Indo-Bangladesh (Sonamura-Daudkandi)** and **Indo-Myanmar protocol (Kaladan)** permitting transhipment of goods through Bangladesh and Myanmar waters – which, in many cases, are a continuum of India's inland waterways – enabling quicker shipments and deeper market penetration in India's North East.

What is the Scope of Inland Waterways in India?

➢ About **55 million tonnes of cargo is being moved annually by IWT** (Inland Water Transport), a fuel-efficient and environment-friendly mode.

Note:

○ However, freight transportation by waterways is highly underutilized in the country as compared to developed countries.

➢ Its operations are **currently restricted to a few stretches** in the **Ganga-Bhagirathi-Hooghly rivers, the Brahmaputra, the Barak river** (northeastern India), the rivers in Goa, the backwaters in Kerala, inland waters in Mumbai and the deltaic regions of the Godavari - Krishna rivers.

➢ Besides these **organized operations by mechanized vessels,** country boats of various capacities also operate in various rivers and canals and substantial quantum of cargo and passengers are transported in this unorganized sector as well.

➢ In India, **IWT has the potential to supplement the overburdened railways and congested roadways.** In addition to cargo movement, the IWT sector also provides a convenient function in related activities such as carriage of vehicles {on Roll-on-Roll-off (Ro-Ro) mode of cross ferry} and tourism.

What are the Advantages of an Inland Waterways Network?

➢ **Cheaper Mode of Transportation:**
○ Waterways are a cheaper mode of transportation vis-à-vis the available alternatives, significantly reducing the point-to-point cost of goods transportation.
○ It also reduces time, cost of transportation of goods and cargos, as well as congestion and accidents on highways.
○ The network requires **no green field investment,** but only capex (capital expenditure) for improvement/upgradation.

➢ **Seamless Interconnectivity:**
○ They are expected to also **"help create seamless interconnectivity connecting hinterlands** along navigable river coasts and coastal routes" and "are likely to play a crucial role in connecting the north-eastern states to the mainland."

What are the Implementation Challenges?

➢ **No Navigability throughout the Year:**
○ Some rivers are seasonal and do not offer navigability through the year. Around 20 out of the 111 identified national waterways have reportedly been found unviable.

➢ **Intensive Capital and Maintenance Dredging:**
○ All the **identified waterways require intensive capital and maintenance dredging,** which could be resisted by the local community on environmental grounds, including displacement fears, thereby posing implementation challenges.

➢ **Other Uses of water:**
○ Water also **has important competing uses,** viz. need for living as well as for irrigation, power generation etc. It would **not be possible for the local government/others to overlook** these needs.

➢ **Exclusive Jurisdiction of the Central Government:**
○ The exclusive jurisdiction of the Central Government is **only in regard to shipping and navigation on inland waterways** declared to be 'national waterways' by an act of Parliament.
○ **Utilisation/sailing of vessels,** in other waterways, is **within the ambit of the concurrent list** or is in the jurisdiction of the respective state governments.

Daylight Harvesting

Why in News

Recently, the Ministry of Science & Technology has decided to promote a unique **Start-up in the latest Daylight Harvesting Technology** in order to **reduce carbon footprint** and improve the **building's energy efficiency.**

➢ The Ministry will give **Rs 5 Crore of the 10 Crore project** to Skyshade company for developing **new technologies for basement illumination on a 24x7 basis.**

➢ The company aims to create **Green & Net zero buildings and to participate and contribute in national missions** under the **National Action Plan on Climate Change (NAPCC).**

What is Daylight Harvesting?

➢ Daylight Harvesting is a method **of saving the energy costs** associated with lighting. It **makes use of the available sunlight.**
○ The **solar energy** spectrum has 45% energy as visible light and this can be used to harvest **building illumination for about 9-11 hours a day.**

➢ It is one of the most advanced techniques used in sustainable lighting designs for contemporary buildings.

Note:

drishti

➤ It **automatically dims or adjusts the brightness of light** in response to the amount of natural light available in a space.

➤ Utilising natural daylight coming through the windows or skylights **minimises the amount of energy used in artificial lighting.**

➤ The daylight harvesting system **employs light sensors, also known as photocell sensors, to detect the prevailing light leve**l in the environment.

➤ It then sends the intensity of light received to a controller, which is connected to the lighting control system. The control system **in turn adjusts the electric lights automatically** according to the measured light level.
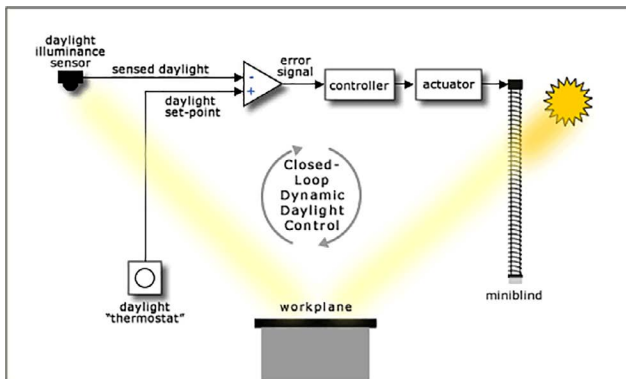
What is the Significance of Daylight Harvesting?

➤ **Energy Savings:**
  ○ It increases energy savings **by dimming or turning Off lights** based on the natural daylight entering the space.

➤ **Provides Comfort and Convenience:**
  ○ It helps to maintain proper light intensity in a space by continuously and **automatically adjusting lights.**

➤ **Healthier Working Conditions:**
  ○ Providing right amounts of light to people helps in **maintaining proper circadian rhythms** that are crucial to good health and adequate sleep besides preventing seasonal affective disorders.
    ● **Circadian rhythm** is the 24-hour cycle that tells our bodies when to sleep, rise, and eat—regulating many physiological processes.
  ○ Letting in natural light to workplaces provides better concentration, creates a positive mood, and drives **healthier employee life**.

➤ **Reduce Carbon Emission:**
  ○ Daylight is available universally and it is a very **clean and cost-efficient source of energy.**
  ○ Meeting our energy requirement during the day by using daylight harvesting technology will contribute immensely to meet one of the commitments of the five nectars of "**PANCHAMRIT**" i.e., to make India a **Net Zero emission** country by 2070.

What are the Other initiatives to Promote Energy Efficiency?
➤ **Perform Achieve and Trade Scheme (PAT)**
➤ **Standards and Labeling**
➤ **Energy Conservation Building Code (ECBC)**
➤ **Demand Side Management**
➤ **ECO Niwas Samhita**
➤ **Bureau of Energy Efficiency**

Bhakra Beas Management Board (BBMB)

Why in News?

Recently, the Central government has decided to adopt a **new criterion for selecting members of the Bhakra Beas Management Board (BBMB).**

What Changes have been made to the BBMB rules?

➤ A notification has been issued to amend the **BBMB Rules 1974**, thereby **changing the criteria for the selection** of whole-time members of the Board.
  ○ As per the **BBMB Rules, 1974,** the member (power) in BBMB was from Punjab and the member (irrigation) was from Haryana but the requirement has been removed in the amended rules.

➤ New rules **specify technical qualifications for the appointments** and pave the way for appointment of the **members from across India and not only Punjab and Haryana.**

➤ The new rules have been **opposed by the engineers' fraternity, farmers** as well as the **political parties of Punjab.**
  ○ The engineers have pointed out that **hardly any engineer would qualify for appointment as per the new specifications**, which appear to be tailor-made for some personnel to be appointed from outside Punjab and Haryana.

Note:

➢ On the other hand, officials have argued that the changes have been made in **pursuance to a judgement of the Punjab and Haryana High Court** in the case of *Jagmohan Singh Vs Union of India.*

What is the Genesis of the BBMB?

➢ The genesis of BBMB lies in the **Indus Water Treaty** signed between **India and Pakistan in 1960.**
　○ Under the treaty, waters of three eastern rivers— Ravi, Beas and Sutlej — were allotted to India for exclusive use while Indus, Chenab and Jhelum rivers were allocated to Pakistan.

➢ In India, a master plan was drawn to harness the potential of these rivers for providing assured irrigation, power generation and flood control.
　○ **Bhakra and Beas projects** form a major part of this plan and were established as a joint venture of the then undivided Punjab and Rajasthan.

➢ Following the reorganisation of Punjab on 1st November 1966, and the creation of the state of Haryana, the **Bhakra Management Board** was constituted under Section 79 of the **Punjab Reorganisation Act, 1966.**

➢ The administration, maintenance and operation of Bhakra Nangal project was handed over to **Bhakra Management** on 1st October 1967.

➢ The Beas Project Works, on completion, were transferred from **Beas Construction Board (BCB) to Bhakra Management Board** as per the provisions of Section 80 of the Punjab Reorganisation Act, 1966.
　○ Pursuant to this **Bhakra Management Board was renamed as Bhakra Beas Management Board (BBMB)** w.e.f. 15th May 1976.

➢ Since then, **BBMB regulates supply of water and power** to Punjab, Haryana, Rajasthan, Himachal Pradesh, Delhi and Chandigarh.

What is the Constitution of the BBMB Management?

➢ It includes a **chairperson and two whole time members** who are from the partner states of Punjab and Haryana.
　○ They are designated as **Member (Power) and Member (Irrigation)** from Punjab and Haryana, respectively.

➢ There is representation from **each member state including Rajasthan and Himachal Pradesh** as nominated by the respective state governments.

➢ The total strength of BBMB is about **12,000 employees** and out of these 696 are Group A officers and are posted from the partner states.

What is the Beas Project?

➢ The Beas-Satluj link scheme **consists of a 76.2 m high rockfill diversion dam at Pondoh on Beas River in Mandi district (HP).**

➢ **Pong is a multipurpose earth & rockfill dam on Beas River,** 40 km from Mukerian, Mukerian District, Himachal Pradesh. It is **located in the Himalayan foot-hills downstream of Pandoh dam.** BBMB commissioned the project in 1978-83.

What are the Features of the Bhakra Nangal Dam?

➢ Bhakra Dam is **a concrete gravity dam across the Sutlej River and is near the border between Punjab and Himachal Pradesh** in northern India.

➢ It is **India's second tallest at 225.55 m high next to the 261m Tehri Dam**.

➢ Its reservoir, **known as the "Gobind Sagar"**, stores up to 9.34 billion cubic meters of water.

➢ **Nangal dam is another dam** downstream of Bhakra dam. Sometimes both the dams together are called Bhakra-Nangal dam though they are two separate dams.

Demand for Rajya Sabha Seat to Chandigarh

Why in News?

Recently, the **Chandigarh Municipal Corporation** has approved a proposal to amend **Article 80 of the Constitution** so that its councillors could send a representative to the **Rajya Sabha**.

Note:

- **Article 80 of the Constitution of India** deals with the **composition of the council of states** also called the **Upper House and Rajya Sabha (Upper House).**
- So far, Chandigarh has **no representation in the Rajya Sabha.**

What is the Demand of the Proposed Bill?

- The bill (**Private Member Bill**) sought **the adding of a provision** "provided that the representative **of the Union Territory of Chandigarh in the council of states shall be elected by an electoral college**.
  - The electoral college should consist of elected members of the Municipal Corporation of Chandigarh constituted under the **Punjab Municipal Corporation (Extension to Chandigarh) Act, 1994** in Article 80 of the Constitution.
- An amendment has also been sought to the **Fourth Schedule of the Constitution** with '**Entry 32, Chandigarh.**
  - The fourth Schedule contains **provisions as to the allocation of seats in the Council of States.**
  - It contains the **number of seats represented in the Council of states (Rajya Sabha)** from each State and Union Territory.

Where does Chandigarh Stand?

- **Chandigarh is a Union Territory** without any legislative assembly and has a **seat of Member of Parliament (MP)** in the Lower House (Lok Sabha) or House of the People.
- Chandigarh residents **elect an MP every five years through direct voting.**
  - The **union territories of Puducherry, Jammu and Kashmir and the National Capital Territory of Delhi** have representation in the Rajya Sabha, while **Ladakh, Chandigarh, Dadra and Nagar Haveli — Daman and Diu, Andaman and Nicobar Islands and Lakshadweep** are unrepresented in the upper house.

What are the Legal Objections?

- The elected Municipal Corporation Councillors **do not form the electoral college** for selecting a member for **Upper house (Rajya Sabha)** because it is beyond the powers of the Municipal Corporation.

- Between 1966 and 1990, MPs for Rajya Sabha in Delhi were selected by the members of the Metropolitan Council of Delhi.
  - There is a difference between the Metropolitan Council and Municipal Corporation.
  - There is also a **distinction between the electoral college of legislatures and electoral college of MC councillors.**
  - Also **Chandigarh has no legislative Assembly like Delhi**, which also is a Union Territory, and the city also lacks a metropolitan council, which exists in the national capital.
- Also, selecting Rajya Sabha MP, is **beyond the listed scope of functions of the municipal corporation**.
- If the functions of the civic body are to be extended beyond the listed scope of functions **it would not be feasible and would go against the constitutional mandate** of any such Municipal Corporation.
  - As the civic body gave its assent to the amendment, UT Administration will **send it to the Ministry of Home Affairs** for further consideration and then it will be **forwarded to the Parliament.**

What is a Private Member Bill?

- Any **MP** who is **not a minister is referred to as a private member.**
- Its drafting is the **responsibility of the member** concerned. Its introduction in the House requires one month's notice.
- The government **bills\public bills can be introduced and discussed on any day**, private member's bills can be **introduced and discussed only on Fridays.**
- In case of multiple Bills, a **ballot system is used to decide the sequence of bills** for introduction.
- The **Parliamentary Committee on Private Member's Bills** and Resolutions goes through all such Bills and classifies them based on their urgency and importance.
- Its rejection by the **House has no implication on the parliamentary confidence** in the government or its resignation.
- Upon conclusion of the discussion, the member piloting the bill **can either withdraw it on the request of the minister concerned**, or he may choose to press ahead with its passage.

Note:

<table>
<tr><th colspan="2" align="center">Public Bill vs Private Bill</th></tr>
<tr><th><i>Public Bill</i></th><th><i>Private Bill</i></th></tr>
<tr><td>1. It is introduced in the Parliament by a minister.</td><td>1. It is introduced by any member of Parliament other than a minister.</td></tr>
<tr><td>2. It reflects of the policies of the government (ruling party).</td><td>2. It reflects the stand of opposition party on public matter.</td></tr>
<tr><td>3. It has greater chance to be approved by the Parliament.</td><td>3. It has lesser chance to be approved by the Parliament.</td></tr>
<tr><td>4. Its rejection by the House amounts to the exp-ression of want of parliamentary confidence in the government and may lead to its resignation.</td><td>4. Its rejection by the House has no implication on the parliamentary confidence in the government or its resignation.</td></tr>
<tr><td>5. Its introduction in the House requires seven days' notice.</td><td>5. Its introduction in the House requires one month's notice.</td></tr>
<tr><td>6. It is drafted by the concerned department in consultation with the law department.</td><td>6. Its drafting is the responsibility of the member concerned.</td></tr>
</table>

Chemical Weapons Convention and Biological Weapons Convention

Why in News?

Recently, the US said that **Russia could be planning a chemical or biological weapon attack in Ukraine.**

➢ Earlier, Russian claimed that the **US had chemical and biological weapons labs** in Ukraine, which was denied by the US.

What are Chemical Weapons?

➢ **About:**
  ❍ A Chemical Weapon is a **chemical used to cause intentional death or harm** through its toxic properties.
  ❍ Munitions, devices and other equipment specifically designed to weaponize toxic chemicals also fall under the definition of chemical weapons.
➢ **Related Initiatives:**
  ❍ **India's:**
    ● The **Chemical Weapons Convention Act, 2000** was passed to implement the Chemical Weapons Convention (CWC).
      ■ It provided for the establishment of a National Authority for Chemical Weapons Convention or NACWC. This institution, formed in 2005, is

the chief liaison between the government of India and the **Organization for the Prohibition of Chemical Weapons (OPCW).**
  ❍ **Global:**
    ● Basel, Rotterdam and Stockholm Conventions (Hazardous Chemicals and Wastes):
      ■ The Basel, Rotterdam and Stockholm conventions are **multilateral environmental agreements**, which share the common objective of protecting human health and the environment from hazardous chemicals and wastes.
    ● The **Australia Group (AG)** is an informal forum of countries which, through the **harmonisation of export controls**, seeks to ensure that exports do not contribute to the development of chemical or biological weapons.

What is the Chemical Weapons Convention?

➢ **About:**
  ❍ It is a **multilateral treaty banning chemical weapons** and requiring their destruction within the stipulated time.
  ❍ Negotiations for the **CWC began in 1980** at the **United Nations Conference on Disarmament.**
  ❍ The convention was drafted in **September 1992** and opened for signature in January 1993. It became effective from April 1997.
  ❍ It makes it **mandatory to destroy old and abandoned chemical weapons.**
  ❍ Members **should also declare the riot-control agents** (sometimes referred to as 'tear gas') in possession of them.
    ● **Organisation for the Prohibition of Chemical Weapons** is an international organization established by the CWC in 1997 to implement and enforce the terms of the CWC.
➢ **Members:**
  ❍ It has **192 state parties** and 165 signatories.
  ❍ India is a signatory of the convention.
➢ **Convention Prohibits:**
  ❍ The **development, production, acquisition, stockpiling**, or retention of chemical weapons.
  ❍ **Transferring** of chemical weapons.

Note:

- ○ **Using** chemical weapons.
- ○ Assisting other States to indulge in activities that are prohibited by the CWC.
- ○ **Using riot-control device**s as 'warfare methods'.

What is a Biological Weapon?

➢ **About:**
- ○ Biological weapons **use microbiological agents** (such as bacteria, viruses or fungi) or toxins to intentionally cause death or harm to humans, animals, or plants.

➢ **Related Initiatives:**
- ○ The **1925 Geneva Protocol** banned the use of biological weapons in war.
  - ● India ratified the Geneva Convention in 1950.
- ○ Subsequently, the **Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975 prohibited the development, production, stockpiling, acquisition** and retention of biological weapons.
  - ● India ratified this in 1974.

What is the Biological Weapons Convention?

➢ **About:**
- ○ It is a **key element in the international community's efforts** to address **Weapons of Mass Destruction (WMD)** proliferation and it has established a strong norm against biological weapons.
  - ● WMD is a **weapon with the capacity to inflict death and destruction** on such a massive scale and so indiscriminately that its very presence in the hands of a hostile power can be considered a grievous threat.
- ○ Formally known as **"The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction"**, the Convention was negotiated by the Conference of the Committee on Disarmament in Geneva, Switzerland.
- ○ It opened for signature on **10th April 1972** and entered into force on **26th March 1975.**

➢ **Members:**
- ○ 183 States Parties and 4 Signatory States.
- ○ India is a signatory of the convention.

➢ **Convention Prohibits:**
- ○ It effectively prohibits the **development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons.**
- ○ It was the **first multilateral disarmament treaty** banning an entire category of **Weapons of Mass Destruction (WMD).**

E-bill Processing System

Why in News?

Recently, the Finance Minister launched the **E-bill Processing system on the occasion of 46th Civil Accounts Day (1st March)**.

➢ It was announced in the **Union Budget 2022** to use the technology for facilitating the financial inclusion drive in India.

➢ The **"Civil Accounts Day" is observed** every year to mark the anniversary of the inception of the **Indian Civil Accounts Service (ICAS)** on 1st March , 1976.
- ○ The ICAS performs a key role in delivery of **financial management services** for the Government of India (GoI).

What are the Key Points?

➢ **About:**
- ○ E-bill system is part of **Ease of Doing Business (EoDB)** and **Digital India** Eco-System' **to bring in broader transparency** and expedite the process of payments.
- ○ In simple words, e-Bill Processing System is **a way of transacting the bills digitally rather than the traditional use of paper.**
  - ● **Currently**, the suppliers of various goods and services to the Government have to submit physical, ink signed copies of their bills to the respective Ministries/Departments/offices of the Government of India.
- ○ Customers will be able to **get their bills online**, via e-mail, or in the **machine-readable data** forms when billed electronically.
- ○ Under the newly launched e-Bill system, **vendors/ suppliers can upload their bills online along with supporting documents** from the convenience of their homes/offices at any time through digital signature.

Note:

- ❍ At the backend too, the **electronic bill received will be processed by the authorities digitally at every stage** and finally, the payments will be credited digitally to the bank account of the vendor.
- ➢ **Developed By:**
  - ❍ Developed by the **Public Financial Management System (PFMS)** Division in the office of the Controller General of Accounts in the Department of Expenditure, Ministry of Finance.

What are the Major Objectives of the E-bill Processing System?

- ➢ To Provide convenience to **all vendors/suppliers of the government to submit their bills/claims at any time**, from anywhere.
- ➢ Eliminate physical interface between suppliers and government officers.
- ➢ Enhance efficiency in processing of bills/claims.
- ➢ Reduce discretion in processing of bills through the **"First-In-First-Out"(FIFO) method.**

What is the Significance of the E-bill Processing System?

- ➢ **Enhance Transparency:**
  - ❍ It will enhance **transparency, efficiency and faceless-paperless payment system** by allowing suppliers and contractors to submit their claim online which will be trackable on a real time basis.
- ➢ **Trackable on real time Basis:**
  - ❍ As per the Finance Ministry, the suppliers and the contractors will not be able to submit their claim online which **will be trackable on a real-time basis.**
- ➢ **Time Efficient:**
  - ❍ As e-Billing is **time-efficient,** this will also be a quick and simplified way that will be better fitted to the Government's call of making India digital. The E-bill Processing system will also reduce errors.

What is PFMS?
- ➢ The PFMS, earlier known as **Central Plan Schemes Monitoring System (CPSMS)**, is a **web-based online software application** developed and implemented by the Office of Controller General of Accounts (CGA), Ministry of Finance.

- ➢ PFMS was initially **started during 2009** as a **Central Sector Scheme** of the **Planning Commission** with the objective of tracking funds released under all Plan schemes of the Government of India, and real time reporting of expenditure at all levels of Programme implementation.
- ➢ The **primary objective of PFMS is to facilitate a sound Public Financial Management System for the Government of India (GoI)** by establishing an **efficient fund flow system** as well as a payment cum accounting network.

Start-Up Village Entrepreneurship Programme

Why in News?

Recently, the National Institute of Entrepreneurship and Small Business Development (NIESBUD has signed a Memorandum of Understanding (MoU) with the Ministry of Rural Development (MoRD) to develop a sustainable model for promoting entrepreneurship at the grass roots by initiating the **Start-up Village Entrepreneurship Programme (SVEP).**

What is the Significance of the Partnership?

- ➢ R**ural entrepreneurs will be able to access banking systems for receiving financial support** for starting their enterprises, including support from **MUDRA** bank.
- ➢ Integrated ICT techniques and tools will also be provided for training and capacity building along with enterprise advisory services **to augment the entrepreneurship ecosystem in India's villages.**
- ➢ The beneficiaries of the project **are from the Self-Help Group (SHG) ecosystem of DAY-NRLM** and the scheme **not only supports existing enterprises but new enterprises as well.**
- ➢ The partnership will **enable the rural community** by helping them set up their trades and provide complete support till they are stabilised.
- ➢ This pragmatic intervention will provide knowledge, advisory and financial support to the public and **will help create village-level community cadre.**

What are the Key Points Related to SVEP?

➢ **About:**
  ○ SVEP is a sub-scheme of the **Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM)**, Ministry of Rural Development and has been implemented since 2016.

➢ **Aim:**
  ○ Support the rural poor to come out of poverty.
  ○ Providing self-employment opportunities with financial assistance and training in business management and soft skills.
  ○ Create local community cadres for promotion of enterprises.

➢ **Features:**
  ○ It **addresses three major pillars of rural start-ups** namely finances, incubation and skill ecosystems.
  ○ It p**romotes both individual and group enterprises,** majorly in manufacturing, trading and service sectors.
  ○ It **invests on building the capacities of the entrepreneurs** to run the businesses profitably based on the local demand and ecosystem.
  ○ Investments are also made on the **use of the Information and Communication Technology (ICT)** to create standard E-learning modules for minimizing the transmission loss in technical aspects like a business plan and profit and loss account preparations.

➢ **Activities:** Activities under SVEP are strategically designed to promote rural enterprises with a few key areas.
  ○ One of the key areas is **to develop a pool of Community Resource Persons-Enterprise Promotion (CRP-EP)** who are local and support entrepreneurs setting-up rural enterprises.
  ○ Another key area is t**o promote the Block Resource Center (BRC)** in SVEP blocks, to monitor and manage the community resource persons, appraise SVEP loan applications and act as the repository of enterprise-related information in the concerned block.
    ● BRCs **play the role to support a sustainable revenue model** to operate effectively and independently.

○ **SVEP established local markets/rural haat** which motivated entrepreneurs to take up demand-based production, advertise their enterprise and increase earning opportunities.
    ● A typical rural haat is mostly indigenous, flexible and multi-layered structure which accommodates the economic activities of various nature.
    ● Local market/haat/bazaar serves as an important economic platform where a range of products is traded.

➢ **Achievements:**
  ○ A **mid-term review of SVEP which was conducted in September 2019 by Quality Council of India** shows about 82% of the sampled entrepreneurs across the blocks reported being from SC, ST and OBC categories which signifies social inclusion - one of the pillars of NRLM.
  ○ 75% of the enterprises were owned and managed by women and average monthly revenue of enterprises was Rs.39,000 - Rs.47,800 in case of manufacturing, Rs. 41,700 in case of services and Rs.36,000 in case of trading.
  ○ The study also shows that about 57% of the total household income of the entrepreneurs is through SVEP enterprises.

Three Capital Issue of Andhra Pradesh

Why in News?

Recently, the Andhra Pradesh High Court directed the **State government to construct and develop Amaravati, the capital city of the State**, and the capital region within six months.

What is the Background?

➢ The Andhra Pradesh Legislative Assembly passed the **AP Decentralisation and Inclusive Development of All Regions Bill, 2020.**
  ○ The Bill intends to give shape to the **state government's plan of having three capitals** — executive capital in Visakhapatnam, legislative in Amaravati and judicial in Kurnool.

Note:

- According to the government, **multiple state capitals will allow the development of several regions** of the state and hence leading to inclusive growth.

➤ However, previously the Andhra government had acquired around 30 thousand acres of land approximately from the farmers in and around the Amaravati region. So the decision of changing the capital may affect most of the farmers living out there.

➤ In November, 2021, **the Andhra Pradesh Decentralisation and Inclusive Development of All Regions Repeal Bill, 2021**, aiming to **repeal the earlier laws** that stipulated a three-capitals plan for the State was passed.

  - It was promised to **introduce a "better" and "comprehensive" Bill** after plugging loopholes in the previous version.

What was the Current HC Ruling?

➤ The High Court held that the **State legislature lacked the competence to make any legislation** for shifting, bifurcating or trifurcating the capital.

➤ The court **directed the government and the Capital Region Development Authority (CRDA)** to discharge their duties enshrined under the **A.P. Capital Regional Development Authority (CRDA) Act and Land Pooling Rules.**

  - It directed the **State to develop the reconstitutional plots** belonging to landowners and hand them over to landowners within three months.

  - The **Andhra Pradesh Capital Region Development Authority Act, 2014** under Section 10(1)(c)(i), provides for regulation of development activities in accordance with the development plans and regulations, and to bring aesthetics, efficiency and economy in the process of development within the jurisdiction of Capital Region Development Authority.

➤ The HC held the view that the agreement signed between the farmers and the CRDA is a **Development Agreement-cum-Irrevocable General Power of Attorney** and it is a statutory contract.

  - The violation of terms and conditions by the respondents — State and APCRDA — warrants interference of this court, while **exercising power under Article 226 of the Constitution.**

- **Article 226 of the Constitution empowers a high court to issue writs** including habeas corpus, mandamus, certiorari, prohibition and quo warranto for the enforcement of the fundamental rights of the citizens and for any other purpose.

➤ The court held that **Parliament alone is competent** to deal with the setting up of legislature, executive and judicial organs of the state, and this was implicit in the language employed in **Article 4 of the Constitution.**

  - **Article 4 allows for consequential changes** in the Ist Schedule i.e. names of the States in the Union of India and IVth Schedule i.e. a number of seats allotted in the **Rajya Sabha** for each state.

What are the Concerns related to Multiple States?

➤ **Balancing Legislative and Executive Function:**

  - Separation of executive and legislative capital can be challenging. In the Parliamentary system of government, which has been adopted in India, **functions of the executive and the legislature are closely connected.** For example,

    - When the legislative assembly is in session, **administrative officers are required all the time for the presentation of the bill**, for briefing the ministers, etc.

    - When the legislative assembly is not in session, **the decision making by the executive requires a lot of input from various sources** including the legislators who are the representatives of the people.

➤ **Logistically difficult:**

  - The development of a region **can be done through policy interventions like industrial policy.** However, separating the capitals can be against the convenience of the administration as well as the people. Also, it will be logistically difficult to implement.

Janaushadhi Diwas

Why in News?

Pharmaceuticals & Medical Devices Bureau of India **(PMBI)**, under the aegis of Department of Pharmaceuticals is going to celebrate their **4th Jan Aushadhi Diwas**.

➤ All the activities will be organised within the spirit of **"Azadi Ka Amrit Mahotsav"** and several events have been planned at 75 locations.

➢ This will **generate awareness** about the **usages of generic medicines** and benefits of **Jan Aushadhi Pariyojana.**

➢ The theme of this year's (2022) Janaushadhi Diwas is **Jan Aushadhi-Jan Upyogi.**

What is Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)?

➢ **PMBJP** is a campaign launched by the **Department of Pharmaceuticals in 2008** under the name Jan Aushadhi Campaign.

○ The campaign was revamped as **PMBJP in 2015-16.**

➢ **Bureau of Pharma PSUs of India (BPPI)** is the implementation agency for PMBJP.

○ The Bureau of Pharma **Public Sector Undertakings (PSUs)** of India works under the Ministry of Chemicals & Fertilisers.

○ BPPI has also developed the **Janaushadhi Sugam Application.**

➢ A medicine is **priced on the principle of maximum 50% of average price** of the top three brands branded medicines. Thus, the **prices of Jan Aushadhi Medicines** are **cheaper by at least 50%** and in some cases, **by 80% to 90% of the market price of the branded medicines.**

What is the objective of the PMBJP?

➢ To make **available quality medicines, consumables and surgical items** at affordable prices for all and reduce out of pocket expenditure of consumers/patients.

➢ To **popularise generic medicines among the masses** and dispel the prevalent notion that low priced generic medicines are of inferior quality or are less effective.

○ **Generic medicines** are unbranded medicines which are equally safe and having the same efficacy as that of branded medicines in terms of their therapeutic value.

➢ To **ensure easy availability of the menstrual health services** (Janaushadhi 'Suvidha' sanitary napkins) to all women across India.

➢ Generate **employment by engaging individual entrepreneurs** in the opening of PMBJP Kendras.

What is Janaushadhi Kendra?

➢ These are the **centres from where quality generic medicines** are made available to all.

➢ **Bureau of Pharma PSUs in India (BPPI)** supports Janaushadhi Kendras as a part of **PMBJP .**

➢ The Government has **set a target to increase** the number of Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs) to **10,500 by the end of March 2025.**

○ As on **31st January, 2022**, the number of stores has increased to 8,675.

➢ Product basket of PMBJP comprises **1451 drugs and 240 surgical instruments.**

○ Further, **new medicines and nutraceuticals products** like protein powder, malt-based food supplements, protein bar, immunity bar, sanitizer, masks, glucometer, oximeter, etc. have been launched.

What has been the Performance of the PMBJP?

➢ In the current financial year 2021-22 (till 31st January, 2022), **PMBI has made sales of Rs. 751.42 Crore** which led to savings of approximately Rs. 4500 Crore to the citizens.

➢ This scheme is also **providing a good source of self-employment** with sustainable and regular earnings.

➢ Average sales per store per month has grown to Rs 1.50 lacs (including Over-The-Counter & other products) as per a survey.

○ Over-The-Counter refers to a **medicine that can be bought without a prescription.**

Ayushman Bharat Digital Mission

Why in News?

Recently, the Union Cabinet has approved the countrywide implementation of the **Ayushman Bharat Digital Mission (ABDM)** with the budgetary allocation of **Rs 1,600 crore for five years**.

➢ Under the mission, citizens will be able to create their Ayushman Bharat health account numbers, to which their digital health records can be linked.

➢ **Ayushman Bharat** is a flagship scheme of India which was launched as recommended by the **National Health Policy 2017**, to achieve the vision of **Universal Health Coverage (UHC).**

What is Ayushman Bharat Digital Mission?

➢ It was launched in September 2021 by the Prime Minister through a video conference.

Note:

➢ It aims to provide **digital health IDs for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically** when required.

➢ The pilot project of the Mission had been announced by the Prime Minister from the ramparts of the **Red Fort on 15th August 2020.**

  ○ The project is being implemented in the pilot phase in six States & Union Territories.

➢ The **National Health Authority (NHA)** under the Ministry of Health and Family Welfare will be the implementing Agency.

What are the Features of the Mission?

➢ **Health ID:**

  ○ It will be **issued for every citizen that will also work as their health account**. This health account will contain details of every test, every disease, the doctors visited, the medicines taken and the diagnosis.

  ○ Health ID is free of cost, voluntary. **It will help in doing analysis of health data** and lead to better planning, budgeting and implementation for health programs.

➢ **Healthcare Facilities & Professionals' Registry:**

  ○ The other major component of the programme is creating a **Healthcare Professionals' Registry (HPR)** and **Healthcare Facilities Registry (HFR)**, allowing easy electronic access to medical professionals and health infrastructure.

  ○ The HPR will be a **comprehensive repository of all healthcare professionals** involved in delivering healthcare services across both modern and traditional systems of medicine.

  ○ The HFR database will have records of all the country's health facilities.

➢ **Ayushman Bharat Digital Mission Sandbox:**

  ○ The **Sandbox**, created as a part of the mission, will **act as a framework for technology and product testing** that will help organisations, including private players intending to be a part of the national digital health ecosystem become a Health Information Provider or Health Information User or efficiently link with building blocks of Ayushman Bharat Digital Mission.

What are the Benefits and Related Concerns?

➢ **Expected Benefits:**

  ○ Ensure **ease of doing business** for doctors and hospitals and healthcare service providers.

  ○ Enable access and exchange of longitudinal health records of citizens with their consent.

  ○ Create integration within the digital health ecosystem, similar to the role played by the **Unified Payments Interface (UPI)** in revolutionising payments.

  ○ The mission will improve **"equitable access" to quality healthcare as it'll encourage the use of technologies** such as telemedicine, and enable national portability of health services.

➢ **Concerns:**

  ○ The **lack of a data protection bill** could lead to the misuse of data by private firms and bad actors.

  ○ **Exclusion of citizens and denied healthcare** due to faults in the system are also a cause of concern

Deputation of DIGs

Why in News?

Recently, the Centre has issued another order on the **central deputation of Deputy Inspector General-level IPS officers.**

➢ The order held that IPS officers coming to the Centre at the **DIG level** would **no longer be required to be empanelled at that level** with the Union Government.

Note:

- The order came after its **proposal to amend the All India Service Rules** that would allow it to call any IAS, IPS or IFoS officer on central deputation with or without the state's consent.

What is the Order?

- According to **existing rules,** a DIG-ranked IPS officer with a **minimum experience of 14 years** could only be deputed to the Centre if the **Police Establishment Board** empanelled them as DIGs at the Centre.
  - The board chooses the panel on the basis of officers' career and vigilance records.
  - **Till now, only the Superintendent of Police-level officers** does not require empanelment at the Centre.
- The new order makes the **entire pool of DIG-level officers in a state eligible for central deputation.**
- However, this **would not automatically allow DIGs to come to the Centre.** Officers would still have to be put on the offer list for central deputation which is decided by the states and the Centre in consultation.

Why has it been issued?

- The **Ministry of Home Affairs (MHA)** said the move is aimed at increasing the pool of DIG-level IPS officers for central deputation in the **backdrop of massive vacancies** in **Central Police Organisations (CPOs) and the Central Armed Police Forces (CAPFs).**
  - According to data sourced from various CPOs and CAPFs, out of 252 posts reserved for IPS officers at DIG level at the Centre, 118 (almost half) are vacant.
  - Also, it increases the size of the pool of officers available to the Centre.
- IPS officers have a quota of 40% in CPOs and CAPFs. The Centre had in November 2019 written to states **proposing to decrease this quota by 50%,** saying more than 60% of posts remain vacant since most states do not spare their officers.
- Also, MHA held that the **number of districts in some states doubled in a decade or so, the availability of officers was one third.**

Why would states have a problem?

- The new order may be seen by many states as the Centre's attempt at pushing the envelope further on **increasing its powers over officers serving in the states.**

- Further, there is a **serious paucity of officers in the states too.**
- It is against the **spirit of cooperative federalism.**
- The proposed amendment would weaken the **State's political control over the bureaucracy.**
- It would affect effective governance and **create avoidable legal and administrative disputes.**
- The Centre could weaponise the **bureaucracy against an elected State government.**

All India Services (AIS)

- **About:** The All India Services (AIS) comprises the three civil services of India:
  - Indian Administrative Service (IAS);
  - Indian Police Service (IPS); and
  - Indian Forest Service (IFoS).
- **Federal Nature of AIS Officers:** AIS officers are recruited by the Union Government (by UPSC) and their services are **allotted under various State Cadres.**
  - Hence, they have the **accountability to serve both under the State and the Centre.**
  - However, the **Cadre Controlling Authority** of AIS is the Union Government.
    - The **DoPT** is the cadre controlling authority of IAS officers.
    - Cadre controlling authority for deputation of I**ndian Police Service and Indian Forest Service Officers (IFoS)** is the **Ministry of Home Affairs (MHA) and the Environment Ministry respectively.**
- **Central Deputation Reserve:** The State government has to prescribe a number of officers available for deputation as prescribed under Central Deputation Reserve.
  - Every State cadre of the service provides for a **Central deputation quota** which in turn requires additional recruitment to be made to the service to provide for trained and experienced members to serve on posts in the Central Government.
- **Deputation of AIS Officer and Present Rules:**
  - In normal practice, the **Centre asks every year for an "offer list"** of officers of the All India Services willing to go on central deputation, after which it selects officers from that list.
  - Officers have to get a **no-objection clearance** from the State government for Central deputation.

Note:

○ States have to depute the All India Services (AIS) officers, to the Central government offices and at any point, it cannot be more than **40% of the total cadre strength.**

Sagar Parikrama

Why in News?

The Ministry of Fisheries, Animal Husbandry and Dairying will inaugurate the **'Sagar Parikrama'** to know the problems of **Coastal Fisher folk.**

What is Sagar Parikrama?

➢ It is a navigation journey to be **conducted in all coastal states/UTs through a pre-decided sea route** to demonstrate solidarity with all fisherfolk, fish farmers and concerned stakeholders.

➢ It is envisioned as a part of 'Azadi Ka Amrit Mahotsava' **saluting our great freedom fighters, sailors and fishers.**

➢ The Parikrama will start from Mandvi, Gujarat in Ist phase and will be organised in other districts of Gujarat and other State/UTs in subsequent phases.

  ○ The **first leg of 'Sagar Parikrama'** shall start on 5th March 2022 from **Mandvi and end at Porbandar** on 6th March 2022.

  ○ The entire distance will be covered **from the coastline of Mandvi** on the coast of the **Arabian Sea** in the Kutch district of Gujarat, situated at the estuary where the **river Rukmavati meets the Gulf of Kutch.**

  ○ The **Rukmavati River** is a south flowing river originating in the central Kutch District and empties into the Arabian Sea

➢ It will also conduct **interaction programmes with fishermen, fisher communities and stakeholders in these locations** and districts in order to know the problems of Coastal Fisher folk.

➢ It is envisaged in the sea across the coastal belt demonstrating solidarity with all fisher folk, fish farmers and concerned stakeholders as a spirit of **Atma Nirbhar Bharat.**

What is Significance?

➢ It will focus on **sustainable balance between the utilisation of marine fisheries resources for food security of the nation** and livelihoods of coastal fisher communities and protection of marine ecosystems.

➢ Oceans are vital to the economies, security and livelihoods of Indian coastal states.

  ○ The Country has a **coastline of 8118km**, covering 9 maritime States/4UTs and providing livelihood support to millions of coastal fisher folk.

What is the Scenario of the Fisheries Sector in India?

➢ India is the **second major producer of fish** through aquaculture in the world.

➢ India is the **4th largest exporter of fish in the world** as it contributes 7.7% to the global fish production.

➢ Currently, this sector provides l**ivelihood to more than 2.8 crore people within the country.** Nevertheless, this is a sector with untapped potential.

➢ The fisheries sector has demonstrated double-digit average annual growth of 10.87% since 2014-15 with record fish production of 145 lakh tons during 2020-21 as per the **Economic Survey for 2021-22**

➢ Indian Fisheries and Aquaculture sector registering an average annual growth of 7.53% during the last 5 years. The country exported 12.89 lakh metric tons of fisheries products valued at Rs 46,662 crore (USD 6.68 billion) during 2019-20.

➢ Despite challenges pertaining to infrastructure, the measures by the Central government in the past recent years ensured that the **fisheries sector continued to register an annual growth rate of more than 10%.**

What are the Initiatives related to Fisheries?
➢ **Fishing Harbours**
➢ **Seaweed Park**
➢ **Pradhan Mantri Matsya Sampada Yojana**
➢ **Palk Bay Scheme**
➢ **Marine Fisheries Bill**
➢ **Fisheries and Aquaculture Infrastructure Development Fund (FIDF)**
➢ **Kisan Credit Card (KCC)**
➢ **Marine Products Export Development Authority**

Amendment to the Mines and Minerals Act 1957

Why in News?

Recently, the Union Cabinet has approved **a proposal to amend the Second Schedule to the MMDR (Mines and Minerals Development and Regulation) Act to specify the royalty rates of certain minerals**, including potash, emerald and platinum group of metals.

➤ **MMDR Act, 1957** regulates the mining sector in India and specifies the requirement for obtaining and granting mining leases for mining operations.

What is the Background?

➤ The Act was **amended in 2015** to usher in new regime of granting mineral concessions through auction **to ensure transparency and non-discrimination in allocation of mineral wealth** of the country.

➤ To give further impetus to the mineral sector, the **Act has been further amended in 2021.** Under the reforms, the Government has given **a major boost to auction of mineral blocks, increasing production, improving ease of doing business** in the country and increasing the contribution of mineral production to **Gross Domestic Product (GDP).**

  ○ The reforms made are in the provisions related to statutory requirements, removal of end-use restrictions for captive mines and the division between captive and non-captive mines, transfer by auction of mineral-concessions, National Mineral Exploration Trust (NMET), National Mineral Index(NMI), the inclusion of private sector, and so on.

➤ The Ministry of Mines **has also taken steps to increase exploration of minerals**, which has led to the availability of more blocks for auction.

  ○ Exploration activities have increased **not only for traditional minerals** such as iron ore, bauxite, limestone but **also for deep-seated minerals, fertilizer minerals, critical minerals** and minerals which are imported.

  ○ In the last 4-5 years, central agencies such as the Geological Survey of India and Mineral Exploration Corporation Ltd have carried out exploration and handed the reports to the states.

What are Mineral Concessions?

➤ There are **three kinds** of mineral concessions, viz Reconnaissance Permit (RP), Prospecting License (PL) and Mining Lease (ML).

➤ **RP** is granted for preliminary prospecting of a mineral through regional, aerial, geophysical or geochemical surveys and geological mapping.

➤ **PL** is granted for undertaking operations for the purpose of exploring, locating or proving mineral deposit.

➤ **ML** is granted for undertaking operations for winning any mineral.

What are the Key Points related to Approval?

➤ The approval would **ensure auction of mineral blocks in respect of Glauconite, Potash, Emerald, Platinum Group of Metals, Andalusite and Molybdenum** thereby **reducing import of these minerals saving valuable forex reserves.**

  ○ Glauconite and Potash are used as fertiliser in agriculture. Platinum group of metals and Andalusite and Molybdenum are high-value minerals used across industries.

➤ The Ministry of Mines has proposed **reasonable rates of royalty i**n order to encourage better participation in the auction of mines.

  ○ A royalty is a fee that is imposed by local, state or federal governments on either the amount of minerals produced at a mine or the revenue or profit generated by the minerals sold from a mine

➤ The Ministry of Mines will **provide a methodology for the calculation of Average Sale Price (ASP) of these minerals** required for enabling the auction of these mineral blocks.

➤ The rate of royalty for Andalusite, Sillimanite and Kyanite which are **mineral polymorphs** are kept at the same level.

  ○ Polymorphs are minerals with the same chemical composition but different crystal structures.

➤ The approval will help **generate empowerment opportunities in the mining sector as well as the manufacturing sector** which will further help in ensuring inclusive growth of a large section of the society.

Note:

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❍ The approval would ensure **auction of mineral blocks in respect of Glauconite, Potash, Emerald, Platinum Group of metals, Andalusite and Molybdenum for the first time** in the country.

How are Minerals regulated in India?

➢ **Ownership of Mineral:**

❍ The State Governments are the owners of minerals located within the boundary of the State concerned.

- District Mineral Foundations are statutory bodies in India established by the State Governments by notification. They derive their legal status from Mines and Minerals (Development and Regulation) Act, 1957

- The objective of District Mineral Foundation is to work for the interest of the benefit of the persons and areas affected mining related operations in such manner as may be prescribed by the State Government.

➢ The Central Government is the owner of the minerals underlying the ocean within the territorial waters or the **Exclusive Economic Zone** of India.

❍ **International Seabed Authority (ISA)** is the organization through which States Parties to **UNCLOS** organize and control all mineral-resources-related activities in the Area for the benefit of mankind as a whole.

➢ **Granting Mineral Concessions:**

❍ The State Governments grant mineral concessions for all the minerals located within the boundary of the State, under the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 and Mineral Concession Rules, 1960.

❍ However, for **minerals specified in the First Schedule** to the Mines and Minerals (Development and Regulation) Act, 1957 **approval of the Central Government is necessary. Schedule I** contains minerals such as **coal** and lignite, minerals of the "rare earths" group containing Uranium and Thorium.

➢ Also, the **Central Government notifies certain minerals as 'minor' minerals** from time to time for which the absolute powers for deciding on procedures of seeking applications for and **granting mineral concessions**, fixing rates of royalty, dead rent, and power to revise orders rest only with the **State Government.**

❍ **Example of minor minerals include** building stones, gravel, ordinary clay, ordinary sand.

37ᵗʰ Foundation of National Crime Records Bureau

Why in News?

Recently the **37ᵗʰ Foundation Day** of **National Crime Records Bureau (NCRB)** was celebrated (11ᵗʰ March 1986).

What is the National Crime Records Bureau (NCRB)?

➢ **About:**

❍ NCRB, headquartered in New Delhi, was set-up in 1986 under the **Ministry of Home Affairs** to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators.

❍ It was set up based **on the recommendations of the National Police Commission (1977-1981)** and the **MHA's Task Force (1985).**

➢ **Functions:**

❍ The Bureau has been entrusted to maintain **National Database of Sexual Offenders (NDSO)** and share it with the **States/UTs on regular basis.**

❍ NCRB has also been **designated as the Central Nodal Agency** to manage technical and operational functions of the **'Online Cyber-Crime Reporting Portal'** through which any citizen can lodge a complaint or upload a video clip as an evidence of crime related to child pornography, rape/gang rape.

❍ The responsibility of implementation of the **Inter-operable Criminal Justice System (ICJS)** has also been given to the NCRB.

- ICJS is a **national platform for enabling** integration of the main IT system used for delivery of Criminal Justice in the country.

- It seeks to integrate the **five pillars of the system** viz Police (through **Crime and Criminal Tracking and Network Systems),** e-Forensics for Forensic Labs, **e-Courts** for Courts, e-Prosecution for Public Prosecutors and **e-Prisons** for Prisons.

- The Government of India has set a target of the second phase of ICJS (Inter-operable Criminal Justice System) by 2026 with an expenditure of about Rs. 3,500 crore.

Note:

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- ➤ **Major Publications:**
  - ○ **Crimes in India**
  - ○ **Accidental Deaths and Suicides**
  - ○ **Prison Statistics**
  - ○ **Reports on Missing Women and children in India**

What is the State of Crime in India?

- ➤ According to the **Crime in India Report 2020:**
  - ○ **Communal riots** registered an **increase of 96% in 2020** over the previous year.
  - ○ The number of cases registered for **crimes against women, children and senior citizen**s, theft, burglary, robbery and dacoity, among others, d**ropped by about 2 lakh.**
  - ○ Cases under the **'environment-related offences' category increased by 78.1%** in the country in 2020.
  - ○ The rate of **cyber crime** (incidents per lakh population) also increased from 3.3% in 2019 to 3.7% in 2020.

How can the Functioning of the NCRB be Strengthened?

- ➤ States should **use NCRB's data in formulating their annual police strategy,** it should have a **multi-dimensional and multi-purposed use in crime control,** only then will this institution become result-oriented.
- ➤ 16,390 police stations in the country have been connected on CCTNS, but **Central agencies** such as the **Central Bureau of Investigation (CBI)**, the **Narcotics Control Bureau (NCB)** and the **National Investigation Agency (NIA)** are still not connected with it.
  - ○ All Agencies must join the CCTNS as soon as possible and make data 100 percent complete.
- ➤ After the completion of phase 2 of ICJS, it should be made increasingly useful by using **Artificial Intelligence, Block Chain,** analytical tools and **fingerprint system.**

River Rejuvenation Detailed Project Report

Why in News?

Recently, the **Ministry of Environment, Forest and Climate Change** released **Rs. 19,000–crore Detailed Project Reports (DPRs)** on rejuvenation of 13 major rivers through forestry interventions.

- ➤ These 13 rivers are Jhelum, Chenab, Ravi, Beas, **Sutlej**, **Yamuna**, **Brahmaputra**, **Narmada**, **Godavari**, **Mahanadi**, **Krishna**, **Cauvery**, and **Luni**.

What was the idea behind these DPRs?

- ➤ It is **modelled on the lines of the work done** as part of the **National Mission for Clean Ganga (NMCG)** in 2015-16 for the river and acknowledging that the growing water crisis is on account of degradation of river ecosystems,
- ➤ The project adopted a **multi-scale, multi-stakeholder, multidisciplinary and holistic approach** so as to accomplish broad objectives of **'Aviral Dhara' (uninterrupted flow)**, **'Nirmal Dhara' (clean water)**, and ecological rejuvenation.

How much area/landscape is Expected to be Rejuvenated?

- ➤ The **13 rivers collectively cover a total basin area of 18,90,110 square kilometres** that represents **57.45% of the geographical area of the country.**
- ➤ The length of 13 rivers, including **202 tributaries** within the delineated riverscapes, is **42,830 km.**
  - ○ The **Brahmaputra Riverscape incorporated the highest number of tributaries (30)** and 1,54,456 sq km area, respectively.
- ➤ The documents propose **many kinds of afforestation for the rivers.** They include timber species, medicinal plants, grasses, shrubs and fuel fodder and fruit trees.

What are the Interventions Planned?

- ➤ The DPRs recognise the **merit of adopting a holistic riverscape approach for forestry interventions** in three types of landscapes viz., **natural, agriculture, and urban** within the vast expanse of a riverscape besides conservation interventions including soil and moisture conservation measures, **riverine and riparian wildlife management, and wetland management.**
- ➤ These are done with **supporting activities** such as policy level interventions, strategic and adaptive research, capacity development, awareness creation, project management and participatory monitoring & evaluation).

Note:

What are the Potential Benefits of the Proposed Interventions?

➢ **Increase in Forest Cover:**
   ○ It is expected to **increase the cumulative forest cover** of 7,417.36 sq km across 13 riverscapes.

➢ **Help in Sequestration of CO_2:**
   ○ Proposed interventions would **help in sequestration of CO_2** to the extent of 50.21 million tonnes of CO_2 equivalent in 10-year-old plantations while the value of estimated CO_2 sequestered in 20-year-old plantations would be 74.76 million tonnes of CO_2.

➢ **Help in Groundwater Recharge:**
   ○ They would help r**echarge groundwater, reduce sedimentation,** generate Rs. 449.01 crore from non-timber and other forest produce.

➢ **Employment Generation:**
   ○ They are also expected to make a **significant contribution towards employment generation** by way of nearly 344 million man-days of work.

➢ **Achieving International Commitments:**
   ○ These efforts would **help India meet its international climate commitments** of:
      ● Creating an **additional carbon sink of 2.5 -3 billion tonnes** of CO_2 equivalent through additional **forest and tree cover** by 2030 under the **Paris Agreement** of the **United Nations Framework Convention on Climate Change (UNFCCC);**
      ● Restore 26 million hectares of degraded lands by 2030 and
      ● Halt biodiversity loss by 2030 under **Convention on Biological Diversity (CBD)** and **Sustainable Development Goals.**
   ○ At the **COP26** meeting, India promised to reduce its projected **carbon emission by one billion tonnes by 2030**, meet 50% of energy requirements with **renewable energy** by 2030, enhance **non–fossil energy** capacity to 500 gigawatt by 2030, reduce the carbon intensity of its economy by 45% by 2030 and **achieve net zero emission** by 2070.
   ○ Under the **Bonn Challenge**, India had also **pledged in 2015 to restore five million hectares of degraded land by 2030.**

What are the associated Challenges?

➢ **Growing water crisis** on account of depleting fresh water resources especially due to **shrinking and degradation of river ecosystems** is a major impediment to achieving national goals pertaining to **environment, conservation, climate change** and **sustainable development.**

➢ The **success of the project hinges on several factors**, including the correct method of plantation and changes in climate.

■■■

Note:

Economic Scenario

Highlights

- UPI123Pay and Digisaathi
- National Land Monetization Corporation
- Indians to Trade inSelect US Stocks
- First Gati Shakti Cargo Terminal
- RBI's Regulatory Framework for Microfinance Loans
- Strengthening of Pharmaceutical Industry Scheme
- Current Account Deficit
- Reforms in FDI Policy ahead of LIC IPO
- Minimum Assured Return Scheme: PFRDA

- Securities and Exchange Board of India
- Market Infrastructure Institution
- Impact of Russian Invasion on Global Chip Shortage
- Monetary Policy Committee: RBI
- First Virtual Smart Grid Knowledge Centre
- MSME Innovative Scheme
- Dollar-Rupee Swap
- Increased NPAs in MSMEs

UPI123Pay and Digisaathi

Why in News

The Reserve Bank of India (RBI) has launched new UPI services for feature phones called **UPI123Pay** for non internet users to make digital payments, also launched a 24x7 helpline for digital payments called 'Digisaathi'.

➢ 'Digisaathi' has also been set up by the **National Payments Corporation of India (NPCI)** to provide users with automated responses on information related to digital payment products and services. Presently it is available in English and Hindi language.

What is Unified Payments Interface (UPI)?

➢ It is an **advanced version of Immediate Payment Service (IMPS)**- round–the-clock funds transfer service to make cashless payments faster, easier and smoother.

➢ UPI is a system **that powers multiple bank accounts into a single mobile application (of any participating bank)**, merging several banking features, seamless fund routing & merchant payments into one hood.

➢ UPI is currently the biggest among the **National Payments Corporation of India (NPCI) operated systems** including National Automated Clearing House (NACH), Immediate Payment Service (IMPS), Aadhaar enabled Payment System (AePS), Bharat Bill Payment System (BBPS), RuPay etc.

➢ The top UPI apps today include PhonePe, Paytm, Google Pay, Amazon Pay and **BHIM,** the latter being the Government offering.

What is UPI 123 Pay?

➢ **About:**
  - It will work on simple phones that do not have an internet connection.
    - As of now, the UPI features are mostly available only on smartphones.
  - The UPI service for feature phones will leverage the **RBI's regulatory Sandbox** on Retail Payments.
    - A **regulatory sandbox** usually refers to live testing of new products or services in a controlled/test regulatory environment for which regulators may permit certain regulatory relaxations for the limited purpose of the testing.
  - The UPI service will enable digital transactions through a mechanism of **'on-device' wallet in UPI applications."**
  - The users will be able to undertake a host of transactions **based on four technology alternatives including-** IVR (interactive voice response) number, missed call-based approach, app functionality in feature phones and proximity sound-based payments.

➢ **Benefits:**
  - The new service for feature phones **will enable individuals to make direct payments to others without smartphones and internet.**

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- Users can initiate payments to friends and family, pay utility bills, recharge the FAST Tags of their vehicles, pay mobile bills and also allow users to check account balances.
- It will allow customers to use feature phones for almost all transactions except scan and pay.
- UPI123Pay will benefit an estimated 40 crore feature phone users and enable them to undertake digital payments in a secure manner. This will bring non-smartphone users under the digital payment system.

National Land Monetization Corporation

Recently, the Union Cabinet has approved the setting up **National Land Monetization Corporation (NLMC)** as a wholly owned Government of India company.

➢ The Finance Minister had **announced plans to set up a special purpose vehicle** for this purpose in the **Union Budget 2021-22.**

➢ In August, 2021, the government of India launched the **National Monetisation Pipeline (NMP).**

What is National Land Monetization Corporation (NLMC)?

➢ **About:**
- NLMC will **undertake surplus land asset monetisation as an agency function**, and assist and provide technical advice to the Centre in this regard.
- NLMC has been announced with an **initial authorized share capital of Rs 5000 crore** and **paid-up share capital of Rs 150 crore.**
- The **Board of Directors of NLMC** will comprise senior Central Government officers and eminent experts to enable professional operations and management of the company.
  - The Chairman, non-Government Directors of the NLMC will be **appointed through a merit-based selection process.**
- The new company, which will be **set up under the administrative jurisdiction of the finance ministry.**

- NLMC will **hire professionals from the private sector** just as in the case of similar specialised government companies like the **National Investment and Infrastructure Fund (NIIF)** and **Invest India.**

➢ **Benefits:**
- This will **enable productive utilization of under-utilized assets** to trigger private sector investments, new economic activities, boost local economy and generate financial resources for economic and social infrastructure.
- NLMC is also **expected to own, hold, manage and monetize surplus land and building assets** of CPSEs under closure and the surplus non-core land assets of Government owned CPSEs under strategic disinvestment.
  - This will **speed up the closure process of CPSEs** and **smoothen the strategic disinvestment process of Government owned CPSEs.**

➢ **Challenges:**
- Among the **key challenges that NLMC might face** include lack of identifiable revenue streams in particular land assets, dispute resolution mechanism, various litigations and lack of clear titles, and low interest among investors in remote land parcels.

What will be the Function of the NLMC?

➢ NLMC will undertake monetization of surplus land and building assets of **Central Public Sector Enterprises (CPSEs)** and other Government agencies.
- CPSEs are those companies in which the **direct holding of the Central Government or other CPSEs is 51% or more.**
- At present, **CPSEs hold considerable surplus, unused and under-used non-core assets** in the nature of land and buildings.

➢ NLMC will also **advise and support other Government entities** (including CPSEs) in **identifying their surplus non-core assets** and monetizing them in a professional and efficient manner to generate maximum value realization.

➢ NLMC will **act as a repository of best practices in land monetization**, assist and provide technical advice to the Government in implementation of asset monetization programmes.

Note:

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What is Asset Monetisation?

➤ **About:**
- ○ It is the process of **creating new sources of revenue for the government** and its entities by unlocking the economic value of unutilised or underutilised public assets.

➤ **Need:**
- ○ India needs more **infrastructure but the public sector simply doesn't have the resources** to build it. There are two possible responses.
  - For setting new infrastructure, **one can think of bringing in the private sector** with a contractual framework for what it has to do, and then let it bring its own resources.
  - To recognise that **there are more risks in the construction stage** and it is perhaps better to let the public sector build the asset and then sell it off to private players or if not an outright sale, let the private sector manage it.
- ○ Building new infrastructure has **two constraints for any country including India** –
  - Access to patient, predictable and cheap capital and
  - Execution capability, where government and private agencies can take up multiple marquee projects simultaneously.

➤ **Related Challenges:**
- ○ **Lack of identifiable revenue streams** in various assets.
- ○ **Slow pace of privatisation** in government companies.
- ○ Further, **less-than-encouraging bids in the recently launched Public-private partnerships (PPP) initiative** in trains indicate that attracting private investors' interest is not that easy.
- ○ **Asset-specific Challenges:**
  - Low Level of capacity utilisation in gas and petroleum pipeline networks.
  - Regulated tariffs in power sector assets.
  - Low interest among investors in national highways below four lanes.

Way Forward

➤ The success of the infrastructure expansion plan **would depend on other stakeholders playing their due role.**

- ○ These include **State governments and their Public Sector Enterprises** and the private sector.
- ○ In this context, the **Fifteenth Finance Commission** has recommended the setting up of a High-Powered Intergovernmental Group to re-examine the fiscal responsibility legislation of the Centre and States.

➤ **Maintaining transparency is the key** to adequate realisation of the asset value.

➤ Recent experience suggests that **Public-Private Partnerships (PPP)** now involve transparent auctions, a clear understanding of the risks and payoffs, and an open field for any and all interested parties.
- ○ Thus, the **utility of PPP in greenfield projects can not be neglected.**

Indians to Trade in Select US Stocks

Why in News?

Recently, investors in India have been **allowed to trade in select US stocks** through the **NSE International Exchange (NSE IFSC).**

➤ Currently, **Indian investors buy US stocks through designated online brokers** who have permission from Indian and US regulators to offer such services.

What does this Mean?

➤ This means **domestic investors can purchase US stocks** like Amazon, Alphabet, Tesla, etc.
- ○ A stock (also known as equity) is a security that represents the ownership of a fraction of a corporation.

➤ However, the offering will be **in the form of unsponsored depository receipts.**
- ○ For example, **one share of Tesla will be equivalent to 100 NSE IFSC receipts.**

➤ The **International Financial Services Authority (IFSCA)** has already given the approval for the plan.

What is this Exchange?

➤ NSE IFSC (NSE International Exchange) incorporated on 29th November 2016, is a **fully-owned subsidiary of National Stock Exchange of India Limited (NSE).**

Note:

- Stock exchanges operating in the **Gujarat International Finance Tech City (GIFT) city** are permitted to offer trading in securities in any currency other than the Indian rupee.
- Accordingly, **NSE IFSC** which launched trading on **5th June 2017**, offers USD denominated trading in various products.
- **NSE IFSC offers** trading in various products including index derivatives, stock derivatives, currency derivatives, commodity derivatives and debt securities.

What is an NSE IFSC Receipt?

- It is a negotiable financial instrument in the nature of an unsponsored **'depository receipt'**, which means it is a derivative product and investors can directly trade in the stocks without having to do so through registered online brokers.
- Just like shares are purchased domestically, **shares can be bought in the US** and issue receipts against them, which will be known as **NSE IFSC Receipts.**

What is the Advantage?

- The business model offered by NSE IFSC will **not only provide an additional investment opportunity** to the Indian investors but also **make the entire process of investment easy and keep it at a low cost.**
- When compared to the **underlying shares traded in US marketplaces**, investors will be able to **trade in fractional quantity value.**
- Investors will be **able to hold the depository receipts in their own GIFT City demat accounts** and will be eligible for corporate action benefits on the underlying stock.
  - A Demat Account or Dematerialised Account provides the facility of holding shares and securities in an electronic format.
  - **Corporate actions** are benefits given by a company to its investors. These may be either monetary benefits like dividend, interest or non-monetary benefits like bonus, rights, etc.

Who can invest?

- **Person resident outside India, Non-resident Indians and Individual resident in India** who is eligible under **FEMA (Foreign Exchange Management Act)** to invest funds offshore, to the extent allowed in the **Liberalized Remittance Scheme** of **Reserve Bank of India.**

- The main objective for which FEMA was introduced in India was to **facilitate external trade and payments**
- Under the LRS framework, the **RBI permits the resident individuals** to remit up to U**SD2,50,000 per financial year** for any permitted current or capital account transaction.
- However, **US and Canadian residents are not allowed** to invest through this instrument.

What are the Potential Risks for an Investor?

- **Investing in NSE IFSC Receipts carries risks. Some of the significant risks are as follows:**
  - General price and volatility risk, Risk of illiquidity, Underlying Share risk, Risk of Cancellation and Termination of the NSE IFSC Receipt, Tax risks, Other risks such as **force majeure**, changes in law, settlement, trading, etc.

First Gati Shakti Cargo Terminal

Why in News

Indian Railways' **first Gati Shakti Cargo Terminal** commissioned in Asansol Division in pursuance of the Prime Minister's vision **"Gati Shakti".**

- This is the first such GCT commissioned in Indian Railways since the publication of GCT policy in December 2021
- It is **expected to enhance Indian Railways' earnings**. The commissioning of this terminal and more such terminals will have a very positive impact on the economy of the nation.

What is the PM Gati Shakti Scheme?

- **About:**
  - In 2021 the government launched the ambitious **Gati Shakti scheme or National Master Plan for multi-modal connectivity plan**, with the aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.
- **Aim:**
  - To ensure **integrated planning and implementation of infrastructure projects in the next four years**, with focus on expediting works on the ground, saving costs and creating jobs.

Note:

❍ The Gati Shakti scheme will subsume the Rs 110 lakh crore **National Infrastructure Pipeline** that was launched in 2019.

❍ Besides cutting logistics costs, the scheme is also aimed at increasing cargo handling capacity and reducing the turnaround time at ports to boost trade.

❍ It also aims to have **11** **industrial corridors** and two new **defence corridors** - one in **Tamil Nadu and other in Uttar Pradesh**.

❍ Extending **4G connectivity** to all villages is another aim. Adding 17,000 kms to the gas pipeline network is being planned.

❍ It will help in fulfilling the ambitious targets set by the government for 2024-25, including **expanding the length of the national highway network to 2 lakh kms,** creation of more than 200 new airports, heliports and water aerodromes.

GATI SHAKTI MASTER PLAN

Roadways capacity to be increased	Railways transport cargo capacity to be increased to 1,**600 tonnes** by FY25	Renewable capacity to be increased to **225 GW** by FY25
Around 200 new airports, heliports and water aerodromes envisioned	Transmission network to be increased to **4,54,200 circuit km**	**4G** connectivity for villages by FY22. **Around 20** new mega food parks

➢ **Expected Outcomes**

❍ The scheme will **help mapping the existing and proposed connectivity** projects.

❍ Also, there will be immense clarity on how different regions and industrial hubs in the country are linked, particularly for last mile connectivity.

❍ A holistic and integrated transport connectivity strategy will greatly support **Make in India** and integrate different modes of transport.

❍ It will **help India become the business capital of the world.**

➢ **Need for Integrated Infrastructure Development:**

❍ There exists a **wide gap between macro planning and micro implementation due to the lack of coordination** and advanced information sharing as departments think and work in silos.

❍ According to a study, the logistical cost in India is about 13% of GDP, which is higher than developed countries.

● Due to this high logistical cost, the competitiveness of India's exports is greatly reduced.

❍ It is **globally accepted that the creation of quality infrastructure for Sustainable Development is a proven way**, which gives rise to many economic activities and creates employment on a large scale.

❍ The scheme is in synergy with the **National Monetisation Pipeline (NMP).**

● The NMP has been announced to provide a clear framework for monetisation and give potential investors a ready list of assets to generate investment interest.

What are the Challenges?

➢ **Low Credit Off-take:** Although the government had taken up 'strong' banking sector reforms and the **Insolvency and Bankruptcy Code** had yielded about Rs. 2.4 lakh crore of recoveries on bad loans, there are concerns about declining credit offtake trends.

❍ Banks give credit off-takes to help businesses acquire financing for future projects through the promise of future income and proof of an existing market.

➢ **Lack of Demand:** In the **post-Covid-19 scenario,** there is a lack of private demand and investment demand.

➢ **Structural Problems:** Due to land acquisition delays and litigation issues, the rate of implementation of projects is very slow on global standards.

❍ Getting approvals is very difficult in terms of land access, environmental clearances; also impending litigation in court delays the infrastructure projects.

RBI's Regulatory Framework for Microfinance Loans

Why in News?

Recently, the **Reserve Bank of India (RBI)** allowed **Microfinance Institutions(MFI)** the freedom to set interest rates they charge borrowers, with a caveat that the rates should not be usurious.

➢ The guidelines will take effect **1st April 2022.**

➢ Earlier in 2021, the RBI proposed to lift the **interest rate cap on MFI.**

Note:

What are the Highlights of the Guidelines?

➤ **Definition of a Microfinance Loan:**

○ The RBI revised the **definition of a microfinance loan to indicate a collateral-free loan** given to a household having annual **income of up to Rs. 3 lakh.**

● Earlier, the upper limits were **Rs.1.2 lakh for rural borrowers** and **Rs.2 lakh for urban borrowers.**

➤ **For Regulated Entities (REs):**

○ As per the revised norms, **Regulated Entities (REs) should put in place a board-approved policy** regarding pricing of microfinance loans, a ceiling on interest rate and all other charges applicable to microfinance loans.

○ Each RE **shall disclose pricing-related information** to a prospective borrower in a standardised, simplified factsheet.

➤ **Penalty on Microfinance Loans:**

○ There shall be **no prepayment penalty on microfinance loans**.

○ Penalty, if any, for delayed payment shall be **applied on the overdue amount and not on the entire loan amount.**

○ Any change in interest rate or any other charge shall be **informed to the borrower well in advance** and these changes shall be effective only prospectively.

➤ **Recovery of Loans:**

○ RE would have to **put in place a mechanism for identification of the borrowers facing repayment-related difficulties**, engagement with such borrowers and providing them necessary guidance about the recourse available.

● To ensure due notice and appropriate authorisation, the RE will **provide the details of recovery agents to the borrower** while initiating the process of recovery.

What will be the Applicability of the Guidelines?

➤ All **Commercial Banks** (including Small Finance Banks, Local Area Banks, and Regional Rural Banks) **excluding Payments Banks**.

➤ All Primary (Urban) **Co-operative Banks**/ State Co-operative Banks/ District Central Co-operative Banks.

➤ All **Non-Banking Financial Companies** (including Microfinance Institutions and Housing Finance Companies).

What will be the Benefits?

➤ **Expand Market Opportunity**: The revision of the income cap to Rs. 3 lakh will **expand the market opportunity and interest rate cap removal** will promote risk-based underwriting.

➤ **Encourage Healthy Competition**: It will go a **long way in harmonising the regulatory framework** for different types of lenders, **encouraging healthy competition** and enabling customers to make an informed choice regarding their credit needs.

➤ **Financial Inclusion:** The new framework will **help scale the industry further, ensure better risk mitigation and financial inclusion**.

➤ **Level Playing Field:** It will **create a level playing field and both borrowers and lenders will now have options.**

➤ **Cater the Needy:** It will **safeguard the interests of the borrowers** and help the sector to cater to the needy borrowers.

What is a Microfinance Institution?

➤ MFI is an **organisation that offers financial services to low income populations.**

○ These services include microloans, microsavings and microinsurance.

➤ MFIs are **financial companies that provide small loans** to people who do not have any access to banking facilities.

➤ In most cases the **so-called interest rates are lower than those charged by normal banks**, certain rivals of this concept accuse microfinance entities of creating gain by manipulating the poor people's money.

➤ Microfinance sector has **grown rapidly over the past few decades** and currently it is serving around 102 million accounts (including banks and **small finance banks**) of the poor population of India.

➤ Different types of financial services providers for poor people have emerged - **Non-Government Organisations (NGOs);** cooperatives; community-based development institutions like **self-help groups** and credit unions; commercial and state banks; insurance and credit card companies; telecommunications and wire services; post offices; and other points of sale - offering new possibilities.

➤ **NBFC-MFIs** in India are regulated by the Non-Banking Financial Company -Micro Finance Institutions (Reserve Bank) Directions, 2011 of the **Reserve Bank of India (RBI).**

Note:

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Strengthening of Pharmaceutical Industry Scheme

Why in News?

Recently, the **Ministry of Chemicals and Fertilisers has released the guidelines for the scheme "Strengthening of Pharmaceutical Industry (SPI)",** with a total financial outlay of Rs.500 Cr for the **period from FY 21-22 to FY 25-26.**

What are the Key Points?

➢ **About:**

❍ Under the Scheme, **financial assistance to pharma clusters will be provided for creation of Common Facilities.**

❍ In order to upgrade the production facilities of SMEs and **MSMEs (Micro, Small and Medium Enterprises)** so as to meet national and international regulatory standards (World Health Organization-Good Manufacturing Practice (WHO-GMP) or Schedule-M), **interest subvention or capital subsidy on their capital loans will be provided,** which will further facilitate the growth in volumes as well as in quality.

● WHO-GMP is the **aspect of quality assurance that ensures that medicinal products are consistently produced and controlled to the quality standards** appropriate to their intended use and as required by the product specification.

● **Schedule M of drugs and cosmetics rules** define the GMP requirements for the pharmaceutical industry in India.

➢ **Components:**

❍ **Assistance to Pharmaceutical Industry for Common Facilities (APICF)**, to strengthen the existing pharmaceutical clusters' capacity for their sustained growth by creating common facilities.

● Under this, support for clusters for creation of common facilities with the focus on R&D (Research and Development) Labs, Testing Laboratories, Effluent Treatment Plants, Logistic Centers and Training Centres in this order of priority with an outlay of 178 Cr is proposed.

❍ **Pharmaceutical Technology Upgradation Assistance Scheme (PTUAS)** to facilitate Micro, Small and Medium Pharma Enterprises (MSMEs) of proven track record to meet national and international regulatory standards.

● Under the PTUAS sub-scheme, support for SME Industries is proposed, either through up to a maximum of 5% per annum (6% in case of units owned and managed by SC/STs) of interest subvention or through Credit linked Capital subsidy of 10%.

● An outlay of 300 Cr has been earmarked for sub scheme for the scheme period of five years.

❍ **Pharmaceutical & Medical Devices Promotion and Development Scheme** (PMPDS) to facilitate growth and development of Pharmaceutical and Medical Devices Sectors through study/survey reports, awareness programs, creation of databases, and promotion of industry.

● Under the PMPDS sub-scheme, knowledge and awareness about the Pharmaceutical and MedTech Industry will be promoted.

What is the Significance?

➢ It will strengthen the existing infrastructure facilities and will make India a global leader in the Pharma Sector.

➢ This will not only improve the quality but also ensure the sustainable growth of clusters.

➢ The scheme will address the rising demand in terms of support required to existing Pharma clusters and MSMEs across the country to improve their productivity, quality and sustainability.

What are the Schemes Related to the Pharma Sector?

➢ **Promotion of Bulk Drug Parks Scheme:**

❍ The government aims to develop 3 mega Bulk Drug parks in India in partnership with States to **reduce manufacturing cost of bulk drugs in the country and dependency on other countries** for bulk drugs.

❍ The scheme will also help in providing continuous supply of drugs and ensure delivery of affordable healthcare to the citizens.

➢ **Production Linked Incentive (PLI) Scheme:**

❍ The PLI scheme aims **to promote domestic manufacturing of critical Key Starting Materials (KSMs)/Drug Intermediates and Active Pharmaceutical Ingredients (APIs) in the country.**

Note:

Current Account Deficit

Why in News?

Recently, an American financial services company Morgan Stanley has predicted that the **Current Account Deficit** will widen to a 10-year high of 3% of GDP in FY23.

What are the Key Points?

➢ In the wake of continued **geopolitical tensions, the surge in oil prices** is likely to be sustained, which would lead to deterioration in the current account deficit from a higher oil import bill.

➢ The **Balance of Payments (BoP)** to be in deficit of approximately 0.5-1% of **GDP (Gross Domestic Product)** because capital flows are likely to be lower than the current account deficit.

➢ The extent of vulnerability to funding risks **will be cushioned by the large forex reserves,** which stand at USD 681 billion.

➢ The company expects the April 2022 policy to mark the process of **policy normalization** with a reverse repo rate hike. However, if the RBI were to delay its normalization process, the risk of disruptive policy rate hikes would rise.

➢ There is **less room for fiscal policy stimulus to support growth** given high deficit and debt levels – it is seen that there is a possibility **of a modest fuel tax cut and reliance on the national rural employment program** as an automatic stabilizer.

What is the Current Account Deficit?

➢ A current account deficit occurs **when the total value of goods and services a country imports exceeds** the total value of goods and services it exports.
  ❍ The balance of exports and imports of goods is referred to as the trade balance. Trade Balance is a part of 'Current Account Balance'.

➢ According to an earlier report of 2021**, High Oil Imports, High Gold Imports are the** major driving force, widening the CAD.

What is Balance of Payments?

➢ **About:**
  ❍ BoP of a country can be defined as **a systematic statement of all economic transactions of a country with the rest of the world** during a specific period, usually one year.

➢ **Purposes of Calculation of BoP:**
  ❍ Reveals the financial and economic status of a country.
  ❍ Can be used as an indicator to determine whether the country's currency value is **appreciating or depreciating.**
  ❍ Helps the Government to decide on fiscal and trade policies.
  ❍ Provides important information to analyze and understand the economic dealings of a country with other countries.

➢ **Components of BoP:**
  ❍ For preparing BoP accounts, economic transactions between a country and the rest of the world are grouped under - Current account, Capital account and Errors and Omissions. It also shows changes in Foreign Exchange Reserves.
  ❍ **Current Account**: It shows export and import of visibles (also called merchandise or goods - represent trade balance) and invisibles (also called non-merchandise).
    ● Invisibles include services, transfers and income.
  ❍ **Capital Account:** It shows a capital expenditure and income for a country.
    ● It gives a summary of the net flow of both private and public investment into an economy.
    ● **External Commercial Borrowing (ECB), Foreign Direct Investment, Foreign Portfolio Investmen**t, etc form a part of capital account.
  ❍ **Errors and Omissions:** Sometimes the balance of payments does not balance. This imbalance is shown in the BoP as errors and omissions. It reflects the country's inability to record all international transactions accurately.
  ❍ **Changes in Foreign Exchange Reserves:** Movements in the reserves comprises changes in the foreign currency assets held by the **Reserve Bank of India (RBI) and also in Special Drawing Rights (SDR)** balances.
  ❍ Overall the BoP account **can be a surplus or a deficit.** If there is a deficit then it can be bridged by taking money from the Foreign Exchange (Forex) Account.
    ● If the reserves in the forex account are falling short then this scenario is **referred to as BoP crisis.**

Note:

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Reforms in FDI Policy ahead of LIC IPO

Why in News?

Recently, the Union Cabinet cleared an amendment to the FDI Policy **to allow Foreign Direct Investment (FDI) up to 20%** under the **"automatic route"** in Life Insurance Corporation (LIC) ahead of its **proposed Initial Public Offer (IPO).**

➢ The government **expects to mobilize Rs 63,000-66,000 crore from the proposed share sale to meet its disinvestment t**arget of Rs 78,000 crore for FY 2021-22.

➢ **LIC is fully owned by the government.** It was set up in 1956. It has the biggest share in India's insurance business.

➢ In most contexts, **disinvestment typically refers to sale from the government, partly or fully, of a government-owned enterprise.** A company or a government organisation will typically disinvest an asset either **as a strategic move for the company, or for raising resources to meet general/specific needs.**

What are the Key Points?

➢ At present, the FDI policy **does not prescribe any specific provision for foreign investment in LIC** which is a statutory corporation established under **LIC Act, 1956.**

➢ The policy permits **FDI in insurance companies and intermediaries or insurance intermediaries** in the insurance sector.

➢ The **FDI ceiling for public sector banks is 20% on the government approva**l route.
  ○ While the government had last year raised the FDI limit in the insurance sector to 74% from 49%, **it did not cover LIC that is governed by a specific legislation.**

➢ Since LIC does not fall in any of these categories and no limit is prescribed for foreign investment in LIC under the LIC Act, the government has decided to allow foreign investment up to 20% for LIC and other corporate bodies.

➢ In order **to expedite the capital raising process**, such FDI has been kept on the automatic route, as is in the case of the rest of the insurance sector.

What is the Significance of this Move?

➢ The reform in the FDI policy will **facilitate foreign investment in LIC and other corporate bodies,** for which the government may have a requirement for disinvestment purposes.

➢ The change in the FDI policy for LIC will ensure that **foreign investors do not face any hurdles** while subscribing for the public offer.

➢ The reform will also **facilitate ease of doing business and lead to greater FDI inflows,** and at the same time, ensure alignment with the overall intent or objective of FDI policy.

➢ Increased FDI inflows **will supplement domestic capital, technology transfer, skill development for accelerated economic growth** and development across sectors, to support the implementation of **Atmanirbhar Bharat.**

➢ Allowing FDI will **ensure that foreign portfolio investors are able to purchase shares in the secondary market.** It also sends a positive signal to investors.

What is the Status of FDI Inflows in India?

➢ FDI inflows in India stood at USD 45.15 billion in 2014-2015 and have increased to USD 81.97 billion during the financial year 2020-21, despite **Covid 19 pandemic**, which is 10% higher than USD 74.39 billion compared to the previous financial year 2019-20.

Minimum Assured Return Scheme: PFRDA

Why in News?

The **Pension Fund Regulatory and Development Authority (PFRDA)** has proposed a guaranteed return scheme, **Minimum Assured Return Scheme (MARS)**, which will provide savers and people from the salaried class an option for their investments.

➢ This will be the **first scheme** from the pension regulator that **will offer a guaranteed return to investors.**

➢ India's pension assets under management have already crossed the Rs 7-lakh crore mark and are expected to touch RS 7.5-lakh crore by end March this fiscal 2021-22.

Note:

➢ PFRDA is aiming for an **AUM (Assets Under Management)** of **Rs 30-lakh crore by 2030.**

What is PFRDA's Proposal under MARS?

➢ **About:**
- ❍ **To have a separate scheme that can offer a guaranteed minimum rate of return to NPS (National Pension System) subscribers**, especially those who are risk averse.
  - ● **Currently**, the NPS gives returns annually, based on prevailing market conditions.
- ❍ The actual **returns will depend on the market conditions.** Any shortfall will be made good by the sponsor, and the **surplus will be credited to the subscribers' account.**

➢ **Options that will be offered:**
- ❍ **Fixed Guarantee Option:** Under the **fixed guarantee option**, the guaranteed return is fixed along the **accumulation phase.**
- ❍ **Floating Guarantee Option:** Under the **floating guarantee option**, the guaranteed rate of return is not fixed **along the savings phase.**
  - ● The floating guarantee depends on the **development of the 1-year interest rate until retirement.**

➢ **Lock-in- Period:**
- ❍ The **Lock-in may be applicable on each contribution, and will be applied based on the period** since that contribution has been made. It may also consider multiple lock-in period options (or staggered guarantee periods) for flexibility.
- ❍ Withdrawals are **likely to be directly linked to the lock-in period.** The subscriber may have the option **to withdraw or to stay invested after the lock-in period**. However, there won't be any guarantee applied on the investment after lock-in.

➢ **Limit of Contribution:**
- ❍ Minimum and maximum monetary limits on contributions may be prescribed. **The attraction for investors will be the minimum guaranteed return.**

What is the National Pension System?

➢ **About:**
- ❍ The Central Government introduced the NPS with effect from January 2004 (except for armed forces).

- ● In **2018** to streamline the NPS and make it more attractive, the Union Cabinet approved **changes in the scheme** to benefit central government employees covered under NPS.
- ❍ NPS is implemented and regulated by **PFRDA.**
- ❍ **National Pension System Trust** (NPST) established by PFRDA is the registered owner of all assets under NPS.

➢ **Structure:** NPS is structured into two tiers:
- ❍ **Tier-I account:**
  - ● This is the **non-withdrawable permanent retirement account** into which the accumulations are deposited and invested as per the option of the subscriber.
- ❍ **Tier-II account:**
  - ● This is a **voluntary withdrawable account** which is allowed only when there is an active Tier I account in the name of the subscriber.
  - ● The withdrawals are permitted **from this account as per the needs** of the subscriber as and when claimed.

➢ **Beneficiaries:**
- ❍ NPS was made **available to all Citizens** of India from May 2009.
- ❍ Any individual citizen of India (both resident and Non-resident) in the age group of **18-65 years** can join NPS.
- ❍ However, **OCI (Overseas Citizens of India) and PIO (Person of Indian Origin)** card holders and **Hindu Undivided Family** (HUFs) are not eligible for opening of NPS accounts.

What is the Pension Fund Regulatory and Development Authority?

➢ **About:**
- ❍ It is the **statutory Authority established by an enactment of the Parliament**, to regulate, promote and ensure orderly growth of the National Pension System (NPS).
- ❍ It works **under the Department of Financial Services** under the Ministry of Finance.

➢ **Functions:**
- ❍ It performs the **function of appointing various intermediate agencies** like Pension Fund Managers, Central Record Keeping Agency (CRA) etc.
- ❍ It develops, promotes and regulates the pension industry under the NPS and also administers the APY.

Note:

Securities and Exchange Board of India

Why in News?

Recently, Madhabi Puri Buch, former whole-time member of the **Securities and Exchange Board of India (SEBI)**, has been appointed as its new chairperson — **the first woman to head the market regulator. She will hold the position for three years.**

➢ Earlier in January 2022, SEBI launched **Saa₹thi – a mobile app** on investor education.

What is SEBI?

➢ **About:**
  ○ SEBI is **a Statutory Body (a Non-Constitutional body which is set up by a Parliament) established on 12ᵗʰ April, 1992** in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992.**
  ○ The basic functions of SEBI is to **protect the interests of investors in securities** and to promote and regulate the securities market.
  ○ The **headquarters of SEBI is situated in Mumbai.** The regional offices of SEBI are located in Ahmedabad, Kolkata, Chennai and Delhi.

➢ **Background:**
  ○ Before SEBI came into existence, **Controller of Capital Issues was the regulatory authority**; it derived authority from the **Capital Issues (Control) Act, 1947.**
  ○ In April, **1988 the SEBI was constituted as the regulator** of capital markets in India under a resolution of the Government of India.
  ○ Initially SEBI was **a non statutory body without any statutory power**.
  ○ It became autonomous and given statutory powers **by SEBI Act 1992.**

What is SEBIs Structure?

➢ SEBI Board consists of **a Chairman and several other whole time and part time members**.

➢ SEBI also appoints **various committees, whenever required** to look into the pressing issues of that time.

➢ Further, a **Securities Appellate Tribunal (SAT)** has been constituted to protect the interest of entities that feel aggrieved by SEBI's decision.
  ○ SAT consists of a Presiding Officer and two other Members.
  ○ It has the **same powers as vested in a civil court.** Further, if any person feels aggrieved by SAT's decision or order can appeal to the Supreme Court.

What is SEBIs Power And Functions?

➢ SEBI is **a quasi-legislative and quasi-judicial body** which **can draft regulations**, conduct inquiries, pass rulings and impose penalties.

➢ It functions **to fulfill the requirements of three categories:**
  ○ **Issuers:** By providing a marketplace in which the issuers can increase their finance.
  ○ **Investors:** By ensuring safety and supply of precise and accurate information.
  ○ **Intermediaries:** By enabling a competitive professional market for intermediaries.

➢ **By Securities Laws (Amendment) Act, 2014**, SEBI is now able to regulate any money pooling scheme worth Rs. 100 cr. or more and attach assets in cases of non-compliance.

➢ **SEBI Chairman has the authority to order "search and seizure operations"**. SEBI board can also seek information, such as telephone call data records, from any persons or entities in respect to any securities transaction being investigated by it.

➢ SEBI performs the function of **registration and regulation of the working of venture capital funds** and collective investment schemes including mutual funds.

➢ It also **works for promoting and regulating self-regulatory organizations** and prohibiting fraudulent and unfair trade practices relating to securities markets.

POWERS OF SEBI

1. **Quasi- Judicial**
Power to give judgements on unethical & fraudulent activities.

2. **Quasi- Executive**
Power to implement regulations & take legal action against violators.

3. **Quasi- Legislative**
Framing the rules & regulations to protect the interest of investors
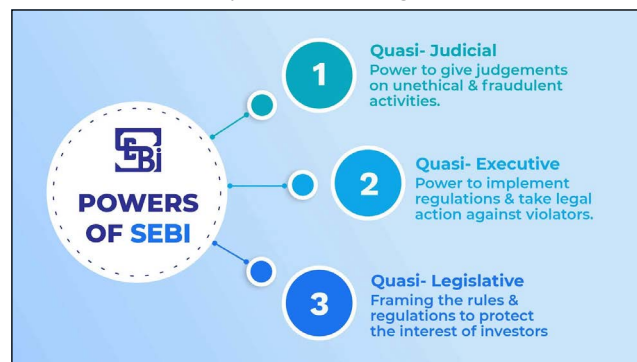
What are the Issues and Related Concerns?

➢ In recent years SEBI's role became more complex, the **capital markets regulator is at a crossroads.**

➢ There is **excessive focus on regulation** of market conduct and **lesser emphasis on prudential regulation.**

➢ SEBI's statutory **enforcement powers are greater than its counterparts in the US and the UK** as it is armed with far greater power to inflict serious economic injury.

➢ It can impose **serious restraints on economic activity**, this is done based on suspicion, leaving it to those affected to shoulder the burden of disproving the suspicion, somewhat like preventive detention.

➢ Its **legislative powers are near absolute as the SEBI Act grants wide discretion** to make subordinate legislation.

➢ The component of prior consultation with the market and a system of review of regulations to see if they have met the articulated purpose is substantially missing. As a result, **the fear of the regulator is widespread.**

➢ **Regulation, either rules or enforcement, is far from perfect**, particularly in areas like insider trading.

➢ The Securities offering documents are **extraordinarily bulky and have substantially been reduced to formal compliance** rather than resulting in substantive disclosures of high quality.

Market Infrastructure Institution

Why in News?

Recently, **Securities and Exchange Board of India (SEBI)** noted that the **National Stock Exchange (NSE)**, the country's largest equities and derivatives exchange is a systemically important **market infrastructure institution (MII).**

What is SEBI?

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

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

What are MIIs?

➢ **Stock exchanges**, **depositories** and **clearing houses** are all Market Infrastructure Institutions and constitute a key part of the **nation's vital economic infrastructure.**

➢ According to a panel set up (in 2010) under the **chairmanship of former Reserve Bank of India Governor Bimal Jalan,** the term **'market infrastructure' denotes such fundamental facilities and systems serving this capital market.**
  ○ The primary purpose of the securities /capital market is to enable allocation/reallocation of capital/financial resources.

➢ MIIs helps in **optimal use of money in the economy** and fostered economic development.

➢ They constitute the nucleus of the **capital allocation system and are indispensable for economic growth** and have a **net positive effect on society like any other infrastructure institution.**

What is the National Stock Exchange?

➢ The **National Stock Exchange** of India Limited (NSE) is **India's largest financial market.**

➢ **Incorporated in 1992**, the NSE has developed into a sophisticated, electronic market, which ranked **fourth in the world by equity trading volume.**

➢ NSE was the **first exchange in India to provide modern, fully automated electronic trading.**
  ○ The NSE is the largest private wide-area network in India.

➢ The NIFTY 50 is the flagship index on the National Stock Exchange of India Ltd. (NSE).

➢ The Index tracks the **behaviour of a portfolio of blue chip companies,** the largest and most liquid Indian securities. It includes 50 of the approximately 1600 companies listed on the NSE.

Why are they considered to be systemically important?

➢ MIIs are systemically important in India is clear from the **phenomenal growth of these institutions in terms of market capitalization** of listed companies, **capital raised and the number of investor accounts** and the v**alue of assets held in the depositories' account.**

Note:

➢ Any failure of such an MII could lead to **even bigger cataclysmic collapses** that may result in an overall economic downfall that could potentially extend beyond the boundaries of the securities market and the country.

➢ Given the potential for a **domino effect t**hat a failure of an MII could have on the **wider market and economy, governance and oversight** are absolutely critical and need to be of the highest standards.

What are the specific institutions in India that qualify as MIIs?

➢ Among stock exchanges, the SEBI lists seven, including the **BSE, the NSE,** the **Multi Commodity Exchange of India** and the **Metropolitan Stock Exchange of India**.

➢ There are two depositories — charged with the safekeeping of securities and enabling their trading and transfer — that are tagged MIIs: the **Central Depository Services Ltd.** and the **National Securities Depository Ltd.**

➢ The regulator also lists seven clearing houses including the **Multi Commodity Exchange Clearing Corporation.**

   ○ Clearing houses, for their part, help validate and finalise securities trades and ensure that both buyers and sellers honour their obligations.

Impact of Russian Invasion on Global Chip Shortage

Why in News?

The ongoing **conflict between Russia and Ukraine** is worsening the **global chip shortage crisis.**

➢ Earlier, it was predicted that the **chip shortage would extend until at least 2023.**

➢ The prediction was **based on the pandemic's effect** on a component that has become a life-line for most gadgets we use every day.

➢ The global semiconductor market is **projected to grow by 8.8% to USD 601 billion**, driven by a double-digit growth of the sensors and logic category and with the recent **trends in electric mobility, automotive safety, and Internet of Things (IoT)**, the demand for semiconductors is only going to grow.

How did the Shortage Crisis Begin?

➢ **Lockdowns** increased the growth in sales of laptops to the highest in a decade.

   ○ Home networking gear, webcams and monitors were snapped up as office work moved out of the office, and laptops were in demand for a while as schools shut.

➢ The stay-at-home rules also **made several people pick up console-based gaming.**

➢ These devices in high demand run on **thumbnail-sized semiconductor piece** (or pieces some time), **performing various functions** on a single device and manufacturers produce them as **200mm or 300mm wafers.** These are further split into tiny chips.

   ○ While the **larger wafers are expensive and mostly used for advanced equipment,** the devices that were in high demand needed smaller diameter wafers.

   ○ But the manufacturing equipment required to make them were in short supply even before the pandemic began. That's because the industry was moving in the direction of **5G** , which required the expensive wafers.

➢ **High consumer demand for low-end products, coupled with large orders from tech firms choked chip makers** whose factories were also closed during lockdowns.

   ○ As the industry gradually tried to pull itself out of the supply crunch, logistical complexities exacerbated the problem.

   ○ And then the cost of moving containers across the world drove up the price of the core component used in most electronic devices and automobiles.

Why is the Russian Invasion Impacting Chip Shortage?

➢ Ukraine supplies **rare gases used to produce semiconductor fab lasers**, and Russia exports **rare metals like palladium to make semiconductors.**

   ○ This **combination is required to build chipsets** that power a range of devices, from automobiles to smartphones.

➢ Russia and South Africa are the **two largest producers of palladium.** In 2021, Russia supplied 2.35 million ounces (66 million grams) of palladium.

Note:

➢ The **silvery-white market would move into a severe deficit** without those supplies, pushing the price up.

○ While **platinum and rhodium could be substituted** for palladium, Russia is also a leading producer of the other platinum group metals.

➢ As **Russia's invasion into Ukraine** escalates, the country is getting hit by Western sanctions, which could disrupt the country's exports, leaving the semiconductor firms fewer options to source raw materials to make chip sets.

What is Palladium and what are its Uses?

➢ Palladium is often used as an **alternative to gold in making various devices** as the metal is **highly malleable and resistant to corrosion.**

➢ The rare metal is **considered to be softer than gold**, but is still much harder and durable than the yellow metal.

➢ This quality of palladium **gives it more protection against an impact and a greater resistance** to denting. So, automobile makers, electronics manufacturers and biomedical device producers prefer the silvery-white metal.

➢ Palladium is used in **nearly all electronic devices**, and the metal is a **key to make chipsets and circuit boards.** It is used to make **Multi-Layer Ceramic Capacitors (MLCCs)**, which are important to make smartphone screens, stereo systems, and power circuit breakers.

How are Businesses and Governments Adapting to these Changes?

➢ Businesses are inversing their offshoring plans. They are considering **'reshoring' as an option** to be shielded from global supply chain disruptions.

○ Reshoring, also known as onshoring, is the **opposite of offshoring** and involves the **returning of the production and manufacturing of goods** to the company's original country.

➢ Intel has announced in February, 2022, USD20 billion for two new chip fabrication facilities in the state of Ohio (US). The company plans to invest USD100 billion over the next decade, and build eight more fab factories in the state.

○ Intel is one of the few companies that **both designs and makes its own chipsets.**

➢ At the other end of the spectrum is government support to provide a conducive environment for businesses to set up facilities to build semiconductor factories.

➢ The US government is looking to pass the CHIPS Act, a law that would provide semiconductor firms with USD52 billion in subsidies to advance chip making in the country.

What is a Semiconductor Chip?

➢ It is an **electric circuit with many components** such as transistors and wiring formed on a semiconductor wafer. An electronic device comprising numerous of these components is called **Integrated Circuit (IC)**, and can be found in electronic devices such as computers, smartphones, appliances, gaming hardware and medical equipment.

➢ These devices find widespread use in almost all industries, especially in the automobile industry.

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

What about India's Semiconductor Demand and Related Initiatives?

➢ India currently **imports all chips and the market** is estimated to touch **USD100 billion by 2025** from USD24 billion now.

➢ The Union Cabinet has recently **allocated an amount of Rs.76,000 crore** for supporting the development of a 'semiconductors and display manufacturing ecosystem'.

○ It is a belated but welcome acknowledgment of the strategic significance of integrated circuits, or chips, to a modern economy.

➢ India has also launched the **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)** under which a budget outlay of Rs 3,285 crore is spread over a period of eight years for manufacturing of electronics components and semiconductors.

Note:

Monetary Policy Committee: RBI

Why in News?

Recently the **Monetary Policy Committee (MPC)** of the **Reserve Bank of India's (RBI)** noted that the central bank's **accommodative policy** stance may fail to comply with the Inflation target (upper limit of 6%).

➢ An **accommodative stance** indicates a willingness on the part of the **central bank to expand money supply and cut interest rates.**

➢ The MPC fixes the **benchmark interest rate** — or the base or reference rate that is used to set other interest rates — in India.

What is Monetary policy?

➢ Monetary policy **refers to the policy of the central bank with regard to the use of monetary instruments** under its control to achieve the goals specified in the Act.

➢ The primary objective of the RBI's monetary policy is to **maintain price stability while keeping in mind the objective of growth.**

  ❍ Price stability is a necessary precondition to sustainable growth.

➢ The amended **RBI Act, 1934** also provides for the **inflation target (4% +-2%)** to be set by the Government of India, in consultation with the Reserve Bank, **once in every five years.**

Various Instruments of Monetary Policy	
Repo Rate	➢ The interest rate at which the Reserve Bank **provides overnight liquidity** to banks **against the collateral of government and other approved securities** under the **liquidity adjustment facility (LAF).**
Reverse Repo Rate	➢ The interest rate at which the **Reserve Bank absorbs liquidity,** on an overnight basis, from banks against the **collateral of eligible government securities under the LAF.**
Liquidity Adjustment Facility (LAF)	➢ The LAF **consists of overnight as well as term repo auctions.** ➢ The aim of term repo is to help develop the **interbank term money market,** which in turn can set market based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy. ➢ The RBI also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.
Marginal Standing Facility (MSF)	➢ A facility under which scheduled commercial banks can borrow additional amount of overnight money from the Reserve Bank by dipping into their **Statutory Liquidity Ratio (SLR)** portfolio up to a limit at a penal rate of interest. ➢ This provides a safety valve against unanticipated liquidity shocks to the banking system.
Corridor	➢ The MSF rate and reverse repo rate determine the **corridor for the daily movement in the weighted average call money rate.**
Bank Rate	➢ It is the rate at which the RBI is ready to buy or rediscount bills of exchange or other commercial papers. The Bank Rate is published under **Section 49 of the RBI Act, 1934.** ➢ This rate has been aligned to the MSF rate and, therefore, changes automatically as and when the MSF rate changes alongside policy repo rate changes.
Cash Reserve Ratio (CRR)	➢ The average daily balance that a bank is required to maintain with the Reserve Bank as a share of such per cent of its N**et demand and time liabilities (NDTL)** that the Reserve Bank may notify from time to time in the **Gazette of India.**

Note:

Statutory Liquidity Ratio (SLR)	➤ The share of NDTL that a bank is required to maintain in safe and liquid assets, such as, **unencumbered government securities, cash and gold.** ➤ Changes in SLR often influence the availability of resources in the banking system for lending to the private sector.
Open Market Operations (OMOs)	➤ These include both, outright purchase and sale of government securities, for injection and absorption of durable liquidity, respectively.
Market Stabilisation Scheme (MSS)	➤ This instrument for monetary management **was introduced in 2004.** ➤ Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills. ➤ The cash so mobilised is **held in a separate government account with the RBI.**

First Virtual Smart Grid Knowledge Centre

Why in News?

Recently, the **Union Minister for Power** has launched the **Virtual Smart Grid Knowledge Center (Virtual SGKC) and Innovation Park.**

What is Virtual Smart Grid Knowledge Center (Virtual SGKC)?

➤ Located within the **powergrid centre in Manesar (Haryana), Virtual Smart Grid Knowledge Center (Virtual SGKC)** is the **first of its kind initiative** by the Union government.

➤ The initiative, as part of **Azadi ka Amrit Mahotsav Programme**, will be one of the leading **Centers of Excellence** globally to foster innovation, entrepreneurship and research in smart grid technologies.

➤ It has been **established by POWERGRID** with support from the **Union ministry of power and technical assistance** from **US Agency for International Development's (USAID)** for demonstration and advancement of frontier smart grid technologies.

What is the Significance of this Initiative?

➤ SGKC aims to be **one of the leading Centers of Excellence** globally to foster innovation, entrepreneurship and research in **smart grid technologies** and create capacities in the power distribution sector.

➤ It will **enable a digital footprint of the physical setup of SGKC**, the need for which was felt during **Covid-19 pandemic.**

What is a Smart Grid?

➤ **About:**
  ○ Smart Grid is an **Electrical Grid with Automation, Communication and IT systems that can monitor power flows** from points of generation to points of consumption (even down to appliances level) and control the power flow or curtail the load to match generation in real time or near real time.
  ○ Smart Grids can be **achieved by implementing efficient transmission & distribution systems**, system operations, consumer integration and renewable integration.
  ○ Smart grid solutions **helps to monitor, measure and control power flows in real time** that can contribute to identification of losses and thereby appropriate technical and managerial actions can be taken to arrest the losses.

➤ **Vision for India:**
  ○ Transform the Indian power sector into a secure, adaptive, sustainable and digitally enabled ecosystem that provides reliable and quality energy for all with active participation of stakeholders.

➤ **Benefits of Smart Grid Deployments:**
  ○ Reduction of T&D losses,
  ○ Peak load management, improved QoS and reliability.
  ○ Reduction in power purchase cost.
  ○ Better asset management.
  ○ Increased grid visibility and self-healing grids.

Note:

○ Renewable integration and accessibility to electricity.

○ Increased options such as ToU tariff, DR programs, net metering.

○ Satisfied customers and financially sound utilities etc.
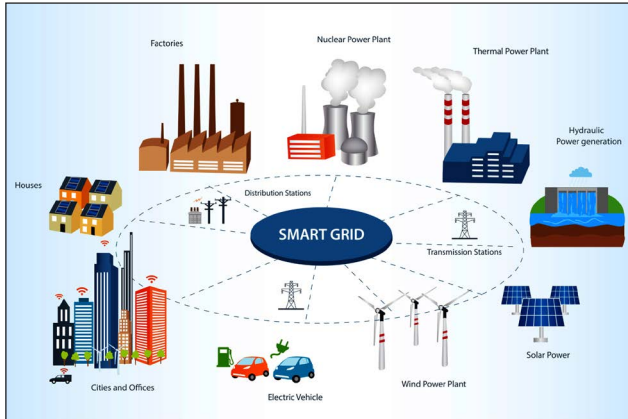
What are the Related Initiatives?

➢ **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA):**

○ Empowering rural and urban households through access to reliable and affordable electricity.

➢ **Green Energy Corridor (GEC):**

○ Synchronising grid-connected renewable energy with India's national transmission network.

➢ **National Smart Grid Mission (NSGM) and Smart Meter National Programme (SMNP):**

○ Modernising India's power sector into a secure, adaptive, sustainable, and digitally enabled ecosystem.

MSME Innovative Scheme

Why in News?

Recently, the **Ministry of MSME (Medium, Small and Micro Enterprises)** has launched the MSME Innovative Scheme (Incubation, Design and IPR) along with the MSME IDEA HACKATHON 2022.

What are the Key Points?

➢ **About:**

○ It is the **combination of existing sub-schemes around incubation, design, and Intellectual Property Rights (IPR)** for MSMEs.

● The **government also announced equity support of up to Rs 1 crore for commercialisation of ideas, designs and patents** across all three sub-schemes and also to help MSMEs further scale up to raise subsequent funding.

● For this, a separate corpus will be **created and managed by SIDBI (Small Industries Development Bank of India) as the fund manager.**

● SIDBI set up on 2nd April 1990 under an Act of Indian Parliament, acts as the Principal Financial Institution for Promotion, Financing and Development of the MSME sector as well as for co-ordination of functions of institutions engaged in similar activities.

○ The new scheme will ensure support through guidance, financial support, technical support, and more to MSMEs to scale up.

○ The new scheme would act as a hub for innovation activities facilitating and guiding the development of ideas into viable business propositions that can benefit society directly and can be marketed successfully.

➢ **Components:**

○ **Incubation:** The primary objective of the scheme is **to promote and support untapped creativity and to promote adoption of latest technologies in MSMEs** that seek the validation of their ideas at the proof-of-concept level.

● As part of the incubation scheme, the government announced the launch of an **MSME Idea Hackathon** to invite ideas from MSMEs, innovators and students through host institutes.

● **Financial assistance up to Rs. 15 lakh per idea and up to Rs. 1.00 crore for relevant plants and machines** will be provided.

○ **Design:** The objective of this component is to bring the Indian manufacturing sector and Design expertise/Design fraternity on to a common platform.

● It aims to provide expert advice and cost-effective solutions on real time design problems for new product development, its continuous improvement and value addition in existing/new products.

Note:

○ **IPR (Intellectual Property Rights)**: The objective of the scheme is to improve the **IP culture in India with a view to enhance the awareness of Intellectual Property Rights (IPRs)** amongst the MSMEs and to encourage creative intellectual endeavor in the Indian economy.

● It also aims to take suitable measures for the protection of ideas, technological innovation and knowledge-driven business strategies developed by the MSMEs for their commercialization and effective utilization of IPR tools through IP Facilitation Centre.

● Financial assistance upto Rs. 5 lakh for Foreign Patent, Rs. 1.00 lakh Domestic Patent, Rs. 2.00 lakh for GI (Geographical Indication) Registration, Rs. 15,000/- for Design Registration, Rs.10,000/- for Trademark in the form of reimbursement.

Revised Classification applicable w.e.f 1st July 2020			
Composite Criteria: Investment in Plant & Machinery/equipment and Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing Enterprises and Enterprises rendering Services	Investment in Plant and Machinery or Equipment: Not more than Rs.1 crore and Annual Turnover ; not more than Rs. 5 crore	Investment in Plant and Machinery or Equipment: Not more than Rs.10 crore and Annual Turnover ; not more than Rs. 50 crore	Investment in Plant and Machinery or Equipment: Not more than Rs.50 crore and Annual Turnover ; not more than Rs. 250 crore

What are the other Schemes Related to MSME?

➢ The **Ministry of Micro, Small & Medium Enterprises (M/o MSME)** envisions a vibrant MSME sector by promoting growth and development of the MSME Sector, including Khadi, Village and Coir Industries.

➢ The **Micro Small and Medium Enterprises Development (MSMED) Act** was notified in 2006 to address policy issues affecting MSMEs as well as the coverage and investment ceiling of the sector.

➢ **Prime Minister's Employment Generation programme (PMEGP):** It is a credit linked subsidy scheme, for setting up of new micro-enterprises and to generate employment opportunities in rural as well as urban areas of the country.

➢ **Scheme of Fund for Regeneration of Traditional Industries (SFURTI):** It aims to properly organize the artisans and the traditional industries into clusters and thus provide financial assistance to make them competitive in today's market scenario.

➢ **A Scheme for Promoting Innovation, Rural Industry & Entrepreneurship (ASPIRE):** The scheme promotes innovation & rural entrepreneurship through rural Livelihood Business Incubator (LBI), Technology Business Incubator (TBI) and Fund of Funds for start-up creation in the agro-based industry.

➢ **Interest Subvention Scheme for Incremental Credit to MSMEs:** It was introduced by the **Reserve Bank of India** wherein relief is provided upto 2% of interest to all the legal MSMEs on their outstanding fresh/ incremental term loan/working capital during the period of its validity.

➢ **Credit Guarantee Scheme for Micro and Small Enterprises:** Launched to facilitate easy flow of credit, guarantee cover is provided for collateral free credit extended to MSMEs.

➢ **Micro and Small Enterprises Cluster Development Programme (MSE-CDP):** It aims to enhance the productivity and competitiveness as well as capacity building of MSEs.

➢ **CHAMPIONS portal**: It aims to assist Indian MSMEs march into the big league as National and Global CHAMPIONS by solving their grievances and encouraging, supporting, helping and hand holding them.

➢ **MSME Samadhan**: It enables them to directly register their cases about delayed payments by Central Ministries/Departments/CPSEs/State Governments.

➢ **Udyam Registrations Portal:** This new portal assists the government in aggregating the data on the number of MSMEs in the country.

➢ **MSME SAMBANDH:** It is a Public Procurement Portal. It was launched to monitor the implementation of the Public Procurement from MSEs by Central Public Sector Enterprises.

Dollar-Rupee Swap

Why in News?

Recently, the **Reserve Bank of India (RBI)** conducted a **USD 5 billion dollar-rupee swap auction** as part of its **liquidity management initiative**. This move will lead to infusion of dollars and sucking out of the rupee from the financial system.

➢ This will reduce the pressure on **inflation** and **strengthen the rupee.**

What is a Dollar–Rupee Swap auction?

➢ It's a **forex tool** whereby the **central bank uses its currency to buy another currency** or vice versa.

➢ **Dollar–Rupee Buy/Sell Swap:** The central bank buys dollars (US dollars or USD) from banks in exchange for Indian Rupees (INR) and immediately gets into an opposite deal with banks promising to sell dollars at a later date.

➢ **Dollar–Rupee Sell/Buy Swap:** When the central bank sells dollars, it **sucks out an equivalent amount in rupees**, thus reducing the rupee liquidity in the system.

➢ These swap operations carry **no exchange rate or other market risks** as transaction terms are set in advance.

What is the RBI Planning to do?

➢ The RBI **sold USD 5.135 billion to banks and simultaneously agreed to buy back the dollars** at the end of the swap settlement period.

➢ The intent here is that the central bank acquires dollars from the seller, **charging the lowest premium possible for the two-year tenor.**

➢ Accordingly, **banks that bid at the lower range of the auction are successful at the auction.**

  ○ Assuming a dollar rate of Rs 75, the system liquidity will shrink by Rs 37,500 crore.

Why is RBI resorting to it now?

➢ Surplus liquidity in the system is pegged at **Rs 7.5 lakh crore**, which needs to be curbed to keep a tab on **inflation.**

➢ Usually, the central bank will resort to traditional tools such as **increasing the repo rate or** increasing the **Cash Reserve Ratio (CRR)**, but this can have a **negative implication on the economy.**

  ○ This negative implication can be seen in **incomplete transmission of monetary policy.**

➢ Therefore, the RBI used a different toolkit - **Variable Rate Reverse Repo Auction (VRRR)** last year.

➢ However, the recent VRRR auctions were **undersubscribed by banks,** as the cash market offered instant and better yields, forcing the RBI to consider a longer-term liquidity adjustment tool such as forex auctions.

What's the Impact of the swap?

➢ **Reducing Liquidity:** The major impact will be that liquidity which currently averages around Rs 7.6 lakh crore will shrink.

➢ **Checking Depreciation of Indian Rupee:** Dollar inflow into the market will strengthen the rupee which has already hit the 77 level against the US dollar.

➢ **Containing Inflation: T**he RBI normally brings down liquidity in the system when inflation threatens to rise sharply. Inflation is set to rise due to following factors:

  ○ **Rise in Oil Prices:** With crude oil prices rising sharply in the wake of the **Russia-Ukraine war,** inflation is set to rise in the coming days.

  ○ **Outflow of Institutional Investments: Foreign portfolio investors** have been pulling out funds from India. They have withdrawn Rs 34,000 crore from Indian stocks in March 2022 so far, putting severe pressure on the rupee.

What is the Liquidity Management Initiative?

➢ The "liquidity management" of a central bank is defined as the **framework, set of instruments and especially the rules the central bank follows in steering the amount of bank reserves in order to control their price (i.e. short term interest rates) consistently with its ultimate goals (e.g. price stability).**

  ○ Bank reserves are the cash minimums that financial institutions must have on hand in order to meet central bank requirements

➢ Liquidity Management Initiative is a tool used in monetary policy by the RBI, that allows banks to borrow money through repurchase agreements (repos) or for banks to make loans to the RBI through reverse repo agreements.

Note:

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➢ **Various Instruments under this framework are:**
- ○ **Repo/reverse repo auction**
- ○ **Marginal Standing Facility (MSF)**
- ○ Forex Swaps

Increased NPAs in MSMEs

Why in News

Despite a host of loan restructuring schemes and packages announced by the **Reserve Bank of India (RBI)** and the government, the **Covid pandemic** has hit the **Micro, Small and Medium Enterprises (MSMEs)** very hard.

➢ Gross **Non-Performing Assets (NPAs)** of MSMEs, or loans defaulted by these enterprises, rose by Rs 20,000 crore to Rs 1,65,732 crore as of September 2021 from Rs 1,45,673 crore in September 2020.

➢ **Bad loans** of MSMEs now account for 9.6 % of gross advances of Rs 17.33 lakh crore as against 8.2 % in September 2020.

➢ Earlier, the Ministry of MSME launched the **MSME Innovative Scheme** (Incubation, Design and IPR) along with the MSME IDEA HACKATHON 2022.

MSME BAD LOANS

	AMOUNT*	NPA RATIO
Sept '21	1,65,732	9.6
Sept '20	1,45,673	8.2
Sept '19	1,47,260	8.8

*in Rs crore

What is a Non-Performing Asset?

➢ NPA refers to a classification for **loans or advances that are in default or are in arrears** on scheduled payments of principal or interest.

➢ In most cases, **debt is classified as non-performing, when the loan payments have not been made for a minimum period of 90 days.**

➢ **Gross non-performing assets** are the sum of all the loans that have been defaulted by the individuals who have acquired loans from the financial institution.

➢ **Net non-performing assets** are the amount that is realised after provision amount has been deducted from the gross non-performing assets.

What was the Effect of Covid on MSMEs?

➢ The rise in bad loans happened **even after the RBI announced four** loan restructuring schemes for MSMEs in January 2019, February 2020, August 2020 and May 2021.
- ○ Loans of as many as 24.51 lakh MSME accounts worth Rs 1,16,332 crore were restructured under these schemes. Under the May 2021 circular issued by the RBI, loans for Rs 51,467 crore were restructured.

➢ The Sector being among the most pandemic afflicted sectors, **thousands of MSMEs either shut down or became sick after the government announced a nationwide strict lockdown** in March 2020 in the wake of the Covid pandemic.

What were the Initiatives Taken to Revive the MSMEs?

➢ To revive activity, the RBI and the government introduced several measures including the **Emergency Credit Line Guarantee Scheme (ECLGS)** which provided Rs 3 lakh crore of unsecured loans to MSMEs and businesses.

➢ The RBI also **extended the scheme of one-time restructuring of loans** to MSMEs without an asset classification downgrade and permitted bank lending to **NBFCs** (non banking Financial Companies-other than MFIs) for on-lending to agriculture, MSMEs and housing to be classified as **Priority Sector Lending (PSL)**.

➢ The **restructuring schemes and packages didn't benefit thousands of units which were already in default.**

➢ This is because to be eligible under the ECLGS scheme, borrower accounts were to be less than or equal to 60 days due as on **29th February, 2020**.
- ○ According to the **RBI's Financial Stability Report**, credit to the MSME segment slowed down (year-on-year) by the end of September 2021 vis-a-vis March 2021.
- ○ The decline was particularly noticeable in the sub Rs 25 crore ticket size across major bank groups.

What are the Laws and Provisions Related to NPA/ Bad loans?

➢ **(SARFAESI) Act, 2002.**

➢ **Insolvency and Bankruptcy Code (IBC)**

➢ **Bad Bank**

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International Relations

Highlights

- BBIN Motor Vehicles Agreement
- India Abstains at UNHRC
- Expansionism of NATO
- Iran Nuclear Deal
- War Crimes
- India & ITU Sign Host Country Agreement
- UNGA Resolution on Russia-Ukraine
- Montreux Convention
- India-Russia Military Relations

- India and Canada to re-launch the Comprehensive Economic Partnership Agreement
- Women In Peacekeeping
- FATF retains Pakistan in Grey List
- Permanent Indus Commission Meeting
- International Court of Justice & Genocide Convention
- Humanitarian Corridors
- 1954 Hague Convention
- Permanent Normal Trade Relations

BBIN Motor Vehicles Agreement

Why in News?

Recently, India, Bangladesh and Nepal finalised an enabling memorandum of understanding (MoU) for implementing the long-gestating **Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement (MVA).**

What is the BBIN Connectivity Project?

➢ **Background:** The project was conceived after the **South Asian Association for Regional Cooperation (SAARC)** failed to agree on a regional motor vehicles agreement at a **summit in Nepal in 2014,** mainly because of opposition from Pakistan.

➢ **Origin:** The **BBIN Motor Vehicle Agreement for the Regulation of Passenger, Personal and Cargo Vehicular Traffic** between the 4 countries was signed during a transport ministers' meeting in **Thimpu on 15th June 2015.**

➢ **Objective:** Operationalising the MVA by concluding the **Passenger and the Cargo Protocol** will help realise the full potential of trade and **people to people connectivity** between the BBIN countries by **fostering greater sub-regional cooperation.**

➢ **Bhutan's Reluctance:** The BBIN project suffered a setback in **2017 when Bhutan temporarily** opted out of it after being unable to get parliamentary approval for the MVA.

  ❍ The **3 other countries** decided at the time to press ahead with the agreement.

➢ **Foreign Funding:** The **Asian Development Bank** has supported the project as part of its **South Asian Subregional Economic Cooperation programme,** and has been requested to prioritise about 30 road projects worth billions of dollars.

  ❍ The **World Bank**, which has estimated that the implementation of the MVA will potentially see a**n increase in traffic-regional trade within South Asia by nearly 60%,** has also announced its interest in supporting infrastructure.

➢ **Persisting Issues:** There are still some agreements holding up the **final protocols, including issues like insurance and bank guarantees, and the size and frequency of freight carriers into each country,** which they hope to finalise this year before operationalizing bus and truck movements between them.

Note:

What are the concerns of Bhutan?

➢ The objections of Bhutan pertains to **sustainability and environmental concerns.**

➢ In 2020, Prime Minister Lotay Tshering held that given **Bhutan's "current infrastructure" and top priority to remaining a "carbon-negative" country**, it would not be possible to consider joining the MVA.

  ❍ Thus, the Bhutanese parliament decided not to endorse the plan.

What are the Similar Connectivity Initiatives which India is a part of ?

➢ **Bangladesh-China-India-Myanmar (BCIM) Corridor**

➢ **India-Myanmar-Thailand Trilateral Highway**

➢ **Kaladan Multi-Modal Transit Transport (KMMTT)**

India Abstains at UNHRC

Why in News?

Recently, India abstained on a vote at the **UN Human Rights Council** in Geneva. The Council moved the resolution to set up an **international commission of enquiry** into **Russia's actions in Ukraine.**

➢ The move is significant in the terms that the vote followed even after **India's meeting with Quad countries.**

➢ India has also abstained from similar resolutions in the **United Nations General Assembly** and **United Nations Security Council.**

➢ India also abstained from the **International Atomic Energy Agency (IAEA)** resolution that was related to safety at four nuclear power stations and a number of nuclear waste sites including Chernobyl, as the Russians seized control of them.

What is the UN Human Rights Council?

➢ **About:**

  ❍ The Human Rights Council is **an inter-governmental body within the United Nations system** responsible for strengthening the promotion and protection of **human rights** around the world.

➢ **Formation:**

  ❍ The Council was **created by the United Nations General Assembly in 2006.** It replaced the former United Nations Commission on Human Rights.

  ❍ The **Office of the High Commissioner for Human Rights (OHCHR)** serves as the **Secretariat** of the Human Rights Council.

  ❍ OHCHR is headquartered in **Geneva, Switzerland.**

➢ **Members:**

  ❍ It is **made up of 47 United Nations Member States** which are **elected by the UN General Assembly (UNGA).**

    • The UNGA takes into account the candidate States' contribution to the promotion and protection of human rights, as well as their voluntary pledges and commitments in this regard.

  ❍ The Council's Membership is based on equitable geographical distribution. Seats are distributed as follows:

    • African States: 13 seats

    • Asia-Pacific States: 13 seats

    • Latin American and Caribbean States: 8 seats

    • Western European and other States: 7 seats

    • Eastern European States: 6 seats

  ❍ Members of the Council **serve for a period of three years and are not eligible for immediate re-election after serving two consecutive terms.**

➢ **Procedures and Mechanisms:**

  ❍ **Universal Periodic Review: UPR** serves to assess the human rights situations in all United Nations Member States.

  ❍ **Advisory Committee:** It serves as the Council's "think tank" providing it with expertise and advice on thematic human rights issues.

  ❍ **Complaint Procedure:** It allows individuals and organizations to bring human rights violations to the attention of the Council.

  ❍ **UN Special Procedures:** These are made up of **special rapporteurs**, special representatives, independent experts and working groups that monitor, examine, advise and publicly report on thematic issues or human rights situations in specific countries.

➢ **Issues:**

  ❍ **Related to the Membership:** A key concern for some critics has been the composition of Council membership, which sometimes includes countries widely perceived as human rights abusers.

Note:

- China, Cuba, Eritrea, Russia and Venezuela, all of which have been accused of human rights abuses.
  - ○ **Disproportionate Focus:** US pulled out of the Agency in 2018 due to its disproportionate focus on Israel, which has received by far the largest number of critical council resolutions against any country.
    - The US has joined the organization again.
- ➤ **India and UN Human Rights Council:**
  - ○ Recently, a group of Special Rapporteurs to the United Nations (UN) has written to the Indian government **expressing concerns** over the **draft Environment Impact Assessment (EIA) notification 2020.**
  - ○ In 2020, India's National Human Rights Commission submitted its mid-term report to the Council as a part of the third round of the Universal Periodic Review (UPR) process.
  - ○ India was elected to the Council for a period of three years beginning 1st January 2019.

Expansionism of NATO

Why in News?

When Russia launched a **military invasion of Ukraine**, the purported reason behind this act of territorial aggression was the eastward expansion of the **North Atlantic Treaty Organisation (NATO).**

- ➤ The expansionism of NATO **threatened at some undefined point in the future to allow Ukraine to join the grouping** as a treaty ally and thus bring this transatlantic security coalition within striking distance of Russia's western borders.
- ➤ Earlier, an emergency special session was convened by the **United Nations General Assembly (UNGA)** for discussing a resolution that called for Russia to unconditionally withdraw its troops.

What is NATO?

- ➤ It is a **military alliance established by the North Atlantic Treaty** (also called the Washington Treaty) of April, 1949, by the United States, Canada, and several Western European nations to provide collective security against the **Soviet Union.**

- ➤ There are currently **30 member states, with North Macedonia becoming the latest member to join the alliance in 2020.**

What are the Origins of NATO?

- ➤ The self-declared mission of NATO when it **emerged in 1949**, had **three points:**
  - ○ Deterring Soviet expansionism.
  - ○ Forbidding the revival of nationalist militarism in Europe through a strong North American presence on the continent.
  - ○ Encouraging European political integration.
- ➤ Clearly the legacy of the **Nazi (Hitler)** affilction and **World War II** weighed heavily on the minds of the founding members of NATO.
- ➤ Although NATO claims that it is only "partially true" that its very creative was to counter the threat from the erstwhile Soviet Union, there was a **strong emphasis on military cooperation and collective defence in its clauses.**
  - ○ **For example**, Article 5 of the treaty proclaims that **an armed attack against one or more of them** (NATO members) shall be **considered an attack against them all"** and that following such an attack, each ally would take "such action as it deems necessary, including the **use of armed force in response**.
- ➤ The broader context at the time was that in 1955, a time when the **Cold War** was gaining momentum, the **Soviet Union signed up socialist republics of Central and Eastern Europe to the Warsaw Pact (1955)**, including Albania (which withdrew in 1968), Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania.
  - ○ The Pact, essentially a **political-military alliance**, was viewed as a direct **strategic counterweight to NATO.**
  - ○ Its focus at the time was the fact that while **East Germany was still part of the Soviet occupied-territory of Germany,** the Federal Republic of Germany had joined NATO by May 1955, and **Russia began to worry about the consequences of a strengthened and rearmed West Germany** at its border.

➢ As a unified, multilateral, political and military alliance, **the Warsaw Pact was aimed at tying Eastern European capitals more closely to Russia,** which it effectively did for several decades through the worst hostilities of the Cold War.

➢ Indeed, the **Pact even gave the Soviet Union the option to contain civil uprisings** and dissent across the European satellite states, including in Hungary in 1956, Czechoslovakia in 1968, and Poland in 1980-1981.

➢ All that began to unravel by the late 1980s, when the sheer downward pressure of inevitable **economic slowdown in most Eastern European Pact (Warsaw Pact) allies reduced the potential for military cooperation** to make any real difference strategically across the region.

➢ Thus, it hardly came as a surprise in September **1990 that East Germany quit the Pact to be reunified with West Germany,**and soon Czechoslovakia, Hungary, and Poland withdrew from all Warsaw Pact military exercises**.**

➢ The Pact was officially disbanded in early 1991 after the dissolution of the Soviet Union itself.

What Were the Rounds of Expansions Carried out by NATO?

➢ Even as the Soviet Union was dissolved into Russia and former Soviet republics, NATO, emboldened by circumstances and optimism that the **global balance of power was tipping in its favour, embarked on a path of expansion.**

  ○ During the term in office of the US, NATO began, in successive rounds of negotiation and expansion, to pull former Warsaw Pacts tates into its membership.
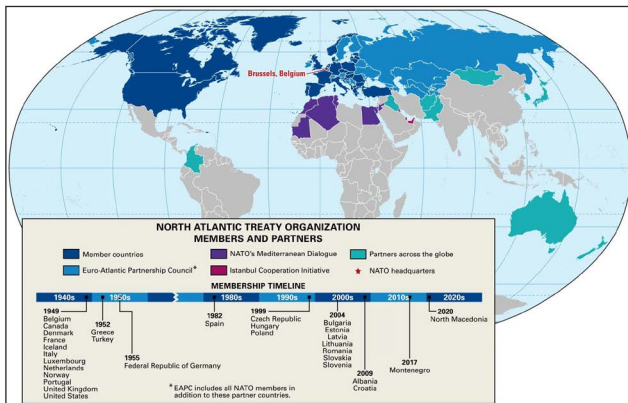
➢ After reunification, while **Germany retained membership of NATO,** the **Czech Republic, Hungary, and Poland joined the alliance in 1999**. But it did not end there — in **2004, Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, Slovenia joined** the treaty organisation.

➢ In **2009 Albania and Croatia** signed on, in **2017 Montenegro** entered the bloc and in 2020 it was North Macedonia's turn.

Why is Russia Sensitive to NATO expansion?

➢ In 2008, in the week leading up to **NATO's Bucharest Conference,** NATO Allies **welcomed Ukraine's and Georgia's Euro-Atlantic aspirations for membership** and agreed that these countries will become members of NATO.

➢ They went on to announce a period of intensive engagement with both countries at a high political level to address the questions still outstanding regarding their **Membership Action Plan applications.**

➢ This set off alarm bells in Russia, because **even the very concept of Ukraine, a nation considered to hold strong historic ties first to the Soviet Union, was against Russia's belief.**

➢ This development prompted **Russia to warn the US** that **no Russian leader could stand idly by in the face of steps toward NATO membership for Ukraine**.

➢ That would be a **hostile act toward Russia**.

  ○ This was only **among the more recent of a long list of actions by NATO leaders that Russia considers a political betrayal.**

Did NATO Violate a Promise to Avoid Expansion?

➢ In 1990 the US informed Russia that **there would be no extension of NATO's jurisdiction for forces of NATO one inch to the east.**

  ○ While **Russia seized upon this comment to fuel its ostensive outrage at NATO expansion** into the Baltic states region.

  ○ It is a fact that in early 1990, the locus of the diplomacy for the **Two Plus Four** – including East and West Germany plus the United States, France, the Soviet Union, and the United Kingdom – **agreement was whether a unified Germany would be part of NATO.**

Note:

- The US wanted to **reassure Russia that NATO command structures and troops would not be transferred to the territory of the former German Democratic Republic.**
- It was a difficult time in Russia, domestically, because in **the aftermath of the Soviet Union's dissolution, there was a failure to institutionalise democratic practices, a stable market economy, and a robust law and order system**.
- Facing all manner of chaos at home, erstwhile Russia began to interpret the **Two Plus Four Treaty (**Treaty on the final settlement with respect to Germany, 1990) **as a ban on NATO expansion east of Germany.**
- Russia informed the US that it ruled out "the option of expanding NATO territory eastward."
- Through the 2000s, Russia carried on in this vein, speaking with increasing alarm and anger at **NATO's steady expansion into Eastern Europe**, and saying in Munich, Germany in 2007 that it i**s obvious that NATO expansion does not have any relation with the modernisation of the alliance** itself or with ensuring security in Europe.
  - On the contrary, it represents a serious provocation that reduces the level of mutual trust.
- In 2008, following NATO announcement of its intent to admit Georgia and Ukraine into its alliance, **Russia invaded Georgia and took control of several of its territorial regions**; and in 2014, with Ukraine drifting closer towards an economic alliance with the **European Union**, **Russia marched into Ukraine and seized Crimea.**

Iran Nuclear Deal

Why in News?

Recently, the di**plomats from Iran and world powers reconvened in Vienna (Austria) to seek a deal reviving Iran's (Tehran's) 2015 Nuclear Accord.**

- The **2015 Iran nuclear deal, signed under President Barack Obama**, and d**ismantled in 2018 by President Donald Trump.**
- The US said it will rejoin the agreement if Iran complies with the terms of the original deal, and if it addresses other issues related to alleged ballistic missile stockpiles and the proxy conflicts that it backs across the region.

What was the 2015 Iran nuclear deal?

- The deal, formally known as **Joint Comprehensive Plan of Action (JCPOA)**.
- The JCPOA was the result of **prolonged negotiations from 2013 and 2015 between Iran and P5+1** (China, France, Russia, the United Kingdom, the United States + Germany).
- Under the deal, **Iran agreed to significantly cut its stores of centrifuges, enriched uranium and heavy-water**, all key components for nuclear weapons.
- Iran also agreed to implement a protocol that would allow **inspectors from the International Atomic Energy Agency (IAEA) to access its nuclear sites** to ensure Iran would not be able to develop nuclear weapons in secret.
- While the **West agreed to lift sanctions related to Iran's nuclear proliferation,** other sanctions addressing alleged abuses of human rights and Iran's ballistic missile programme remained in place.
- The **US committed to lifting sanctions on oil exports, but continued to restrict financial transactions,** which have deterred international trade with Iran.
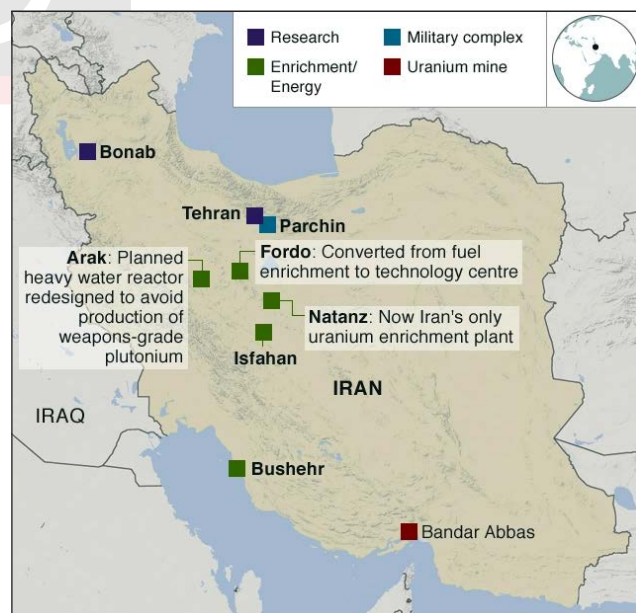
- Nonetheless, Iran's economy, after suffering years of recessions, currency depreciation, and inflation, **stabilized significantly after the deal took effect**, and its exports skyrocketed.
- **Israel, America's closest ally in the Middle East, strongly rejected the deal,** and other countries like Iran's great regional rival **Saudi Arabia, complained**

Note:

that they were not involved in the negotiations even though Iran's nuclear programme posed security risks for every country in the region.

➢ After Trump abandoned the deal and reinstated banking and oil sanctions, **Iran ramped up its nuclear programme in earnest**, returning to approximately 97% of its pre-2015 nuclear capabilities.

What happened after the US pulled out of the deal?

➢ In April 2020 the US announced **its intention to snap back sanctions.** However, the **other partners objected to the move,** stating that since the US was no longer part of the deal, it could not unilaterally reimpose sanctions.

➢ Initially following the withdrawal, several countries continued to import Iranian oil under waivers granted by the Trump administration. **A year later, the US ended the waivers to much international criticism** and, by doing so, significantly **curbed Iran's oil exports.**

➢ The other powers, in an attempt to keep the deal alive, **launched a barter system known as INSTEX** to facilitate transactions with Iran outside the US banking system. **However, INSTEX only covered food and medicine**, which were already exempt from US sanctions.

➢ In January 2020, after the **US assassinated the top Iranian general Qasem Soleimani,** Iran announced that it would no longer limit its uranium enrichment.

What are the Challenges to the Restoration of JCPOA?

➢ The regional cold war **between Saudi Arabia and Iran is a major hurdle** to the restoration.

➢ The US and Saudi Arabia **have strengthened their relationship per US's Middle East policy** and to counter Iran as well.

➢ The traditional **Shia vs Sunni conflict between these countries has made it difficult** to negotiate peace in the region.

➢ Iran is currently **in violation of several of its important commitments**, such as the limits on stockpiles of enriched uranium, and the farther it goes, the more challenging the deal becomes.

➢ Iran is blaming **US sanctions for its economic losses** due to the Trump administration's pullout from the deal and imposing sanctions again.

What is the Significance of JCPOA for India?

➢ **Boost to Regional Connectivity**:
  ○ Removing sanctions may revive **India's interest in the Chabahar por**t, Bandar Abbas port, and other plans for regional connectivity.
  ○ This would **further help India to neutralize the Chinese presence in Gwadar port**, Pakistan.
  ○ Apart from Chabahar, **India's interest in the International North-South Transit Corridor (INSTC)**, which runs through Iran, which will improve connectivity with five Central Asian republics, may also get a boost.

➢ **Energy Security:**
  ○ Due to the pressure linked to the U**S' Countering America's Adversaries Through Sanctions Act (CAATSA)**, **India has to bring down oil imports to zero.**
  ○ Restoration of ties between the US and Iran will **help India to procure cheap Iranian oil and aid in energy security.**

War Crimes

Why in News?

Recently, the **International Criminal Court(ICC)** has announced that it will open an investigation into possible **war crimes** committed by **Russia in Ukraine**. There are **specific international standards for war crimes.**

What is the International Criminal Court?

➢ It is a **permanent judicial body created by the 1998 Rome Statute** of the ICC (its founding and governing document), and began functioning on **1st July 2002** when the Statute came into force.

➢ **Headquarter:** The Hague, Netherlands

➢ **Members:**
  ○ 123 nations are States Parties to the Rome Statute and recognise the ICC's authority.
  ○ The **USA, China, Russia, and India are not the members.**

➢ The forum was established as a court of **last resort to prosecute offences that would otherwise go unpunished**, and has jurisdiction over four main crimes: genocide, crimes against humanity, war crimes, and the crime of aggression.

Note:

What are War Crimes?

➢ War crimes are defined as serious violations of humanitarian laws during a conflict.

➢ The definition, established by the **Rome Statute of the ICC** , is derived from the **1949 Geneva Conventions.**

➢ It is based on the idea that individuals can be held liable for the **actions of a state or its military.**

➢ The **taking of hostages, willful killings, torture or inhuman treatment of prisoners of war, and forcing children to fight** are some of the more obvious examples.

What are the Geneva Conventions (1949)?

➢ The **Geneva Conventions (1949) and their Additional Protocols** are international treaties that contain the most important rules limiting the barbarity of war.

➢ They protect people who **do not take part in the fighting (civilians, medics, aid workers) and those who can no longer fight** (wounded, sick and shipwrecked troops, prisoners of war).

  ❍ The **first Geneva Convention** protects wounded and sick soldiers on land during war.

  ❍ The **second Geneva Convention** protects wounded, sick and shipwrecked military personnel at sea during war.

  ❍ The **third Geneva Convention** applies to **prisoners of war.**

  ❍ The **fourth Geneva Convention** affords protection to civilians, including in occupied territory.

➢ **India** is a party to the **Geneva Convention**.

What is Criteria for War Crimes?

➢ **Criteria:** To decide whether an individual or a military has committed a war crime, international humanitarian law lays down **three principles:**

  ❍ **Distinction:** It is **illegal to target** objectives that are "expected to cause incidental loss of **civilian life**, injury to civilians, damage to civilian objectives, which would be excessive in relation to the concrete and direct military advantage anticipated.

  ❍ **Proportionality:** Proportionality prohibits armies from responding to an attack with excessive violence.

    ● **For example:** If a soldier is killed, for example, you cannot bomb an entire city in retaliation.

  ❍ **Precaution:** It requires parties to a conflict to avoid or minimise the harm done to the civilian population.

➢ **Gray Area in Definition:** Raids on a cities or villages, bombing residential buildings or schools, and even the killing of groups of civilians do not necessarily amount to war crimes — not if their military necessity is justified.

  ❍ The same act can become a war crime if it **results in unnecessary destruction, suffering and casualties that exceed the military gain** from the attack.

  ❍ Further, Civilian and military populations have become increasingly hard to distinguish.

What is the difference between War Crimes & Crimes Against Humanity?

➢ The **United Nations Office on Genocide Prevention and the Responsibility to Protect (or Genocide convention)** separates war crimes from genocide and crimes against humanity.

➢ War crimes are defined as occurring in a domestic conflict or a war between two states.

➢ While genocide and **crimes against humanity** can happen in peacetime or during the unilateral aggression of a military towards a group of unarmed people.

India & ITU Sign Host Country Agreement

Why in News?

Recently, the Union Minister of Communications and Secretary General of **International Telecommunication Union (ITU)** signed the **Host Country Agreement (HCA)** for the establishment of an **Area Office & Innovation Centre of ITU in New Delhi.**

➢ The **5Gi standards developed within India have now been recognised by ITU** as one of the three technologies for 5G.

➢ 5Gi is a **locally designed telecommunication network** that has been designed by IIT Hyderabad.

What is the Agreement About?

➢ The Host Country Agreement provides the **legal and financial framework for establishment and operations** of the Area Office.

➢ The Area Office and Innovation Centre of ITU at New Delhi is **expected to serve South Asian countries** namely Afghanistan, Bangladesh, Bhutan, Iran, Maldives, Nepal, Sri Lanka and India.

➢ The Area Office shall **also have an Innovation Centre,** which is expected to give impetus to research and development in **telecommunication technologies in South Asia.**

What is ITU?

➢ It is the **United Nations** specialised agency for Information and Communication Technologies – ICTs.

➢ **Founded in 1865** to facilitate international connectivity in communications networks. It is **Headquartered in Geneva, Switzerland.**

➢ It **allocates global radio spectrum and satellite orbits, develops the technical standards** that ensure networks and technologies seamlessly interconnect, and strives to improve access to ICTs to underserved communities worldwide.

➢ ITU currently has a membership of **193 countries and over 900 private-sector entities and academic institutions.**

❍ Earlier, India got elected as a member of ITU Council for another 4-year term - from 2019 to 2022. **India has remained a regular member since 1952.**

➢ Important publication of the ITU is the **Global Cybersecurity Index (GCI).** India ranked **10th** in the 2020 index.

UNGA Resolution on Russia-Ukraine

Why in News?

Recently, **India has abstained** at the **United Nations General Assembly (UNGA)** to condemn Russia's invasion of Ukraine. The **emergency special session** was convened by UNGA for discussing a resolution **that called for Russia to unconditionally withdraw its troops.**

➢ The resolution was discussed under the rubric of the **"Uniting for Peace" resolution.**

➢ Uniting for Peace resolution was invoked after decades, after a resolution had failed to pass the **U.N. Security Council (UNSC) when Russia exercised its veto.**

How much of Ukraine does Russia control?

- ■ Area under Russian control
- □ Russia annexed Crimea in 2014

What is Uniting for Peace Resolution?

➢ **About:** UN General Assembly **resolution 377(V)** is known as the Uniting for peace resolution which was **adopted in 1950.** The most important part of resolution is section A which states that where the **Security Council, because of lack of unanimity** of the permanent members, fails to exercise its **primary responsibility** for the **maintenance of international peace and security**, the **General Assembly** shall seize itself of the matter.

➢ **Origin:** The Uniting for Peace resolution was **initiated by the United States**, in October 1950, as a means of **circumventing further Soviet vetoes** during the course of the **Korean War.**

➢ **Objective:** Under this, the UNGA granted to itself the power to deal with threats to the peace if the UNSC fails to act after a veto by a permanent member.

❍ Such an interpretation sees the U**NGA as being awarded 'final responsibility'** for matters of international peace and security, by the UN Charter.

➢ **Emergency Special Session (ESS):** If not in session, the General Assembly may meet using the mechanism of the emergency special session. To date, 11 emergency special sessions have been convened.

❍ First ESS was instigated **after France and UK veto over UNSC resolution 119** during the **Suez Crisis 1956.**

What are the Key Points of the Resolution?

➢ The resolution, **co-sponsored by 96 countries,** needed **two thirds of those present and voting to support it, for it to pass.**

Note:

➢ It condemns the 24th February 2022 **'special military operation'** by Russia over Ukraine.

➢ It says **no territories acquired through force (Donetsk and Luhansk) will be recognised and calls for Russia to "immediately, completely and unconditionally"** withdraw from Ukraine.

What is India's Stand and Concerns?

➢ India's **Permanent Representative to the UN, T. S. Tirumurti,** said that the **"safe and uninterrupted passage"** of Indian nationals, especially students, was India's **"foremost priority".**

  ○ India also called for an **"immediate ceasefire"** and **humanitarian access to conflict areas.**

  ○ India hoped that the **second round of talks between Russia and Ukraine** would yield positive results.

➢ Russia's actions have left India in an uncomfortable position as it attempts to **balance its interests with both Russia and the Western Countries.**

  ○ However, India's desire to remain an "abstentionist" power is being called into question.

➢ Given its experiences in its **own neighbourhood, with China and Pakistan,** India is also wary of the **implications of not condemning one country** unilaterally attempting to change the borders it shares with another.

➢ India urges that all Member States demonstrate their commitment to the principles of t**he UN Charter, to international law and respect for sovereignty and territorial integrity** of all states.

➢ A **number of countries in India's neighbourhood supported the resolution** — Bhutan, Nepal, and the Maldives, for instance. Afghanistan, currently run by a militant organisation (the Taliban), and Myanmar, currently ruled by a junta (military), also voted in favour of it.

  ○ **Bangladesh, Pakistan and Sri Lanka, like India**, abstained. **China also** abstained.

Are UN resolutions binding?

➢ **Resolutions and decisions** are formal expressions of the opinion or will of UN organs.

➢ The nature of the resolution determines if it is considered binding on States.

➢ **Articles 10 and 14 of the UN Charter** refer to General Assembly resolutions as **"recommendations".**

○ The **recommendatory nature of General Assembly** resolutions has repeatedly been stressed by the **International Court of Justice.**

○ However, some General Assembly resolutions dealing with matters internal to the United Nations, such as budgetary decisions or instructions to lower-ranking organs, are clearly binding.

➢ In general, resolutions adopted by the **Security Council acting under Chapter VII** of the Charter, are considered binding, in accordance with **Article 25 of the Charter.**

○ However, they are subject to veto exercised by **permanent members of UNSC.**

Montreux Convention

Why in News?

Turkey is set to activate the Montreux Convention in response to **Russia's War over Ukraine.**

➢ The declaration that situation in Ukraine had become a war, authorizes Turkey to activate the Montreux Convention and **ban Russian war vessels from entering the Black Sea through the Bosporus and Dardanelles straits.**

What is the Location of the Bosporus and Dardanelles straits?

➢ The Bosporus and Dardanelles straits, also known as the T**urkish Straits or the Black Sea Straits,** connect the Aegean Sea and the Black Sea via the Sea of Marmara.

➢ It is the only passage **through which the Black Sea ports can access the Mediterranean and beyond.**

➢ Over **three million barrels of oil**, about **3% of the daily global supply,** mostly produced in **Russia, Azerbaijan, and Kazakhstan,** pass through this waterway every day.

Note:

➢ The route also **ships large amounts of iron, steel, and agricultural products** from the Black Sea coast to Europe and the rest of the world.

What is the Montreux Convention?

➢ The **international agreement** was signed by **Australia, Bulgaria, France, Greece, Japan, Romania, Yugoslavia, the United Kingdom, the Soviet Union and Turkey** and has been in effect since **November 1936.**

➢ The Montreux Convention Regarding the Regime of the Straits **gives Turkey control over the water route between the Black Sea.**

  ❍ Russia has a **major navy base at Sevastopol, on the Crimean Peninsula.**

  ❍ However, for ships to move to and from the Mediterranean – and beyond – they have to pass through **two straits controlled by Turkey under the Montreux Convention.**

➢ It sets limits on the **passage of civilian vessels and military warships through the Dardanelles and the Bosporus straits.** The key elements in the Montreux Convention are:

  ❍ **In the event of a war,** the pact gives Turkey the **right to regulate** the transit of naval warships and to block the straits to warships belonging to the countries involved in the conflict.

  ❍ Any country with **coastline on the Black Sea – Romania, Bulgaria, Georgia, Russia or Ukraine** – must notify **Turkey eight days** in advance of its intention to send vessels of war through the straits.

    ● Other countries, the ones that don't border the Black Sea, must give Turkey **15 days' advance notice.**

➢ Turkey has used the **convention's powers before**. During **World War II**, Turkey prevented the **Axis powers** from sending their warships to attack the **Soviet Union** – and **blocked the Soviet navy from participating in combat in the Mediterranean.**

What is the Role of Turkey in the Present Crisis?

➢ In the current situation, the Turkish government finds itself in a **difficult position, as both Ukraine and Russia** are important partners in **critical energy and military trade agreements.**

➢ Turkey, a **NATO member since 1952**, wants to strengthen its ties with the **West while not upsetting Russia**. Its control over these key straits may test its **balancing act.**

➢ In this context, Turkey has held that **it cannot block all Russian warships** accessing the Black Sea **due to a clause in the pact exempting** those returning to their registered base.

➢ **Article 19 of the treaty contains an exception** for the countries on the Black Sea that can effectively undermine **Turkey's power in blocking the Russian warships entering or exiting the Black Sea.**

  ❍ Vessels of war belonging to belligerent powers, whether they are Black Sea Powers or not, which have become separated from their bases, may return thereto.

➢ This exception provides Russia with an alternate way to exploit the **Montreux Convention,** which would be to reassign some of its vessels to the Black Sea.

India-Russia Military Relations

Why in News?

The evacuation of thousands of **Indian students in Ukraine (Operation Ganga)** is the most immediate impact of **Russia's war over Ukraine** on India. However, the **Russia-Ukraine conflict** will have long-term implications too.

➢ For example, **negotiating its relationships** with the **United States and other Western nations** on one side, and the **historically deep and strategic ties with Russia** on the other.

➢ This will most significantly have an impact on the decades-old **defence trade between India and Russia.**

Note:

What is the History of India-Russia Defence Ties?

➢ India was reliant, **almost solely on the British**, and other Western nations for its arms imports **immediately after Independence.**

➢ However, this dependence weaned, and by the **1970s India was importing several weapons systems from the USSR (now Russia)**, making it the country's largest defence importer for decades.

➢ Russia has provided some of the **most sensitive and important weapons platform**s that India has required from time to time including **nuclear submarines, aircraft carriers, tanks, guns, fighter jets, and missiles.**

  ○ According to one estimate, the share of Russian-origin weapons and platforms across **Indian armed forces is as high as 85%.**

➢ Russia is the **second-largest arms exporter in the world, following only the United States.**

➢ For Russia, **India is the largest importer,** and for India, **Russia is the largest exporter when it comes to arms transfer.**

  ○ Between 2000 and 2020, Russia accounted for **66.5% of India's arms imports.**

➢ Russia's share in Indian arms imports was down to abou**t 50% between 2016 and 2020, but it still remained the largest single importer.**

What Defence Equipment does India procure From Russia?

➢ **Submarines:** The **first submarine** India ever **got was also Soviet.**

  ○ The first **Foxtrot Class** submarine bought from the USSR entered Indian service in 1967 as **INS Kalvari.**

  ○ Of the total 16 conventional diesel-electric submarines with the Indian Navy, eight are **Kilo class, of Soviet origins.**

  ○ India has **one indigenously manufactured nuclear ballistic submarine (INS Arihant)** commissioned, of the four that are being built. However, a lot of the technology is based on Russian platforms.

➢ **Frigates & Guided-missile Destroyers:** Four of the Navy's 10 guided-missile destroyers are **Russian Kashin class**, and 6 of its 17 frigates are **Russian Talwar class.**

➢ **Aircraft Carrier:** The only aircraft carrier in service with India, **INS Vikramaditya** is a **Soviet-made Kiev-class vessel** that came into service for the **Indian Navy** in 2013.

➢ **Missile Program:** India's missile programme has been developed with significant help from Russia or the Soviets earlier.

  ○ The **BrahMos missile,** which India will begin exporting soon, has been developed jointly with Russia.

➢ **Fighter Aircraft:** Russia has also been one of main exporters of fighter aircraft to India, including hundreds of **Sukhoi** and **MiG jets.** All six of the **service's air tankers** are **Russian-made Il-78s.**

➢ **Arms and Ammunitions:** According to the **International Institute of Strategic Studies (IISS),** India's present military arsenal is heavily stocked with Russian-made or Russian-designed equipment.

➢ **Tanks:** Indian **Army's main battle tank force** is **composed predominantly of Russian T-72M1 (66%) and T-90S (30%).**

➢ **Favourable Russian Military Exports to India:** Much of Russia's influence in India comes through its willingness to provide weapons systems and technologies that no other country will export to India.

  ○ The US only provides **non-lethal defence technology like C-130j Super Hercules, C-13 Globemaster, P-8i Poseidon** etc.

  ○ While Russia provides high-end technology like **Brahmos supersonic missile, S-400 anti-missile system.**

  ○ Russia also continues to offer **advanced weapons platforms at relatively attractive rates.**

What can be the Impact of the Russia-Ukraine War on Military Supplies?

➢ At the moment there are **two major defence deals** between India and Russia that might be jeopardised by the current crisis.

➢ **S-400 Triumf air-defence system Deal:**

  ○ The deal has been under the threat of American sanctions, even as the US had not decided on it yet.

  ○ However, the fresh round of sanctions on Russia could jeopardise this deal.

➢ **Joint Submarine Development:** Russia has also pitched to make **six Air Independent Propulsion (AIP-powered) conventional submarines** for the Navy under the **P75-I project,** along with four other international bidders.

Note:

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○ India is also in talks with Russia to lease two nuclear-ballistic submarines, **Chakra 3 and Chakra 4**, the first of which is expected to be delivered by 2025.

What are India's Plans to Diversify Arms Import Diversification?

➤ Over the last few years, there has been a **conscious effort to expand the weapons platform** bases to not only other countries but also domestically as well.

➤ **Stockholm International Peace Research Institute (SIPRI)** noted in its international arms transfer trends report last year that between 2011–15 and 2016–20 arms imports by **India decreased by 33%.**

➤ In 2011–15 the USA was the **second-largest arms supplier to India,** but in 2016–20 India's arms imports from the USA were 46% lower than in the previous five-year period, making the USA the fourth-largest supplier to India in 2016–20.

➤ **France and Israel** were the second and third largest arms suppliers to India in 2016–20.

India and Canada to re-launch the Comprehensive Economic Partnership Agreement

Why in News?

Recently, India and Canada held the fifth Ministerial Dialogue on Trade & Investment (MDTI), where Ministers agreed to **formally re-launch the negotiations for India-Canada Comprehensive Economic Partnership Agreement (CEPA**) and also consider an Interim Agreement or Early Progress Trade Agreement (EPTA) that could bring early commercial gains to both the countries.

➤ Earlier, India and Australia announced that they are set to conclude an **Interim Trade Agreement in March 2022** and a **Comprehensive Economic Cooperation Agreement (CECA)** 12-18 months thereafter.

What are the Key Points?

➤ The Interim Agreement would include high level commitments in goods, services, rules of origin, sanitary and **phytosanitary measures**, technical barriers to trade, and dispute settlement, and may also cover any other areas mutually agreed upon.

➤ The two sides emphasized cooperation in sectors such as pharmaceuticals and critical and **rare earth minerals** as well as in areas like tourism, urban infrastructure, renewable energy, and mining.

➤ Both countries **agreed to undertake intensified work with respect to the recognition of Canada's systems approach to pest risk management** in pulses and market access for Indian agriculture goods such as sweet corn, baby corn and banana etc.

➤ Canada also agreed to examine expeditiously the request for Conformity Verification Body (CVB) status to **APEDA (Agricultural and Processed Food Products Export Development Authority)** for facilitating Indian organic export products.

○ A CVB is an organisation that has an agreement with the Canadian Food Inspection Agency under subsection 14(1) of the Canadian Food Inspection Agency Act to assess, recommend for accreditation and monitor certification bodies.

➤ The Ministers acknowledged the significance of **establishing resilient supply chains** in critical sectors and exchanged views on collaboration in this area.

What is an Interim Trade Agreement?

➤ An interim or early harvest trade agreement is used to **liberalize tariffs on the trade of certain goods** between two countries or trading blocs before a **comprehensive FTA (Free Trade Agreement)** is concluded.

➤ Government's emphasis on **interim agreements may be tactical so that a deal may be achieved with minimum commitments** and would allow for contentious issues to be resolved later.

Note:

➢ The problem, though, is that these **early harvest schemes potentially target the low-hanging fruits, leaving the tougher goods** and services for later.

➢ Early harvest agreements that do not graduate into full-scale FTAs are exposed to legal challenges from other countries that are members of the **World Trade Organisation (WTO).**

➢ It is often beneficial to **negotiate the entire deal together, as an early harvest deal may reduce the incentive** for one side to work towards a full FTA.

What is CEPA?

➢ It is a kind of **free trade pact** which covers negotiation on the trade in services and investment, and other areas of economic partnership.

➢ It may even consider negotiation on areas such as trade facilitation and customs cooperation, competition, and Intellectual Property Rights.

➢ Partnership agreements or cooperation agreements are **more comprehensive than Free Trade Agreements.**

➢ CEPA also looks into the regulatory aspect of trade and encompasses an agreement covering the regulatory issues.

➢ India **has signed CEPAs with South Korea and Japan**.

What is India's Current Trade Relation with Canada?

➢ India is Canada's **11th largest export market**, and 12th largest trading partner overall.

  ○ India's exports to Canada stood at USD 2.9 billion in 2020-21 as against USD 2.85 billion in 2019-20. Imports in 2020-21 were USD 2.68 billion as against USD 3.9 billion in 2019-20.

➢ Canada's commercial priorities in India are t**argeted at India's policy objectives and sectors where Canada has a comparative advantage**. **These priorities include:**

  ○ Supporting India's energy security ambitions **through increased exports of conventional and nuclear energy** as well as clean and renewable energy technology;

  ○ **Helping India meet its substantial urban and transportation infrastructur**e needs through provision of financing, equipment, technology and engineering services;

  ○ Enhanced **education and skills training** through greater collaboration between Canadian and Indian educational and technical skills institutions;

  ○ Commercial research and development to drive innovation in such sectors as information and communications technologies;

  ○ Increased exports of food products and fertilizers **to support India's food security needs.**

Women In Peacekeeping

Why in News

 Recently, many women soldiers were training to be a part of a **United Nations Peacekeeping mission.**

➢ For more than a decade, the **United Nations (UN) has called for more participation** from women in **conflict prevention, post-conflict peacebuilding and peacekeeping.**

What is UN Peacekeeping?

➢ UN Peacekeeping began in **1948** when the UN Security Council authorised the deployment of UN military observers to the Middle East.

➢ UN Peacekeeping **helps countries navigate the difficult path from conflict to peace.**

➢ It deploys troops and police from around the world, integrating them with civilian peacekeepers to address a range of mandates set by the **UN Security Council (UNSC)** and the **General Assembly.**

The Biggest Contributors To UN Peacekeeping Operations

Main contributors of uniformed personnel to UN peacekeeping operations as of March 31, 2021*

Country	Personnel
Bangladesh	6,608
Rwanda	6,335
Ethiopia	6,245
Nepal	5,674
India	5,528
Pakistan	4,732
Egypt	3,074
Indonesia	2,792
China	2,469
Ghana	2,283
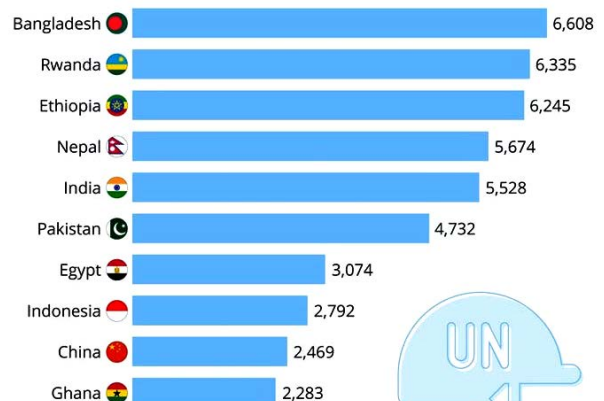
Note:

What is Background of Indian Women in Peacekeeping Forces?

➢ **Background:** For the first time in the history of UN peacekeeping, India sent an **all-female Formed Police Unit (FPU) to be deployed in Liberia in 2007** after a civil war ravaged the African nation.

➢ **Intent:** Recently, at the **UN Security Council (UNSC),** Indian officials called for **more female participation in public life** and the **elimination of violence against them** as a prerequisite for promoting lasting peace around the world.

➢ **Significance:** In a profession that continues to be **heavily dominated by men,** and in a nation that is **riddled with gender violence**, these female police officers from India are **breaking stereotypes** to represent their country on the world stage.

What is the current status of Women in UN Peacekeeping forces?

➢ **Multi-Role:** Women are deployed in all areas – **police, military and civilian –** and have made a positive impact on peacekeeping environments, including in supporting the role of women in building peace and protecting women's rights.

➢ **Current Numbers:** According to the UN, in 2020, o**ut of approximately 95,000 peacekeepers, women constitute 4.8% of military contingents and 10.9% of formed police units and 34% of justice and corrections** government-provided personnel in UN Peacekeeping missions.

➢ **Global Effort Initaitive**: UN Police Division launched '**the Global Effort'** to recruit more female police officers into national police services and into UN police operations around the world.

○ The 2028 target for women serving in **military contingents is 15%, and 25% for military observers and staff officers.**

➢ **UNSC Resolution: UN Security Council resolution 1325 (UNSCR1325)** has called for an expansion of the role and contribution of women in its operations, including uniformed women peacekeepers.

➢ **Action for Peacekeeping (A4P) initiative:** The **UN Action for Peacekeeping (A4P) initiative** views the Women, Peace and Security agenda as critical to enhancing peacekeeping operations' performance.

○ This can be achieved through supporting women's full participation in peace processes and making peacekeeping more **gender-responsive,** including through increasing the number of civilian and **uniformed women in peacekeeping at all levels and in key positions.**

Why is it important to have women peacekeepers?

➢ **Improved Operations And Performance:** Greater diversity and a broadened skillset means improved decision-making, planning and results, leading to greater operational effectiveness and performance.

➢ **Better Access:** Women peacekeepers can better access the population, including women and children - **for example**, by interviewing and supporting survivors of gender-based violence and violence against children - thereby generating critical information that would otherwise be difficult to reach.

➢ **Building Trust and Confidence:** Women peacekeepers are **essential enablers to build trust and confidence with local communities and help improve access and support for local women.**

○ For example, by interacting with women in societies where women are prohibited from speaking to men.

➢ **Inspiring and Creating Role Models**: Women peacekeepers **serve as powerful mentors and role models for women and girls** in post-conflict settings in the host community, setting examples for them to advocate for their own rights and pursue non-traditional careers.

FATF retains Pakistan in Grey List

Why in News?

The **Financial Action Task Force (FATF)** has r**etained Pakistan on its 'greylist' or 'increased monitoring list'.** The FATF **included the United Arab Emirates (UAE),** with which **India signed a free trade agreement** in February 2021.

➢ There are 17 countries on the grey list of the FATF.

➢ Zimbabwe has been excluded from the list after a review found it compliant on all parameters.

Note:

What are the Key Points?

➢ **About:**

○ FATF decided against existing Pakistan from the category despite the country meeting 32 out of 34 action points.

○ It noted that Pakistan had completed 26 of the 27 action items in its **2018 action plan of the FATF** and of the seven action items of the 2021 action plan of the FATF's **Asia Pacific Group on Money Laundering (APG).**

○ In response to **additional deficiencies later identified in Pakistan's 2019 APG Mutual Evaluation Report** in June 2021, Pakistan provided further high-level commitment to address these strategic deficiencies pursuant to a new action plan that primarily focuses on combating money laundering.

● The country had two concurrent action plans with a total of 34 action points, of which 30 had either been fully or largely addressed to curb money laundering and terror financing.

○ The FATF **encouraged Pakistan to continue making progress to address, as soon as possible, the one remaining item** by continuing to demonstrate that terror financing investigations and prosecutions target senior leaders and commanders of **UN-designated terrorist groups.**

● Since June 2018 - when Pakistan made a high-level political commitment to work with the FATF and APG to strengthen its anti-money laundering/combating the financing of terrorism (AML/CFT) regime and to address its strategic counter–terrorist financing–related deficiencies — its continued political commitment had led to significant progress across a comprehensive CFT action plan.

➢ **Background:**

○ The FATF had issued the 27-point action plan after placing Pakistan on the 'Grey List' in June 2018. The action plan pertains to curbing money laundering and terror financing.

○ Pakistan was first put on the list in 2008, removed in 2009 and then again remained under increased monitoring from 2012 to 2015.

○ Pakistan's inclusion in the grey list has adversely impacted that country's prospects of obtaining financial assistance from world bodies such as the **International Monetary Fund**, **World Bank**, and **Asia Development Bank.**

What is the Financial Action Task Force?

➢ **About:**

○ An **inter-governmental body** established in 1989 **during the G7 Summit** in Paris.

○ Assesses the strength of a country's anti-money laundering and anti-terror financing frameworks, however it does not go by individual cases.

➢ **Objectives:**

○ To set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.

➢ **Headquarters:**

○ Its Secretariat is located at the **Organisation for Economic Cooperation and Development (OECD)** headquarters in Paris.

➢ **Member Countries:**

○ The FATF currently has **39 members** including two regional organisations - the **European Commission** and **Gulf Cooperation Council. India is a membe**r of the FATF.

➢ **Lists under FATF**:

○ **Grey List:**

● Countries that are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.

● This inclusion serves as a warning to the country that it may enter the blacklist.

○ **Black List:**

● Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist. These countries support terror funding and money laundering activities.

● The FATF revises the blacklist regularly, adding or deleting entries.

● Currently, Iran and Democratic People's Republic of Korea (DPRK) are under High-risk Jurisdiction or black list.

➢ **Sessions:**

○ The **FATF Plenary is the decision making body** of the FATF. It meets **three times per year.**

Note:

Permanent Indus Commission Meeting

Why in News?

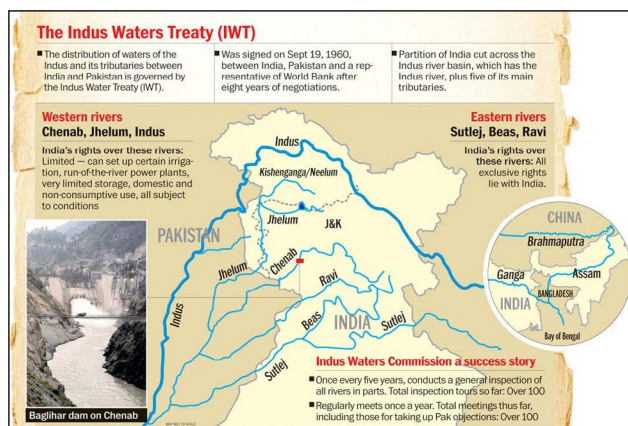The **117ᵗʰ Meeting of Permanent Indus Commission (PIC)** between India and Pakistan was held.

➢ Earlier, the **Central government has decided to adopt a new criterion** for selecting members of the **Bhakra Beas Management Board (BBMB).**

What are the Highlights of the Meeting?

➢ Both sides **discussed the exchange of hydrological and flood data** during which the **Indian side underscored that all its projects are fully compliant with the provisions** of the **Indus Waters Treaty.**

➢ The issue of the Fazilka drain was also discussed and Pakistan assured that all necessary action will continue to be taken to ensure the free flow of **Fazilka drain into the river Sutlej.**

    ○ Fazilka drain is one of 22 drains and water bodies, where untreated water of **Malwa district (Punjab, India)** is discharged.

    ○ The **drain is closed at the borderline of countries**, leading to stagnation in the shape of ponds and deterioration of quality of groundwater in the border area.

➢ Technical discussions were held **regarding ongoing projects** including **Pakal Dul, Kiru and Lower Kalnai.**

    ○ The **Pakal Dul Hydro Electric Project (1000 MW)** is proposed on **river Marusudar, a tributary of Chenab river** in the Union Territory of Jammu & Kashmir.

    ○ **Kiru Hydro Electric Project (624 MW) is proposed on River Chenab,** located in Kishtwar district of Jammu & Kashmir.

    ○ **Lower Kalnai project is a hydroelectric power project** in the Doda and Kishtwar districts of Jammu and Kashmir.

➢ The Indian side explicitly **conveyed that as an upper riparian State**, India has been providing information on extraordinary discharges of water from reservoirs and flood flows every year, as mandated under the treaty.

What is the History of the Indus Waters Treaty?

➢ The Indus river **basin has six rivers- Indus, Jhelum, Chenab, Ravi, Beas and Sutlej**; originating from Tibet and **flowing through the Himalayan ranges** to enter Pakistan, ending in the south of Karachi.

➢ In 1947, the **line of partition, aside from delineating geographical boundaries** for India and Pakistan, also cut the **Indus river system** into two.

    ○ **Both the sides were dependent on water from the Indus river basin** to keep their irrigation infrastructure functional and therefore, equitable distribution was needed.

➢ Initially, the **Inter-dominion accord of May, 1948 was adopted**, where both countries, after meeting for a conference, decided that **India would supply water to Pakistan** in exchange for an annual payment made by the latter.

    ○ This **agreement however, soon disintegrated as both the countries** could not agree upon its common interpretations.

➢ **In 1951**, in the **backdrop of the water-sharing dispute**, both the **countries applied to the World Bank** for funding of their respective irrigation projects on Indus and its tributaries, which is when the World Bank offered to mediate the conflict.

➢ Finally in 1960, after nearly a decade of fact-finding, negotiation, proposals by the World Bank and amendments to them, an agreement was reached between the two countries, and the Indus Waters Treaty (IWT) was signed by former Prime Minister Jawaharlal Nehru and then President of Pakistan, Ayub Khan.

The Indus Waters Treaty (IWT)

- The distribution of waters of the Indus and its tributaries between India and Pakistan is governed by the Indus Water Treaty (IWT).
- Was signed on Sept 19, 1960, between India, Pakistan and a representative of World Bank after eight years of negotiations.
- Partition of India cut across the Indus river basin, which has the Indus river, plus five of its main tributaries.

Western rivers
Chenab, Jhelum, Indus
India's rights over these rivers: Limited — can set up certain irrigation, run-of-the-river power plants, very limited storage, domestic and non-consumptive use, all subject to conditions

Eastern rivers
Sutlej, Beas, Ravi
India's rights over these rivers: All exclusive rights lie with India.

Indus Waters Commission a success story
- Once every five years, conducts a general inspection of all rivers in parts. Total inspection tours so far: Over 100
- Regularly meets once a year. Total meetings thus far, including those for taking up Pak objections: Over 100

Baglihar dam on Chenab

Note:

What are Some of its Key Provisions?

➤ **Sharing Water:**
  ○ The treaty prescribed **how water from the six rivers of the Indus River System would be shared** between India and Pakistan.
  ○ It **allocated the three western rivers—Indus, Chenab and Jhelum**—to Pakistan for unrestricted use, barring certain non-consumptive, agricultural and domestic uses by India and the **three Eastern rivers—Ravi, Beas and Sutlej**—were allocated to India for unrestricted usage.
    ● This means that **80% of the share of water or about 135 Million Acre Feet (MAF) went to Pakistan**, while leaving the **rest 33 MAF or 20% of water for use by India.**

➤ **Permanent Indus Commission:**
  ○ It also **required both the countries to establish a Permanent Indus Commission** constituted by permanent commissioners on both sides.

➤ **Rights over Rivers:**
  ○ While Pakistan has **rights over the waters of Jhelum, Chenab and Indus**, Annexure C of the IWT allows India certain agricultural uses, while **Annexure D allows it to build 'run of the river' hydropower projects**, meaning projects not requiring live storage of water.

➤ **Design Specifications:**
  ○ It also **provides certain design specification**s which India has to follow while developing such projects.

➤ **Raising Objections:**
  ○ The treaty also **allows Pakistan to raise objections over such projects being built by India,** if it does not find them to be compliant with the specifications.
  ○ India has to **share information on the project design or alterations** made to it with Pakistan, which is required to respond with objections, if any, within three months of receipt.
  ○ Besides, **India is allowed to have a minimum storage level** on the western rivers – meaning it can store up to 3.75 MAF of water for conservation and flood storage purposes.

➤ **Dispute Resolution Mechanism:**
  ○ The **IWT also provides a three step dispute resolution mechanism**, under which "questions" on both sides can be resolved at the Permanent Commission, or can also be taken up at the inter-government level.
  ○ In case of **unresolved questions or "differences"** between the countries on water-sharing, such as technical differences, either side **can approach the World Bank to appoint a Neutral Expert (NE)** to come to a decision.
    ● And eventually, **if either party is not satisfied with the NE's decision** or in case of "disputes" in the interpretation and extent of the treaty, **matters can be referred to a Court of Arbitration.**

What about Geopolitical Conflicts?

➤ In recent years, the Indus Water Treaty **has been brought up a couple of times during geo-political tension** between India and Pakistan.

➤ In the aftermath of the **attack on J&K's Uri army camp** in 2016, India said that **"Blood and water cannot flow simultaneously,"** soon after which, the **Permanent Indus Commission talks were suspended for that year** by the Indian side, which also at one point threatened to walk out of the treaty.

➤ Again in 2019, when the **suicide attack was carried out in Pulwama**, **killing 40 CRPF personnel**, India had for the first time threatened to cut off water supply to Pakistan from the Indus River System.

➤ Later it was clarified that **restricting Pakistan's supply would be in violation of the IWT,** and required consideration of the Centre's top officials.
  ○ IWT **does not have a unilateral exit provision**, and is supposed to remain in force unless both the countries ratify another mutually agreed pact.

What is the Permanent Indus Commission?

➤ It is a **bilateral commission of officials from India and Pakistan**, created to implement and manage goals of the **Indus Waters Treaty, 1960.**

➤ The Commission, according to the treaty, **shall meet regularly at least once a year,** alternately in India and Pakistan.

➤ **The functions of the Commission include:**
  ○ To study and report to the two Governments on any problem relating to the development of the waters of the rivers.
  ○ To solve disputes arising over water sharing.
  ○ To arrange technical visits to projects' sites and critical river head works.

Note:

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- ○ To undertake, once in every five years, a general tour of inspection of the Rivers for ascertaining the facts.
- ○ To take necessary steps for the implementation of the provisions of the treaty.

International Court of Justice & Genocide Convention

Why in News

Recently, Ukraine has filed an application before the **International Court of Justice (ICJ),** instituting proceedings against Russia.

➢ **Ukraine has accused Russia** of **falsely claiming that** "**acts of genocide** have occurred in the Luhansk and Donetsk oblasts of Ukraine", and of **using that as a pretext to recognise the independence** of these regions and of **going to war against Ukraine.**

➢ The dispute is concerning **1948 Convention on the Prevention and Punishment of the Crime of Genocide" (the "Genocide Convention").**

What is the International Court of Justice?

➢ **About:** The ICJ is the **principal judicial organ of the United Nations (UN**).
- ○ It is the only one of the **six principal organs** of the UN that is not located in New York City.

➢ **Establishment**: It was established in **June 1945** by the **Charter of the UN and began work in April 1946.**

➢ **Precursor:** The court is the successor to the **Permanent Court of International Justice** (PCIJ), which was brought into being through, and by, the **League of Nations.**
- ○ PCIJ held its inaugural sitting at the **Peace Palace in The Hague,** Netherlands, in February 1922.
- ○ After **World War II,** the League of Nations and PCIJ were replaced by the UN and ICJ respectively.
- ○ The PCIJ was formally dissolved in April 1946, and its last president, **Judge José Gustavo Guerrero of El Salvador,** became the **first president of the ICJ.**

➢ **Role of ICJ:** Its role is **to settle, in accordance with international law, legal disputes submitted to it by States** and to give advisory opinions on legal questions referred to it by authorized UN organs and specialized agencies.

➢ **First Case:** The first case, which was brought by the **UK against Albania** and concerned incidents in the Corfu channel — the **narrow strait of the Ionian Sea between the Greek island of Corfu and Albania on the European mainland —** was submitted in May 1947.

➢ **ICJ Administration:** The judges of the court are **assisted by a Registry**, the administrative organ of the ICJ.

➢ **Official Languages:** English and French.

➢ **ICJ Jurisdiction:** All members of the **UN are automatically parties** to the ICJ statute, but this does **not automatically give the ICJ jurisdiction over disputes involving them**.
- ○ The ICJ gets jurisdiction only if **both parties consent to it.**
- ○ The judgment of the ICJ is final and technically **binding** on the parties to a case.
- ○ However, the ICJ **has no way to ensure compliance of its orders,** and its authority is derived from the willingness of countries to abide by them.

How Judges of the ICJ are Elected?

➢ The **ICJ has 15 judges** who are elected to nine-year terms by the **UN General Assembly and Security Council,** which vote simultaneously but separately.

➢ To be elected, a candidate must **receive a majority of the votes in both bodies,** a requirement that sometimes necessitates multiple rounds of voting.

➢ Elections are held at the **UNHQ in New York** during the annual UNGA meeting.
- ○ A third of the court i**s elected every three years.**

➢ The president and vice-president of the court are elected for **three-year terms by secret ballot.**
- ○ Judges are **eligible for re-election.**

➢ **Indian Judges at ICJ: Four Indians** have been members of the ICJ so far.
- ○ **Justice Dalveer Bhandari,** former judge of the **Supreme Court,** has been serving at the ICJ since 2012.
- ○ Former **Chief Justice of India R S Pathak** served from 1989-91,
- ○ Former **Chief Election Commissioner of India Nagendra Singh** from 1973-88.
- ○ **Sir Benegal Rau,** who was an advisor to the Constituent Assembly, was a member of the ICJ from 1952-53.

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What is the History of India's Engagement With ICJ?

➢ India has been a party to a case at the ICJ on **six occasions**, four of which have involved Pakistan. They are:
  ○ **Right of Passage over Indian Territory** *(Portugal v. India, culminated 1960).*
  ○ **Appeal Relating to the Jurisdiction of the ICAO Council** *(India v. Pakistan, culminated 1972).*
  ○ **Trial of Pakistani Prisoners of War** *(Pakistan v. India, culminated 1973).*
  ○ **Aerial Incident of 10 August 1999** *(Pakistan v. India, culminated 2000).*
  ○ **Obligations concerning Negotiations relating to Cessation of the Nuclear Arms Race and to Nuclear Disarmament** *(Marshall Islands v. India, culminated 2016).*
  ○ **Kulbhushan Jadhav** *(India v. Pakistan, culminated 2019).*

What is Genocide Convention?

➢ The Convention on the **Prevention and Punishment of the Crime of Genocide** (Genocide Convention) is an instrument of international law that codified for the **first time the crime of genocide.**

➢ The Genocide Convention was the **first human rights treaty** adopted by the General Assembly of the **UN on 9 December 1948.**

➢ It signified the international community's commitment to 'never again' after the atrocities committed during the **Second World War.**

➢ Its adoption marked a crucial step towards the **development of international human rights** and international criminal law as we know it today.

➢ According to the **Genocide Convention,** genocide is a crime that can take place both in time of war as well as in time of peace.

➢ The definition of the crime of genocide, as set out in the Convention, has been widely adopted at both national and international levels, including in the **1998 Rome Statute of the International Criminal Court (ICC).**

➢ Importantly**, the Convention establishes on State Parties the obligation to take measures to prevent and to punish the crime of genocide,** including by enacting relevant legislation and punishing perpetrators, "whether they are constitutionally responsible rulers, public officials or private individuals" **(Article IV).**
  ○ That obligation, in addition to the prohibition not to commit genocide, have been considered as norms of international customary law and therefore, binding on all States, whether or not they have ratified the Genocide Convention.

➢ **India is a signatory to this convention.**

Humanitarian Corridors

Why in News?

Recently, Russia declared a temporary ceasefire in the **Russia-Ukraine War** to provide **"humanitarian corridors"** for civilians.

➢ As the war enters a likely deadlier phase, **numerous civilians attempt to leave the country for safety and refuge**, there must be humanitarian measures taken to reduce civilian casualties.

What are Humanitarian Corridors?

➢ **About:** They are **demilitarised zones,** in a specific area and **for a specific time** — and both sides of an armed conflict agree to them.
  ○ The **United Nations** (UN) considers humanitarian corridors to be **one of several possible forms of a temporary pause of armed conflict.**
  ○ **For example** through large-scale bombing of civilian targets — humanitarian corridors can provide crucial relief.

➢ **Need:** The corridors are necessary **when cities are under siege and the population is cut off from basic food supplies, electricity and water.**

➢ **Function:** Through these corridors, either food and medical aid can be brought to areas of conflict, or civilians can be evacuated.

➢ **Accessibility:** Access to humanitarian corridors is determined by the parties to the conflict. It's usually limited to neutral actors, the UN or aid organisations such as the **Red Cross.**
  ○ They can also be used by UN observers,**Non-governmental Organisations (NGOs)** and journalists to gain access to contested areas where war crimes are being committed.

Note:

What are International conventions related to the Humanitarian Corridor?

➢ Even before **international organisations recognised humanitarian corridors,** such zones were defined in armed conflicts including in **World War II** when **Jewish children were evacuated from areas under Nazi control** to the United Kingdom.

➢ Humanitarian corridors were defined in **resolution 45/100** of the UNs' general assembly in 1990.

  ○ It said that **"relief corridors"** are seen by the international community as an important instrument to back up the right of civilians to receive assistance during armed conflicts.

  ○ It is also recognized in the **Geneva Conventions of 1949 and their Additional Protocols of 1977.**

➢ In 1992, the **International Institute of Humanitarian Law** from Sanremo in Italy defined the concept more specifically.

  ○ "Humanitarian assistance can transit, in this case, through the so-called humanitarian corridors, which must be respected and protected by the relevant authorities and, if necessary, under the authority of the UN".

➢ Humanitarian corridors have been frequently used in the **Syrian civil war**, **Libyan civil war**, **and Gaza war** among other such conflict zones.

What are Associated Issues?

➢ **Difficult To Enforce:** Since all sides need to agree to set up the corridors, **Humanitarian corridors are difficult to enforce.**

	International Court of Justice (ICJ) La Cour Internationale de Justice (CIJ)	International Criminal Court (ICC) La Cour pénale internationale (CPI)
Year Court Established	1946	2002
UN-Relationship	Official court of the U.N., commonly referred to as the "World Court."	Independent. May receive case referrals from the UN Security Council.
Location	The Hague, The Netherlands	The Hague, The Netherlands
Types of Cases	Contentious between parties & Advisory opinions	Criminal prosecution of individuals
Subject Matter	Sovereignty, boundary, & maritime disputes, trade, natural resources, human rights, treaty violations, treaty interpretation, and more.	Genocide, crimes against humanity, war crimes, crimes of aggression
Funding	UN-funded.	Assessed contribution from state parties to the Rome Statute; voluntary contributions from the U.N.; voluntary contributions from governments, international organizations, individuals, corporations and other entities.

ICJ vs. ICC

○ There are many wars and conflicts where calls for civilian corridors or **a pause in fighting have been made in vain.**

○ In the ongoing war in Yemen, for instance, the UN has so far failed in its negotiations.

➢ **Possible Misuse:** There is a **risk of military or political abuse**.

  ○ For example, the corridors can be u**sed to smuggle weapons and fuel into besieged cities.**

1954 Hague Convention

Why in News?

Recently, the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** has pitched for protective measures **to preserve Ukraine's endangered cultural heritage in light of Russia's invasion over Ukraine.**

➢ To avoid deliberate or accidental damages, the agency is marking cultural sites and monuments in Ukraine with the distinctive **"Blue Shield" emblem** of the **1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict.**

What is the Hague Convention 1954?

➢ **Background:** Through history, armed conflicts always **wrought havoc on the lives of people.** In addition to its humanitarian toll, conflicts also led to the **large-scale destruction of cultural heritage**, weakening the foundations of communities, lasting peace and prospects of reconciliation.

➢ **Origin:** Considering that the preservation of cultural heritage is of great importance for all peoples of the world and thus needs universal protection, the **Convention for the Protection of Cultural Property in the Event of Armed Conflict was adopted in 1954** under the auspices of UNESCO.

  ○ This convention is referred to as the **1954 Hague Convention.**

  ○ It is the **first and the most comprehensive multilateral treaty** dedicated exclusively to the protection of cultural heritage in times of peace as well as during an armed conflict.

Note:

- **Aim:** The convention aim**s to protect cultural property, such as monuments of architecture, art or history, archaeological sites, works of art, manuscripts, books and other objects of artistic, historical or archaeological interest, as well as scientific collections** of any kind regardless of their origin or ownership.

- India is party to Hague Convention 1954.

What is the Blue Shield Emblem?

- **Need:** Article 6 of the **1954 Hague Convention** states that **cultural property may bear a distinctive emblem** so as to facilitate its recognition.

- **Origin:** In pursuance of this, the Blue Shield, formerly the **International Committee of the Blue Shield** was founded in 1996.

- **About:** It is a **non-governmental, non-profit, international organisation** committed to the protection of heritage across the world.

  - The Blue Shield network, often referred to as the **cultural equivalent of the Red Cross.**

Logo of Blue Shield Emblem

- **Function:** The Blue Shield is a network of committees of dedicated individuals across the world that is committed to protect the world's cultural heritage from threats such as armed conflict and natural disasters.

  - This includes museums, monuments, archaeological sites, archives, libraries and audio-visual material, and significant natural areas, as well as intangible heritage.

- **Associated Issue:** Some States have refrained from marking their cultural **property,** arguing that it would make that property more vulnerable to attack by an enemy determined to destroy its symbols of national identity.

  - Unfortunately, this proved to be the case during the war in the former Yugoslavia where cultural property marked with the Blue Shield was intentionally targeted.

What is UNESCO?

- **About:**
  - It is a specialized agency of the **United Nations (UN)**. It seeks to build peace through international cooperation in Education, the Sciences and Culture.
  - It was **founded in 1945 a**nd is **located in Paris, France.**
  - It has **193 Members and 11 Associate Members**. India joined UNESCO in 1946.
    - In 2019, the USA and Israel formally quit UNESCO.

- **Major Initiatives of UNESCO:**
  - **Man and Biosphere Programme**
  - **World Heritage Programme**
  - **Global Geopark Network**
  - **Network of Creative Cities**
  - **Atlas of World Languages in Danger**

- **Reports:**
  - UNESCO Science Report
  - Global Education Monitoring Report
  - **State of the Education Report for India**

Permanent Normal Trade Relations

Why in News?

US and other members of the **Group of Seven (G7)** will **revoke Russia's "Permanent Normal Trade Relations (Pntr)"** status to punish **Russia for war over Ukraine.**

- The move would pave the way for the **US to impose tariffs** on a wide range of Russian goods, heightening pressure on an economy on the **brink of deep recession.**

  - A recession is a period of **declining economic performance across an entire economy** that lasts for several months.

- The G7 is the group of developed western countries (**UK, Canada, France, Germany, Italy, Japan and the US)** established in 1975.

What is PNTR?

- The status of **Permanent Normal Trade Relations (PNTR)** is a **legal designation in the United States for free trade with a foreign nation.**

Note:

➢ In the United States, the name was changed from **Most Favored Nation (MFN)** to **PNTR in 1998.**

What is MFN Status?

➢ **World Trade Organization (WTO)** members **commit to treating other members equally** so they can all benefit from each other's lowest tariffs, highest import quotas and fewest trade barriers for goods and services.

○ This principle of non-discrimination is known as **Most Favoured Nation (MFN) treatment.**

○ This is **one of the measures which ensures trade without discrimination.** Another one is 'National Treatment'.

➢ Article 1 of the **General Agreement on Tariffs and Trade (GATT), 1994,** requires every WTO member country to accord MFN status to all other member countries.

➢ There are **some exceptions,** such as when members strike bilateral trade agreements or when members offer **developing countries special access to their markets.**

➢ For countries outside the WTO, such as **Iran, North Korea, Syria or Belarus,** WTO members can **impose whatever trade measures they wish without flouting global trading** rules.

➢ In international trade, MFN status (or treatment) is **awarded by one nation to another.**

○ For example, India accorded MFN status to all WTO member countries, including Pakistan, from the date of entry into force of the so called Marrakesh Agreement, establishing the WTO.

○ A nation with MFN status will not be discriminated against and **will not be treated worse than any other nation with MFN status.**

● Grant someone a special favour (such as a lower customs duty rate for one of their products) and you have to do the same for all other WTO members.

➢ There is **no formal procedure for suspending MFN treatment** and it is not clear whether members are obliged to inform the WTO if they do so.

○ **India suspended Pakistan's MFN status in 2019** after a suicide attack by a Pakistan-based Islamist group killed 40 police. Pakistan never applied MFN status to India.

What is National treatment?

➢ It means **treating foreigners and locals equally**.

➢ Imported and locally-produced goods should be treated equally — **at least after the foreign goods have entered the market.**

➢ The same should **apply to foreign and domestic services**, and to foreign and local trademarks, copyrights and patents.

➢ This principle of **"national treatment"** is also found in all the three main WTO agreements **(Article 3 of GATT, Article 17 of GATS and Article 3 of TRIPS).**

➢ National treatment only applies once a product, service or item of intellectual property has entered the market.

○ Therefore, charging customs duty on an import is not a violation of national treatment even if locally-produced products are not charged an equivalent tax.

What does losing MFN status mean?

➢ Revoking Russia's MFN status sends a strong signal that the United States and its Western allies **do not consider Russia a economic partner in any way,** but it does not in itself change conditions for trade.

➢ It does formally allow the Western allies to **increase import tariffs or impose quotas on Russian goods,** or even ban them, and to restrict services out of the country.

○ They **could also overlook Russian intellectual property rights.**

➢ Ahead of MFN status removal, the United States had already announced **a ban on imports of Russian oil and gas.**

➢ Further, the **European Union** has already **banned about 70% of all imports,** such as tobacco, potash and products made of wood or steel, from non-WTO member Belarus (Russia's ally in war with Ukraine).

■■■

Note:

Social Issues

Highlights

- *SAMARTH Initiative*
- *Maternal Mortality in India*
- *New Guidelines on Abortion Care by WHO*

SAMARTH Initiative

Why in News?

Recently, on the occasion of **International Women's Day** 2022, the Union Minister for **Micro, Small and Medium Enterprises (MSMEs),** launched a Special Entrepreneurship Promotion Drive for Women -"**SAMARTH**".

What is the SAMARTH Initiative?

➤ Under the Samarth initiative of the Ministry, following **benefits will be available to aspiring and existing women entrepreneurs:**

  ○ **20% Seats in free Skill Development Programs** organised under skill development schemes of the Ministry will be allocated for Women.

  ○ **20% of MSME Business Delegations** sent to domestic & international exhibitions under the schemes for Marketing Assistance implemented by the Ministry **will be dedicated to women owned MSMEs.**

  ○ **20% Discount on annual processing fee** on **National Small Industries Corporation'**s (NSIC) Commercial Schemes.

    ● **NSIC** is a Government of India Enterprise under the Ministry of MSME.

  ○ **Special Drive for registration of women-owned MSMEs** under **Udyam Registration.**

➤ Through this initiative, the Ministry of MSME is **focusing on providing Skill Development and Market Development Assistance to women.**

  ○ More than **7500 women candidates from rural and sub- urban areas will be trained** in the FY 2022-23.

  ○ Besides**, thousands of women will be getting marketing opportunities** to showcase their products in domestic and international exhibitions.

➤ Also, to enhance the participation of women entrepreneurs in **Public Procurement, a special discount of 20% shall also be offered** on annual processing fee on NSIC's following commercial schemes during the year 2022-23:

  ○ Single Point Registration Scheme

  ○ Raw Material Assistance and Bill Discounting

  ○ Tender Marketing

  ○ B2B Portal msmemart.com

What is International Women's Day?

➤ **About**:

  ○ It is celebrated annually on **8th March**. It includes:

    ● Celebration of women's achievements,

    ● Raising awareness about women's equality,

    ● Lobbying for accelerated gender parity,

    ● Fundraising for female-focused charities, etc.

➤ **Brief History:**

  ○ Women's Day was **first celebrated back in 1911** by Clara Zetkin, who was a German. The roots of the celebration had been in the labour movement.

  ○ It was only in 1913, however, that the celebrations were shifted to 8th March, and it has remained that way ever since.

  ○ International Women's Day was celebrated for the first time by the **United Nations (UN)** in 1975.

    ● In December 1977, the General Assembly **adopted a resolution proclaiming a UNs Day for Women's Rights and International Peace** to be observed on any day of the year by Member States, in accordance with their historical and national traditions.

Note:

➢ **2022 Theme:**
  ○ 'Gender equality today for a sustainable tomorrow'.

➢ **Related Data:**
  ○ According to the UN, legal restrictions have kept **2.7 billion women from accessing the same choice of jobs as men.**
    ● As of 2019, less than **25% of parliamentarians were women.**
    ● **One in three women experience gender-based violence**.
  ○ In 2019, before the **Covid-19 pandemic**, female labour force participation in India was 20.5%, according to **International Labour Organisation (ILO)** estimates. Comparable estimates for males was 76%.
  ○ In the **World Economic Forum's Global Gender Gap Index** (which measures progress towards gender parity), India is one of the worst performers in South Asia, it is now ranked **140 among 156 countries in 2021.**
  ○ As per the **National Family Health Survey (NFHS)-5,** as many as **57% women aged 15-49 were anaemic in 2019-21,** compared to 53% in 2015-16.

What are the Safeguards for Women in India?

➢ **Constitutional Safeguards:**
  ○ **Fundamental Rights**: It guarantees all Indians the right to equality **(Article 14)**, **no discrimination by the State on the basis of gender** (Article 15(1)) and special provisions to be made by the State in favour of women (Article 15(3)).
  ○ **Fundamental Duties**: The Constitution imposes a fundamental duty on every citizen through **Articles 51** (A)(e) to **renounce practices derogatory to dignity of women.**

➢ **Legislative Framework:**
  ○ **Protection of Women from Domestic Violence Act, 2005:** It provides victims of domestic violence with a means for practical remedy through prosecution.
  ○ **The Dowry Prohibition Act, 1961:** It prohibits the request, payment or acceptance of a dowry.
  ○ **The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013:** This legislative act seeks to protect women from sexual harassment at their place of work.

➢ **Related Schemes**: **Mahila e-haat**, Women Technology Park, **Gender Advancement for Transforming Institutions (GATI)**, etc.

Are there any World Conferences on Women?

➢ The UN has organised **4 world conferences on women.** These took place in
  ○ Mexico City, **1975**
  ○ Copenhagen, **1980**
  ○ Nairobi, **1985**
  ○ Beijing, **1995**

➢ The **4th World Conference on Women (WCW), held in Beijing,** was one of the largest ever gatherings of the UNs, and a critical turning point in the world's focus on gender equality and the empowerment of women.
  ○ The **Beijing Declaration** is an agenda for women's empowerment and considered the key global policy document on gender equality.
  ○ It **sets strategic objectives and actions for the advancement of women** and the achievement of gender equality in 12 critical areas of concern like women and health, women in power and decision-making, the girl-child, women and the environment.

➢ Recently, the **United Nations Development Programme (UNDP)** has proposed a **Temporary Basic Income (TBI)** for poor women in developing countries to help them cope with the effects of the coronavirus pandemic and alleviate the economic pressures they face every day.

Maternal Mortality in India

Why in News?

Recently, the **Registrar General of India**'s **Sample Registration System (SRS)** released the latest special bulletin on **Maternal Mortality in India (2017-19).**

➢ As per the **World Health Organisation,** maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management.

➢ **Maternal Mortality Ratio (MMR)** is defined as the number of maternal deaths during a given time per 1,00,000 live births during the same time.

Note:

What is the Registrar General of India?

➤ It is under the **Ministry of Home Affairs.**

➤ Apart from conducting the Population **Census** and monitoring the implementation of the Registration of Births and Deaths in the country, **it has been giving estimates on fertility and mortality using the Sample Registration System (SRS).**

➤ **SRS** is the **largest demographic sample survey in the country** that among other indicators provide direct estimates of maternal mortality through a nationally representative sample.

➤ Verbal Autopsy (VA) instruments are administered for the deaths reported under the SRS on a regular basis to **yield a cause-specific mortality profile in the country.**

Where does India Stand on MMR??

➤ The MMR of India has **declined by 10 points**. It has **declined from 113 in 2016-18 to 103 in 2017-19** (8.8 % decline).

➤ The country had been witnessing a **progressive reduction in the MMR** from 130 in 2014-2016, 122 in 2015-17, 113 in 2016-18, and to 103 in 2017-19.

  ○ India was on the verge of achieving the **National Health Policy (NHP)** target of 100/lakh live births by 2020 and certainly on track to achieve the **United Nations Sustainable Development Goals** target of **70/ lakh live births by 2030.**

➤ Many developed countries have successfully brought down MMR to single digits. **Italy, Norway, Poland and Belarus have the lowest MMR** of two, while it is seven in both Germany and the UK, 10 in Canada and 19 in the US.

➤ Most of **India's neighbours** — **Nepal** (186), **Bangladesh** (173) and **Pakistan** (140) — have a higher MMR. However, **China** and **Sri Lanka** are way ahead with MMRs of 18.3 and 36 respectively.
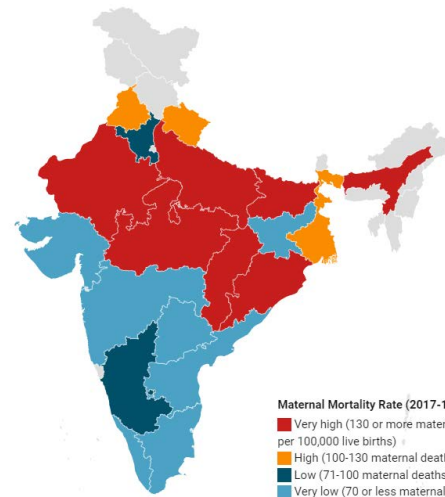
What are the State Specific Findings?

➤ The number of States that have achieved the SDG target has now risen from five to seven -- **Kerala** (30)**, Maharashtra** (38), **Telangana** (56), **Tamil Nadu** (58)**, Andhra Pradesh** (58)**, Jharkhand** (61)**, and Gujarat** (70**)**.

  ○ **Kerala** has recorded the **lowest MMR** which puts Kerala way ahead of the **national MMR of 103.**

  ○ Kerala's Maternal MMR has dropped by 12 points. The last SRS bulletin (2015-17) had put the State's **MMR at 42** (later adjusting it to 43).

➤ There are now nine States that have achieved the MMR target set by the NHP, which include the above seven and Karnataka (83) and Haryana (96).

➤ **Uttarakhand** (101), **West Bengal** (109), **Punjab** (114), **Bihar** (130), **Odisha** (136) and **Rajasthan** (141) -- have the MMR in between 100-150, while **Chhattisgarh** (160), **Madhya Pradesh** (163), **Uttar Pradesh** (167) and **Assam** (205) have the MMR above 150.

Seven states have very high maternal mortality

India's maternal mortality ratio (MMR) has improved from **113 in 2016-18** to **103 in 2017-19**. The ratio has worsened in **West Bengal, Haryana, Uttarakhand and Chhattisgarh.**

Maternal Mortality Rate (2017-19)
- Very high (130 or more maternal deaths per 100,000 live births)
- High (100-130 maternal deaths)
- Low (71-100 maternal deaths)
- Very low (70 or less maternal deaths)

MMR is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period. Sustainable Development Goals (target 3.1) says the global maternal mortality ratio should be less than 70 per 100,000 live births by 2030

What are some Related Government Initiatives?

➤ **Janani Suraksha Yojana** under the **National Health Mission** to link cash assistance to institutional deliveries.

➤ The **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provides a fixed day for assured, comprehensive and quality antenatal care free of cost to pregnant women on 9th of every month.

➤ **Pradhan Mantri Matru Vandana Yojana**, **Poshan Abhiyan** and **LaQshya Guidelines.**

Note:

New Guidelines on Abortion Care by WHO

Why in News?

Recently, the **World Health Organization (WHO)** presented new guidelines on abortion care. These, it claimed, would **prevent more than 25 million unsafe abortions annually.**

➢ The new guidelines include recommendations on **many simple interventions at the primary care level** that improve the quality of abortion care provided to women and girls.

➢ The new guidelines will **support interested countries to implement and strengthen national policies and programmes related to contraception, family planning and abortion** services, helping them to provide the highest standard of care for women and girls.

What is the Global Status of Abortions?

➢ Globally, between **13,865 and 38,940 lives are lost yearly due to the failure to provide safe abortion**.
  ○ **Developing countries** bear the burden of 97% of unsafe abortions.

➢ The **proportion of abortions that are unsafe is also significantly higher in countries with highly restrictive abortion laws** than in those with less restrictive laws.

➢ **Over half (53.8%) of all unsafe abortions occur in Asia,** the majority of those in south and central Asia. A quarter **(24.8%) occur in Africa,** mainly in eastern and western Africa and a fifth **(19.5%) in Latin America and the Caribbean.**

➢ Abortion rates were **highest in low-income countries with the most legal restrictions to abortion care.**

➢ There was also an **increase of 12% in the number of abortions in countries with legal restrictions on the procedure,** while it declined slightly in countries where abortion is broadly legal.

What are the New Guidelines by the WHO?

➢ **Task Sharing:**
  ○ These include **task sharing by a wider range of health workers; ensuring access to medical abortion pills,** which mean more women can obtain safe abortion services and making sure that accurate information on care is available to all those who need it.

➢ **Telemedicine:**
  ○ It also includes the recommendations for the **use of telemedicine,** which helped support access to abortion and family planning services during the **Covid-19 pandemic.**

➢ **Removing Political Barriers:**
  ○ It also recommend **removing medically unnecessary political barriers to safe abortion**, such as criminalisation, mandatory waiting periods before receiving a requested abortion, third-party authorisation for abortion, restrictions on which health workers can provide abortion services.
  ○ Such **barriers can lead to critical delays** in accessing treatment and put women and girls at greater risk of unsafe abortion, stigma and health complications, while increasing barriers to education and their ability to work.
    ● R**estricting access to abortions does not reduce the number of abortions that take place**. In fact, restrictions are more likely to push women and girls into unsafe practices.

➢ **Providing Enabling Environment:**
  ○ A person's environment plays a crucial role in shaping their access to care and influencing their health outcomes.
  ○ An **enabling environment is the foundation of quality comprehensive abortion care.**
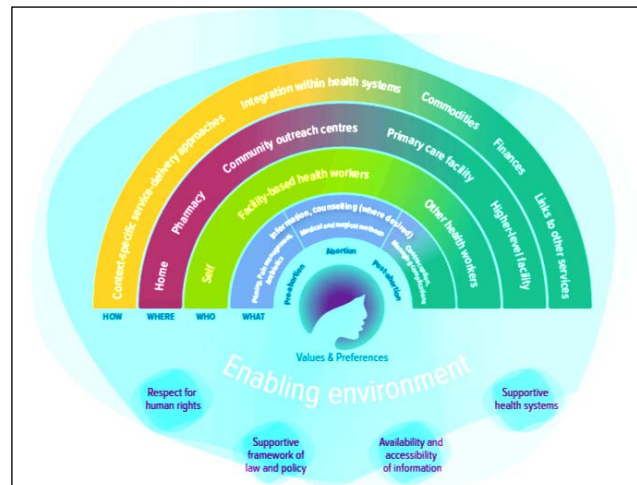
  ○ The three **cornerstones** of an enabling environment for abortion care **are:**
    ● Respect for human rights including a supportive framework of law and policy.

Note:

- Availability and accessibility of information.
- A supportive, universally accessible, affordable and well functioning health system.

What are the Steps Taken by the Indian Government for Safe Abortions?

➢ The Government provides safe and **Comprehensive Abortion Care (CAC)** services to women in health facilities unde**r RMNCH+A** (Reproductive, Maternal, Newborn, Child and Adolescent Health) program of **National Health Mission.**

➢ **Capacity Building of Medical officers** in Safe Abortion Techniques and of Auxiliary Nurse Midwife workers, **Accredited Social Health Activist (ASHA)** and other functionaries to provide confidential counseling for safe abortion and promote post-abortion care.

➢ **Certification to private and Non-governmental Organizations (NGOs)** sector facilities to provide quality Comprehensive Abortion Care services.

➢ Supply of **Nischay Pregnancy detection kits** to sub-centers for early detection of pregnancy.

➢ **Medical Termination of Pregnancy (MTP) Amendment Act, 2021** expands the access to safe and legal abortion services on therapeutic, eugenic, humanitarian and social grounds to ensure universal access to comprehensive care.

■■■

Note:

Science & Technology

Highlights

- New Lunar Crater
- Zaporizhzhia Nuclear Powerplant: Ukraine
- Russia withdrawing Support from International Space Station
- Supercomputer PARAM Ganga: NSM

- Low-Energy Chip to Prevent Side Channel Attacks
- Cluster Bombs and Thermobaric Weapons
- Kavach: Automatic Train Protection System

New Lunar Crater

Why in News?

Recently, a **leftover piece of a spacecraft flying (of Chang'e 5-T1 – a lunar mission of China)** through space reportedly hit the surface of the moon **creating a new crater that may be around 65 feet wide.**

➢ This is the **first recorded unintentional case of space junk** hitting the moon.

➢ The speed, trajectory, and time of impact were calculated using earth-based telescope observations called **Project Pluto.**

➢ **Project Pluto** is a blog that tracks near-earth objects, which was created by American astronomer Bill Gray. He is also the creator of a popular astronomy software called Guide.

What is Space Junk?

➢ **About:** Space debris, also called space junk, artificial material that is orbiting Earth but is no longer functional.

   ❍ This material can be as large as a discarded rocket stage or as small as a microscopic chip of paint.

➢ **Location:** Much of the debris is in low Earth orbit, within 2,000 km of Earth's surface, though some debris can be found in geostationary orbit 35,786 km above the Equator.

➢ **Issue (Kessler Syndrome) :** The free floating space debris is a potential hazard for operational satellites and colliding with them can leave the satellites dysfunctional.

   ❍ This is referred to as **Kessler Syndrome,** named after NASA scientist Donald Kessler in 1978.

   ❍ It says if there is too much space junk in orbit, it could result in a **chain reaction where more and more objects will collide and create new space junk in the process,** to the point where Earth's orbit becomes unusable – a Domino Effect.

   ❍ With countries launching more and more satellites, each one of them being a strategic or commercial asset, avoiding collisions could become a challenge in the future.

➢ **Solution: Clearspace-1 (of European Space Agency),** which is scheduled to launch in 2025, will be the first space mission to eliminate debris from orbit.

What are Lunar Craters?

➢ Lunar Craters are bowl-shaped landforms **created by Volcanism and Cratering, about 4.5 billion years ago, shortly after Earth was formed.**

➢ There are hundreds of thousands of moon craters ranging from less than a mile across to giant basins.

Note:

➢ The **largest crater on the Moon is called South Pole-Aitken Basin.**

➢ Further, throughout its existence, the Moon has been bombarded by comets and asteroid chunks, and those created the many impact craters we see today.

➢ Moon's lack of water, atmosphere, and tectonic plates, there is little erosion, and craters are found that exceed two billion years in age.

➢ **Mitra Crater on Moon** is named after Indian radio physicist Sisir Kumar Mitra.

What is the Difference between Craters on the Moon and Earth?

➢ Both the earth and the moon have been hit by multiple objects like asteroids throughout their existence, but craters on the moon are of a more permanent nature than those on earth.

➢ This is because of processes like erosion, tectonics, and volcanism.

➢ According to NASA, these three processes keep the surface of the earth crater-free and remove traces of collisions that have happened in the past.

➢ Currently, the earth has less than 200 known craters while the moon has thousands.

➢ An absence of atmosphere means there is no wind system and no weather on the moon, and hence no cause for erosion of existing craters.

➢ The absence of tectonics prevents the moon's surface from forming new rocks or causing a shift in the existing surface patterns, unlike that on earth.

➢ Lastly, the absence of volcanism (in recent history) makes it impossible for craters to be covered.

Zaporizhzhia Nuclear Powerplant: Ukraine

Why in the News?

Recently, Russian forces **seized the Zaporizhzhia Nuclear Powerplant,** the largest nuclear power plant in Europe.

➢ The developments at the plant triggered an emergency meeting of the **UN Security Council.**

How much of Ukraine does Russia control?

■ Area under Russian control
□ Russia annexed Crimea in 2014

Where is the Zaporizhzhia Nuclear Powerplant Located?

➢ It is located on the banks of the **Dnieper river**, just 200 kilometres from the conflicted **Donbas region** where Russian-backed separatists and Ukrainian forces have been fighting.

➢ Zaporizhzhya is **one of the four operating NPPs** in the country and has been operating since 1984.

  ○ It accounts for about **40% of the total electricity generated** by all the Ukrainian NPPs and **one-fifth of Ukraine's annual electricity production.**

➢ The Zaporizhzhya NPP **consists of six Pressurised Water Reactor (PWR) units** commissioned between 1984 and 1995, with a gross electrical capacity of 1,000MW each.

What is a Pressurized Water Reactor?

➢ It is a type of **light water reactor that uses ordinary water as the moderator and coolant.**

➢ The PWR plant is the **most common type of nuclear power reactor in the world.**

  ○ The Pressurised Heavy Water Reactors (PHWRs) are fuelled by Natural Uranium while Light Water Reactors (LWRs) are fuelled by Low Enriched Uranium.

➢ **A PWR has two water systems:**

  ○ One is called the **reactor (primary) system** that retrieves heat generated in the reactor, and the other is called the **turbine (secondary) system** that produces electric power with steam generated by that heat.

Note:

What are the related Concerns?

➢ Attacks on nuclear power facilities run counter to **international humanitarian law,** specifically, **Article 56 of Additional Protocol I to the Geneva Conventions.**

   ○ **Additional Protocol I of the Convention:** Protection of works and installations containing dangerous forces.

➢ The **Chernobyl disaster in 1986** also is a reminder of why it is vital to ensure all nuclear power plants have the highest standards of safety and security.

What was the Chernobyl Disaster?

➢ The **Chernobyl accident in 1986** was the **result of a flawed reactor design** that was operated with inadequately trained personnel.

➢ The resulting **steam explosion and fires released at least 5% of the radioactive reactor core** into the environment, with the deposition of radioactive materials in many parts of Europe.

➢ The disaster was a **unique event and the only accident** in the history of commercial nuclear power where **radiation-related fatalities occurred.**

➢ Two Chernobyl plant workers died due to the explosion on the night of the accident, and a further 28 people died within a few weeks as a result of acute radiation syndrome.

➢ Some **350,000 people were evacuated** as a result of the accident, but **resettlement of areas** from which people were **relocated is ongoing.**

What about the Nuclear Power Plants in India?

➢ Nuclear energy is an **important component of the country's energy mix** and is being pursued along with other sources of energy in an optimal manner.

   ○ It is a clean, environment friendly base load source of power available 24X7.

   ○ It also **has huge potential which can ensure long term energy security of the country** in a sustainable manner.

➢ There are **presently 22 reactors with a total capacity of 6780 MW in operation** and one reactor, KAPP-3 (700 MW) was connected to the grid in January 2021.

➢ The Government has **accorded administrative approval and financial sanction** for construction of 12 nuclear power reactors - **10 indigenous 700 MW Pressurized Heavy Water Reactors (PHWRs)** to be set up in fleet mode & **2 units of Light Water Reactors (LWRs)** to be set up in cooperation with Russian Federation.

➢ On progressive completion of the projects under construction and accorded sanction, the **nuclear capacity is expected to reach 22480 MW by 2031.**

➢ The Government has also accorded **'In-Principle' approval for five new sites** for locating nuclear power plants in future.

➢ In India, some nuclear reactors are kept under "**IAEA (International Atomic Energy Agency)** safeguards".

   ○ The nuclear facilities are kept under IAEA) safeguards if the source of Uranium, which is the fissile material for a nuclear reactor, is from outside the territory of India or if the new reactor plants are established with foreign collaboration.

   ○ This is to ensure that imported uranium was not diverted for military use and to assure that the imported uranium is used to generate nuclear energy for civilian purposes.

Nuclear Power plants in Operation	Nuclear Power Plants under Construction	Planned Nuclear Power Plants
▪ Rawatbhata (Rajasthan)	▪ Kakrapar 3&4 (Gujarat)	▪ Jaitapur (Maharashtra)
▪ Tarapur (Maharashtra)	▪ Rawatbhata (Rajasthan)	▪ Kovvada (Andhra Pradesh)
▪ Kudankulam (Tamil Nadu)	▪ Kudankulam 3&4 (Tamil Nadu)	▪ Mithi Virdi (Gujarat)
▪ Kakrapar (Gujarat)	▪ Kalpakkam PFBR (Tamil Nadu)	▪ Haripur (West Bengal)
▪ Kalpakkam (Tamil Nadu)		▪ Gorakhpur (Haryana)
▪ Narora (Uttar Pradesh)		▪ Bhimpur (Madhya Pradesh)
▪ Kaiga (Karnataka)		▪ Mahi Banswara (Rajasthan)
		▪ Kaiga (Karnataka)
		▪ Chutka (Madhya Pradesh)
		▪ Tarapur (Maharashtra)

Russia withdrawing Support from International Space Station

Why in News?

Recently, after **Russia invaded Ukraine,** the **US imposed sanctions on Russia** including a ban on transfer **of technology and on Russian banks.**

➢ Following this, the **Russian space agency Roscosmos** held that the State Corporation will not cooperate with Germany on joint experiments in the Russian segment of the **International Space Station (ISS).**

Note:

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What is Russia's role in maintaining the ISS?

➤ The ISS is built with the cooperation of scientists from **five international space agencies — NASA of the US, Roscosmos of Russia, JAXA of Japan, Canadian Space Agency and the European Space Agency.**

➤ **Each agency has a role to play and a share in the upkeep of the ISS**. Both in terms of expense and effort, it is not a feat that a single country can support.

➤ Russia's part in the collaboration is the **module responsible for making course corrections to the orbit of the ISS.**

➤ Further, the Russian segment ensures that the **space station's orbit is corrected to keep it away from space debris**, **roughly 11 times a year**.

➤ It also ferry astronauts to the ISS from the Earth and back.

What could be the impact of Russia's Withdrawal?

➤ Due to its enormous weight and the ensuing drag, the ISS **tends to sink from its orbit at a height of about 250 miles above the Earth.**

  ○ It has to be **pushed up to its original line of motion every now and then.**

➤ Russia's withdrawing from its segment of the ISS cooperation spacecraft **could affect correcting the orbit of the ISS.**

  ○ This meant the ISS could fall into the sea or on the land.

➤ ISS would likely **crash down on some country, but most probably not Russia itself.** The orbit of the ISS does not fly over Russian territory mostly.

➤ However, dropping of ISS poses a **greater risk to regions that are closer to the equator.** But this is only a probability, as it can move or disintegrate.

  ○ In case of this eventuality, people in the ISS will be brought back, modules can be detached thereby making it much smaller which will ensure that it disintegrates before touching the earth.

What is the International Space Station (ISS)?

➤ The ISS is the most c**omplex international scientific and engineering projec**t in history and the largest structure humans have ever put into space.

➤ This **high-flying satellite** is a laboratory for new technologies and an **observation platform for astronomical, environmental and geological research.**

➤ As a permanently **occupied outpost in outer space**, it serves as a stepping stone for further space exploration.

➤ The space station flies at an **average altitude of 400 kilometers above Earth**. It circles the globe every 90 min. at a speed of about 28,000 kph.

➤ In one day, the **station travels about the distance it would take to go from Earth to the moon and back.**

➤ The space station can rival the **brilliant planet Venus in brightness** and appears as a **bright moving light across the night sky.**

➤ It can be seen from Earth without the use of a telescope by night sky observers who know when and where to look.

➤ Five different space agencies representing 15 countries built the **USD 100-billion International Space Station and continue to operate it today.**

➤ The International Space Station was taken into space piece-by-piece and gradually built in orbit.

  ○ It consists of modules and connecting nodes that contain living **quarters and laboratories, as well as exterior trusses that provide structural support, and solar panels that provide power.**

  ○ The first module, **Russia's Zarya module,** launched in 1998.

➤ The first space station crews were three-person teams, though after the t**ragic Columbia shuttle disaster** the crew size temporarily dropped to two-person teams.

➤ The space station reached its full six-person crew size in 2009 as new modules, laboratories and facilities were brought online.

➤ Current plans call for the space station to be operated through at least 2020. NASA has **requested an extension until 2024.**

Are there any substitutes for Russia?

➤ There are right now two possibilities. **SpaceX's dragon module** and **Boeing's Starliner** can dock with the ISS.

➤ Until SpaceX's dragon spacecraft came into the picture the Russian spacecrafts were the only way of reaching the ISS and returning.
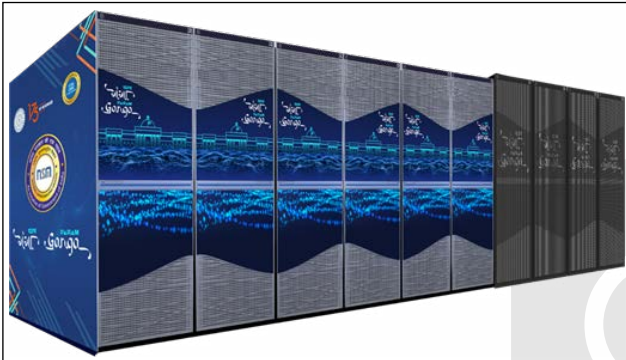
Note:

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Supercomputer PARAM Ganga: NSM

Why in News?

The **National Supercomputing Mission (NSM)** has deployed **PARAM Ganga-a High-Performance Computational (HPC) facility at IIT Roorkee**, with a supercomputing capacity of **1.66 Petaflops.**

➢ Earlier, the Indian Institute of Science (IISc) Bengaluru installed the **supercomputer 'Param Pravega'.**

What are the Key Points?

➢ It has been established by the **Centre for Development of Advanced Computing (C-DAC)** under the approach of **NSM.**

➢ The basic idea behind building a Petascale Supercomputer with manufactured in India components is **to lead the path towards Aatmanirbhar Bharat and accelerate the problem-solving capacity** in multidisciplinary domains simultaneously.

  ○ It will aid researchers to solve complex problems of national importance and global significance.

➢ It will serve as an essential computer environment for the modern-day research along with their theoretical and experimental work.

➢ The focus is **to provide computational power to the user community of IIT Roorkee and neighbouring academic institutions.**

What is a Supercomputer?

➢ A supercomputer is a computer **that performs at or near the currently highest operational rate** for computers.

➢ Generally, PETAFLOP is a measure of a Supercomputer's processing speed and can be expressed as a thousand trillion floating point operations per second.

  ○ FLOPS (floating point operations per second) are typically used to measure the performance of a computer's processor.

  ○ Using floating-point encoding, extremely long numbers can be handled relatively easily.

➢ Supercomputers are **primarily designed to be used in enterprises and organizations** that require massive computing power.

  ○ For example: weather forecasting, scientific research, intelligence gathering and analysis, data mining etc.

➢ Globally, **China has the maximum number of supercomputers** and maintains the top position in the world, followed by the US, Japan, France, Germany, Netherlands, Ireland and the United Kingdom.

➢ India's **first supercomputer was PARAM 8000.**

➢ **PARAM Shivay, the first supercomputer assembled indigenously,** was installed in IIT (BHU), followed by **PARAM Shakti, PARAM Brahma, PARAM Yukti, PARAM Sanganak** at IIT-Kharagpur, IISER, Pune, JNCASR, Bengaluru and IIT Kanpur respectively.

➢ In 2020, **PARAM Siddhi,** the High-Performance Computing-Artificial Intelligence (HPC-AI) supercomputer, achieved global ranking of 62nd in Top 500 most powerful supercomputer systems in the world.

What is the National Supercomputing Mission?

➢ In 2015, the National Supercomputing Mission was launched **to enhance the research capacities and capabilities in the country** by connecting them to form a Supercomputing grid, with **National Knowledge Network (NKN)** as the backbone.

  ○ The NKN project is aimed **at establishing a strong and robust Indian network which will be capable of providing secure** and reliable connectivity.

➢ The Mission **plans to build and deploy 24 facilities with cumulative compute power of more than 64 Petaflops**.

  ○ Till now C-DAC has deployed 11 systems at IISc, IITs, IISER Pune, JNCASR, NABI-Mohali and C-DAC under NSM Phase-1 and Phase-2 with a cumulative compute power of more than 20 Petaflops.

Note:

- It supports the government's vision of **'Digital India' and 'Make in India' initiatives**.
- The Mission is being jointly steered by the Department of Science and Technology (DST) and the Ministry of Electronics and Information Technology (MeitY).
  - It is implemented by the Center for Development of Advanced Computing (C-DAC), Pune, and the IISc, Bengaluru.
- The mission was planned in three phases:
  - **Phase I** looking at assembling supercomputers,
  - **Phase II** looking at manufacturing certain components within the country.
  - **Phase III** where a supercomputer is designed by India.
- **An indigenously developed server platform called 'Rudra'** is being tried out in a pilot system, **with an interconnect for inter node communication called Trinetra** also having been developed.

Low-Energy Chip to Prevent Side Channel Attacks

Why in News

Recently, two Indian researchers have built a **low-energy security chip** that is designed to prevent **Side-Channel Attacks (SCAs) on IoT (Internet of Things) devices**.

- IoT is a computing concept **that describes the idea of everyday physical objects being connected to the internet** and being able to identify themselves to other devices.
- It is being used to **create smart infrastructure in various verticals** such as Power, Automotive, Safety & Surveillance, Remote Health Management, Agriculture, Smart Homes and Smart Cities etc, using connected devices.
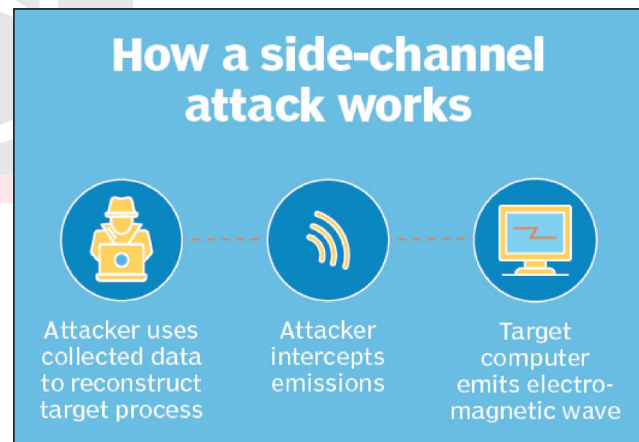
What is a Security Chip?

- Security Chip means the **application specific integrated circuit** that **instantiates the Security Feature** after being embedded in the device.

What is SCA?

- A SCA is **a security exploit that aims to gather information** from or influence the program execution of a system by **measuring or exploiting indirect effects of the system or its hardware** -- rather than targeting the program or its code directly.

- Typically, SCAs aim to **extract sensitive information like cryptographic keys, proprietary machine learning models and parameters** by measuring things like timing information, power consumption and electromagnetic leaks of a system.
  - An SCA **may also be referred to as a sidebar attack** or an implementation attack.
  - It can be applied to any data that you want to keep secret.
    - **For example,** it can be used on your smartwatch to extract your ECG and heart rate signal,"
  - **Types of SCAs:** Timing attack, Electromagnetic (EM) attack, Acoustic, Power, Optical, memory Cache, hardware weaknesses.
- Even though SCAs are difficult to execute on most modern systems, the increasing sophistication of machine learning algorithms, greater computing power of devices and measuring devices with increasing sensitivities are making SCAs more of a reality.

How a side-channel attack works

Attacker uses collected data to reconstruct target process — Attacker intercepts emissions — Target computer emits electro-magnetic wave

What is the Significance of New Architecture?

- **Uses Much Less Power:**
  - Since SCAs are difficult to detect and defend against, countermeasures against them have notoriously been very computing power and energy-intensive. This is where the new chip architecture comes in.
  - The **chip is smaller than the size of a thumbnail and uses much less power than traditional security measures against SCAs**.
- **Easily be Incorporated:**
  - It has been built to be **easily incorporated into smartwatches, tablets, and a variety of other devices.**

Note:

○ It can be used in any sensor node which connects user data. For example, **it can be used in monitoring sensors in the oil and gas industry**, it can be used in self-driving cars, in fingerprint matching devices and many other applications.

➢ **Near-Threshold Computing help reveal nothing:**

○ The chip uses near-threshold computing, **a computing method where the data to be worked on is first split into separate, unique and random components.** The chip then conducts operations separately on each component in a random order before aggregating the results for a final result.

○ Due to this method, the **information leak from the device through power-consumption measurements are random and would reveal nothing but gibberish in an SCA**.

● However, this method is energy and computation power-intensive while also requiring more system memory to store information.

What are the Issues?

➢ The implementation of this chip architecture in a system would require **at least a five-fold increase in energy consumption** 1.6 times the silicon area of an insecure implementation.

➢ Also, the architecture **only protects against energy consumption-based SCAs** and doesn't defend against electromagnetic SCAs.

Cluster Bombs and Thermobaric Weapons

Why in News?

Human rights groups **Amnesty International and Human Rights Watch** accused Russia of using cluster bombs and vacuum bombs in the **ongoing war (on Ukraine).**

➢ Amnesty International said **international humanitarian law prohibits the use of inherently indiscriminate weapons** such as cluster munitions. Launching indiscriminate attacks **that kill or injure civilians constitutes a war crime.**

➢ International humanitarian law is **a set of rules that seek to limit the effects of armed conflict.** It protects people who are not or are no longer participating in hostilities and restricts the means and methods of warfare.

What are cluster munitions?

➢ A **cluster munition means a "conventional munition that is designed to disperse or release explosive submunitions** each weighing less than 20 kilograms, and includes those explosive submunitions".

➢ Essentially, cluster munitions are **non-precision weapons that are designed to injure or kill human beings indiscriminately over a large area**, and to destroy vehicles and infrastructure such as runways, railway or power transmission lines.

➢ They can be dropped **from an aircraft or launched in a projectile** that spins in flight, scattering many bomblets as it travels.

➢ Many of these bomblets end up not exploding, but continue to lie on the ground, often partially or fully hidden and difficult to locate and remove, posing a threat to the civilian population for long after the fighting has ceased.

➢ The **Convention on Cluster Munitions** specifically identifies "cluster munition remnants", which include "failed cluster munitions, abandoned cluster munitions, unexploded submunitions and unexploded bomblets"

What is a thermobaric weapon?

➢ Thermobaric weapons — also known **as aerosol bombs, fuel air explosives, or vaccum bombs** — use oxygen from the air for a large, high-temperature blast.

➢ A thermobaric weapon causes **significantly greater devastation than a conventional bomb** of comparable size.

➢ The weapons, which go off in two separate stages, can be fired as rockets from tank-mounted launchers or dropped from aircraft.

➢ As they hit their target, a first explosion splits open the bomb's fuel container, releasing a cloud of fuel and metal particles that spreads over a large area.

➢ A second explosion then occurs, igniting the aerosol cloud into a giant ball of fire and sending out intense blast waves that can destroy even reinforced buildings or equipment and vaporize human beings.

Note:

What is the Convention on Cluster Munitions?

➢ The Convention on Cluster Munitions is a **United Nations-adopted legal instrument that prohibits all use**, production, transfer and stockpiling of cluster munitions.

➢ It establishes **a framework for cooperation and assistance to ensure adequate assistance to survivors and their communities**, clearance of contaminated areas, risk reduction education and destruction of stockpiles.

➢ It was adopted in Dublin, Ireland in 2008, and was opened for signature in Oslo, Norway. It e**ntered into force in 2010 after the requirement of 30 ratifications** was complete.

➢ Currently, the convention has 110 State Parties and 13 Signatory States.

➢ Countries that ratify the convention are obliged to never use cluster munitions, and also to never develop, produce, otherwise acquire, retain, stockpile or transfer to anyone cluster munitions.

➢ **India has not signed the convention and is not a party to it.** Other countries that are not parties are the **US, Russia, China, Pakistan and Israel, among others.**

  ❍ **Vacuum bombs are not prohibited by any international law or agreement,** but their use against civilian populations in built-up areas, schools or hospitals, could attract action under the **Hague Conventions of 1899 and 1907.**

  ❍ Hague Convention is any of **a series of international treaties that were issued from international conferences** held at The Hague in the Netherlands in 1899 and 1907. They **establish the laws and customs of war in the strict sense,** by defining the rules that belligerents must follow during hostilities.

Kavach: Automatic Train Protection System

Why in News?

Recently, the Indian Railways tested **'Kavach'- Automatic Train Protection System** by making two trains move towards each other at full speed.

➢ The Kavach system was announced in the **2022 Union Budget** as a part of the **Atmanirbhar Bharat initiative**. Around 2,000 km of rail network is planned to be brought under the indigenous system **to enable safety and capacity augmentation** in 2022-23.

What is Kavach?

➢ It is India's own **automatic protection system**, which is in development since 2012, under the name **Train Collision Avoidance System (TCAS)**, which got rechristened **Kavach or "armour".**

➢ It is a set of **electronic devices and Radio Frequency Identification (RFID) devices** installed in locomotives, in the signalling system as well as the tracks.

➢ They connect to each other **using ultra high radio frequencies to control the brakes** of trains and also alert drivers, all **based on the logic programmed into them.**

  ❍ TCAS or Kavach **includes the key elements from already existing, and tried and tested systems** like the European Train Protection and Warning System, and the indigenous Anti Collision Device.

  ❍ It will also carry features of the **high-tech European Train Control System Level-2 in future.**

TCAS - System configuration
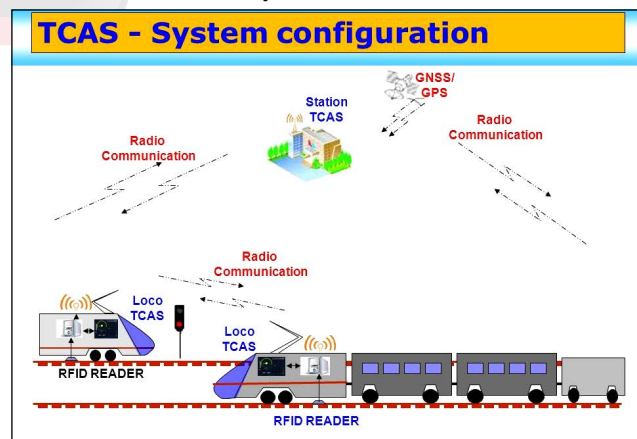
➢ The current form of Kavach adheres to the highest level of safety and reliability standard called **Safety Integrity Level (SIL)4.**

  ❍ **SIL** comes from two voluntary standards used by plant owners/operators **to quantify safety performance requirements for hazardous operations.**

  ❍ There are four SIL Levels (1-4). A higher SIL Level means **a greater process hazard and a higher level of protection required**.

Note:

- ➢ In the **new avatar, India wants to position Kavach as an exportable system**, a cheaper alternative to the European systems in vogue across the world.
- ➢ While now Kavach uses **Ultra High Frequency**, work is on to make it compatible with **4G Long Term Evolution (LTE)** technology and make the product for global markets.
- ➢ Work is on to make the system such that it can be compatible with other already installed systems globally.

What is the Significance?

- ➢ **Safety**:
  - ○ The Kavach system will help **prevent accidents on rail tracks like collision of trains.**
  - ○ Once the system is activated, all trains within a 5-km range will halt to **provide protection for trains on adjacent tracks.**

- ● Currently, the loco-pilots or assistant loco-pilots have to look out for caution signs and signals.
- ➢ **Cost:**
  - ○ It will only cost Rs 50 lakh per kilometre to operate in comparison to about Rs 2 crore worldwide.
- ➢ **Communication:**
  - ○ It will also include stationary equipment to gather signalling inputs and relay them to a central system to **enable seamless communication with the train crew and stations.**

What are the Initiatives Related to Railways?
- ➢ **Overhead Traction System**
- ➢ Railway Energy Management Company Limited
- ➢ **Transit Oriented Development**
- ➢ **National Rail Transportation Institute**

Note:

Environment & Ecology

Highlights

- *Nuclear Waste Facility at the Kudankulam*
- *State of India's Environment Report 2022: CSE*
- *World Wildlife Day*
- *IPCC: Part Two of Sixth Assessment Report*

- *Fifth Session of the United Nations Environment Assembly*
- *Wet Bulb Temperature*
- *Amazon Rainforest Nearing Tipping Point*

Nuclear Waste Facility at the Kudankulam

Why in News?

Recently, the **Kudankulam Village Panchayat** has passed a resolution against the construction of the **'Away From Reactor (AFR) facility** at the **Kudankulam Nuclear Power Project (KKNPP)** site for storing **nuclear waste.**

➢ Earlier, the state government (Tamil Nadu) had **also opposed such construction.**

➢ The village panchayat is of the view that the AFR site would lead to **radioactive pollution (spread of radioactivity)** and **spoil the groundwater,** which is used for drinking water and irrigation.

What is an AFR site?

➢ The scheme for the storage of spent fuel in a nuclear power plant is **two-fold:**

○ One facility is located within the **reactor building/ service building**, generally known as the **spent fuel storage pool/bay.**

○ Another is located away from the reactor, called the **Away From Reactor (AFR)** Spent Fuel Storage Facility**, but within the plant's premises.**

➢ The spent fuel storage pool inside the reactor building has a **limited capacity** and is **used for immediate storage of the spent fuel** removed from the **reactor during refueling.**

➢ The fuel remains in the pool initially for a few years for it to be c**ooled sufficiently before it is shifted to the facility.**

➢ The AFR Spent Fuel Storage Facility is functionally similar to the 'Spent Fuel Pool' inside the reactor building, **except in terms of capacity.**

What are the Arguments of the Union Government?

➢ The proposed AFR facility at KKNPP reactors 1 and 2 is for storage of **spent fuel only and not for storage of nuclear waste, as perceived by a few.**

➢ The design ensures that there **would not be any adverse impact of the facility** on the personnel, the public and the environment.

➢ The radiation dose on account of AFR to the **public would be negligible,** even [when] compared to the **exposure from natural radiation** background sources like soil, sun etc.

➢ This has been established at the T**arapur and Rawatbhata sites, where AFRs** have been in operation for many years.

Note:

What is Radioactivity?

➢ Radioactivity is the phenomenon of **spontaneous emission of particles** or waves from the **unstable nuclei of some elements.**

➢ There are three types of radioactive emissions: **Alpha, Beta and Gamma.**

○ **Alpha particles are positively charged** He (Helium) atoms, **beta particles are negatively charged electrons** and **gamma rays are neutral electromagnetic radiations.**

➢ Radioactive elements are naturally found in the earth's crust.

○ **Uranium, thorium and actinium** are **three NORM (Naturally Occurring Radioactive Materials)** series that contaminate water resources.

➢ A small amount of radiation is found in nature **but the extended amount of radiation is harmful to human health.**

➢ Radioactivity is measured in **Becquerel (SI unit) or in Curie.**

What are Sources of Radioactivity?

➢ **Natural:**

○ **Radiotoxic Elements in Aquatic System:** Radium, a descendant of the NORM series, is **one of the radiotoxic elements** found in aquatic systems and can be penetrated into groundwater via:

● aquifer rock dissolution

● decaying of 238U and 232Th,

● desorption processes.

● Radium is a radionuclide formed by the decay of uranium (U) and thorium (Th) in the environment.

○ **Magma:** Sometimes, magma also releases radioactive gases into the environment.

○ **Soil Sediments:** Percolation of NORM from the soil sediments to the aquifer causes groundwater contamination.

○ **Atmospheric Deposition of Cosmogenic Radionuclides:**

● Atmospheric deposition (both dry and wet) of cosmogenic radionuclides add radioactive nuclei in the surface water.

● Cosmogenic radionuclides are **radioactive isotopes** which are produced by natural processes and distributed within the Earth system.

➢ **Anthropogenic:**

○ **Nuclear Reactors and Warheads:**

● Nuclear reactors and nuclear warhead experiments are the key sources of human-induced radionuclides discharge.

● Nuclear reactors produce **radioisotopes (Cobalt-60, Iridium-192, etc)** that hand out as sources of gamma radiation in radiotherapy and numerous industrial appliances.

● Nuclear power plants placed at the coastal regions **add to the radiological contaminants in the marine water by releasing atomic wastes.**

■ Water is also used as coolants in these powerhouses, which also get contaminated.

○ **Dumping of Radioactive Waste:**

● The application of radioactive elements in **nuclear weapons, X-rays, MRI and other medical equipment** causes their exposure to human beings. Dumping of these radioactive wastes in surface water bodies causes water pollution.

○ **Mining:**

● Mining activities of radioactive elements like uranium and thorium also pollute surface and groundwater.

○ **Nuclear Accidents:**

● Radioactive pollution due to nuclear submarine accidents and sinking have been reported.

● The **Rocky Flats plant in Colorado, Fukushima and the Chernobyl nuclear disaster** are some examples of such nuclear accidents.

What are the effects of radioactive pollution on Health?

➢ **Radiation Syndrome:**

○ Human tissues absorb radiation through polluted water and foodstuff, which can cause serious health risks.

○ High doses of radiation can cause acute radiation syndrome or dermal radiation injury.

➢ **Disorders in Human Physiology:**

○ Exposure to radiation causes various disorders in human physiology, including cancer, leukemia, genetic mutations, cataracts, etc.

➢ **Mutation and Structural Alteration:**

Note:

○ Genetic effects ionizing radiation induces mutations in germ cells (male sperm cells and female egg cells), resulting in structural alteration in germ cell DNA that is passed onto offspring.

○ **Hereditary disorders** can lead to premature death and severe mental illness.

State of India's Environment Report 2022: CSE

Why in News?

Recently, the **Centre for Science and Environment (CSE)**, released the **State of India's Environment Report** 2022.

➢ The report is the **annual publication of the Centre for Science and Environment, and Down To Earth** (magazine).

➢ The report **focuses on climate change,** migration, health and food systems. It also covers biodiversity, forest and wildlife, energy, industry, habitat, pollution, waste, agriculture and rural development.

➢ CSE is a **public interest research and advocacy organisation** based in New Delhi.

Where does India Stand on Achieving its National Targets?

➢ **Economy**: The target for the economy is to raise the **Gross Domestic Product (GDP)** to nearly USD 4 trillion by 2022-23. **But by 2020, the economy has grown only to USD 2.48 trillion**.

○ The economy has largely shrunk during the **Covid-19 pandemic**, making it even more difficult to meet the deadline.

➢ **Employment**: The target is to increase the **female labour force participation** rate to at least 30% by 2022-23.

○ It stood at 17.3% in January-March 2020.

➢ **Housing**: The targets are to construct 29.5 million housing units under **Pradhan Mantri Awas Yojana** (PMAY)-Rural and 12 million units under PMAY-Urban.

○ Only about 46.8% and 38% respectively of the targets under 'Housing for All' have been achieved.

➢ **Drinking Water:** The target is to provide safe piped drinking water to all by 2022-23.

○ Only 45% of the target has been achieved.

➢ **Agriculture**: The target is to **double farmers' income by 2022.** While the average monthly income of an agricultural household has increased to Rs 10,218 from Rs 6,426, this increase is largely due to increase in wages and income from farming animals.

○ The share of income from crop production in the average monthly income of an agricultural household has, in fact, dropped — to **37.2% in 2018-19, from 48% in 2012-13.**

➢ **Digitisation of Land Records:** Another target is to **digitise all land records by 2022.** While states like Madhya Pradesh, West Bengal and Odisha have made good progress, states like **Jammu and Kashmir, Ladakh and Sikkim languish at 5%, 2% and 8.8%** digitisation of land records, respectively.

○ Overall, **the target is unlikely to be met, particularly because 14 states have witnessed deterioration in the quality of land records** since 2019-20.

➢ **Air Pollution:** The target is to bring down **Particulate Matter (PM) 2.5** levels in Indian cities to less than 50 micrograms per cubic metre ($\mu g/m3$). In 2020, when vehicular movement was restricted due to the pandemic, **23 of the 121 cities monitored for PM2.5 exceeded 50 $\mu g/m3$.**

➢ **Solid Waste Management:** The target is to achieve 100% source segregation in all households.

○ The overall progress is 78%; and while states like Kerala and Union territories like Puducherry have achieved the target, others like West Bengal and Delhi are woefully behind.

○ **Manual scavenging** is targeted for eradication, but **India still has 66,692 manual scavengers.**

➢ **Forest Cover**: The target is to increase it to 33.3% of the geographical area, as envisaged in the **National Forest Policy, 1988.**

○ By 2019, 21.6% of India was under forest cover.

➢ **Energy**: The target is to achieve **175 GW of renewable energy** generation capacity by 2022.

○ Only 56% of this target has been achieved thus far.

What was India's Performance on Sustainable Development Goals?

➢ India has **slipped three spots to rank 120** on the 17 **Sustainable Development Goals** (SDG) adopted as a part of the 2030 agenda by 192 **United Nations** member states in 2015.

Note:

- In 2021 India ranked 117 among 192 nations.
- India's overall **SDG score was 66 out of 100.**

➢ India's **rank dropped primarily because of major challenges in 11 SDGs** including zero hunger, good health and wellbeing, gender equality and sustainable cities and communities.

➢ India also **performed poorly in dealing with quality education and life on land aspects.**

- In 2021, India had suffered on the fronts of ending hunger and achieving food security, achieving gender equality and building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation.

How did the Indian States Perform?

➢ **Jharkhand and Bihar are the least prepared to meet** the SDGs by the target year 2030.

➢ **Kerala ranked first,** followed by Tamil Nadu and Himachal Pradesh in the second position.

➢ The **third position was shared by Goa, Karnataka, Andhra Pradesh and Uttarakhand**.

➢ Among the Union Territories, **Chandigarh was ranked first,** followed by Delhi, Lakshadweep and Puducherry in the second place and the Andaman and Nicobar Islands on the third.

World Wildlife Day

Why in News?

World Wildlife Day has been **celebrated every year** on the **3rd of March since 2013.**

➢ The date chosen coincides with the day of the **Convention on International Trade in Endangered Species** of **Wild Fauna and Flora (CITES)** which was signed in 1973.

➢ The **UNGA (General Assembly) resolution also designated the CITES Secretariat** as the facilitator for the global observance of this special day for wildlife on the **UN (United Nations)** calendar.

What is the theme of 2022?

➢ Theme: **Recovering key species for ecosystem restoration.**

➢ This theme is chosen as a way to draw attention to the conservation status of some of the most critically endangered species of wild fauna and flora.

What is the Significance of the Day?

➢ This aligns with UN **Sustainable Development Goals 1, 12, 14 and 15**, and their wide-ranging commitments on alleviating **poverty**, ensuring sustainable use of resources, and on conserving life both on land and below water to halt biodiversity loss.

➢ Our planet is currently facing the urgent challenge that is the loss of biodiversity and up to a million species could disappear in the coming decades if unsustainable human activity, **climate change** and habitat degradation are left unchecked.
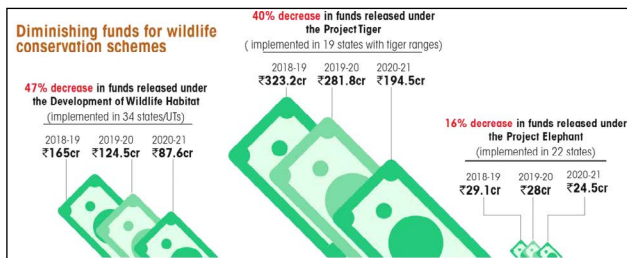
What about the Status of Species of Fauna and Flora?

➢ Around more than **8000 species of wild fauna and flora are endangered** and close to 30,000 more are known to be on the verge of getting extinct or vulnerable.

➢ It is also estimated that **around a million species are extinct.**

➢ India accounts for **7-8% of all recorded species**, including over **45,000 species of plants and 91,000 species of animals.**

➢ India is one of the **most biodiverse regions of the world**, home to three biodiversity hotspots - **the Western Ghats**, **the Eastern Himalayas**, **and the Indo-Burma hotspot.**

➢ The country has **seven natural World Heritage Sites**, **eleven Biosphere Reserves and forty nine Ramsar sites.**

➢ India is home to a **number of wildlife conservation parks and sanctuaries**, notable among those are **Jim Corbett National Park** in Uttarakhand, **Ranthambore National Park** in Rajasthan, **Gir National Park** in Gujarat, Bannerghatta Biological Park in Karnataka,

Periyar National Park in Kerala, Hemis National Park in Ladakh, **The Great Himalayan National Park** in Himachal Pradesh.

➢ The main factors that **contribute to the extinction of species** include **human activities such as habitat loss due to urbanisation, overexploitation, moving species from their natural habitat**, global pollution and climate change.

  ○ **Illegal wildlife trade** is also unsustainable, harming wild populations of animals and plants and pushing endangered species toward extinction. It also brings several public health consequences, such as the spreading of **zoonotic pathogens.**

Diminishing funds for wildlife conservation schemes

40% decrease in funds released under the Project Tiger
(implemented in 19 states with tiger ranges)
2018-19 ₹323.2cr 2019-20 ₹281.8cr 2020-21 ₹194.5cr

47% decrease in funds released under the Development of Wildlife Habitat
(implemented in 34 states/UTs)
2018-19 ₹165cr 2019-20 ₹124.5cr 2020-21 ₹87.6cr

16% decrease in funds released under the Project Elephant
(implemented in 22 states)
2018-19 ₹29.1cr 2019-20 ₹28cr 2020-21 ₹24.5cr

What about India's Domestic Legal Framework for Wildlife Conservation?

➢ **Constitutional Provisions for Wildlife:**

  ○ By the **42nd Amendment Act 1976** of the Constitution "Forests" was added as Entry 17A in the Concurrent List and the "protection of wild animals and birds" was added as Entry 17B.

  ○ **Article 51 A (g)** of the Constitution states that it shall be the **fundamental duty** of every citizen to protect and improve the natural environment including forests and Wildlife.

  ○ **Article 48 A i**n the **Directive Principles of State policy**, mandates that the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country.

➢ **Legal Framework:**

  ○ **Wildlife (Protection) Act, 1972**

  ○ **Environment Protection Act, 1986**

  ○ **The Biological Diversity Act, 2002**

➢ **India's Collaboration With Global Wildlife Conservation Efforts:**

  ○ **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**

  ○ **Convention on the Conservation of Migratory Species of Wild Animals (CMS)**

  ○ **Convention on Biological Diversity (CBD)**

  ○ **World Heritage Convention**

  ○ **Ramsar Convention**

  ○ **The Wildlife Trade Monitoring Network (TRAFFIC)**

  ○ **United Nations Forum on Forests (UNFF)**

  ○ **International Whaling Commission (IWC)**

  ○ **International Union for Conservation of Nature (IUCN)**

  ○ **Global Tiger Forum (GTF)**

IPCC: Part Two of Sixth Assessment Report

Why in News?

Recently, the **Intergovernmental Panel on Climate Change (IPCC)**, released the second part of its **sixth assessment report**. This second part of the report is **about climate change** impacts, risks and vulnerabilities, and adaptation options.

➢ The **first part of this report**, on the **physical science of climate change in 2021**. It had warned that **1.5 degree Celsius warming** was likely to be achieved before 2040 itself.

➢ The **third and final part of the report,** which will look into the **possibilities of reducing emissions, is expected to come out in April 2022.**

What are Important Observations of the Report?

➢ **Population at Risk:** Noting that over **3.5 billion people**, over **45% of the global population**, were living in areas highly vulnerable to climate change.

➢ **Indian Scenario:** The report identifies India as one of the **vulnerable hotspots**, with several regions and **important cities facing very high risk of climate disasters such as flooding, sea-level rise** and **heat-waves.**

  ○ For example, **Mumbai** is at high risk of sea-level rise and flooding, while **Ahmedabad** faces serious danger of heat-waves.

➢ **Complex, Compound and Cascading Risks:** The latest report warns that **multiple disasters induced by climate change** are likely to emerge in different parts of the world in the next two decades.

Note:

○ Multiple climate hazards will occur simultaneously, and **multiple climatic and non-climatic risks** will interact, resulting in compounding overall risk and risks cascading across sectors and regions.

➢ **Near to Long-term Risks:** Even if adequate efforts are made to keep the global rise in temperatures within **1.5 degree Celsius from pre-industrial times.**

○ Even temporarily exceeding this warming level will result in **additional severe impacts, some of which will be irreversible.**

○ The magnitude and rate of climate change and associated risks depend strongly on **near-term mitigation and adaptation actions.**

○ Projected adverse impacts and related losses and damages escalate **with every increment of global warming.**

➢ **Coupled System:** There is a strong focus on the interactions among the coupled systems climate, **ecosystems (including their biodiversity) and human society.**

➢ **Regional Variation:** Vulnerability of ecosystems and people to climate change differs **substantially among and within regions**.

○ These are driven by patterns of intersecting **socio-economic development, unsustainable ocean** and land use, inequity, marginalisation, historical and ongoing patterns of **inequity such as colonialism, and governance.**

➢ **Health Impacts of Climate Change:** It has found that climate change is increasing **vector-borne and water-borne diseases** such as **malaria** or **dengue**, particularly in sub-tropical regions of Asia.

○ It has also said deaths related to **circulatory, respiratory, diabetic and infectious diseases,** as well as infant mortality, are likely to increase with a rise in temperature.

○ Increasing frequency of extreme weather events like heatwaves, flooding and drought, and even air pollution was contributing to **under-nutrition, allergic diseases and even mental disorders.**

➢ **Current Adaptation and its Benefits:** Progress in adaptation planning and implementation has been observed across all sectors and regions, generating multiple benefits.

○ However, **adaptation progress is unevenly distributed** with observed adaptation gaps.

○ Many initiatives prioritise immediate and nearterm climate risk reduction which reduces the opportunity for transformational adaptation.

Adaptation Risks & Strategies

System transitions	Representative key risks	Climate responses[1] and adaptation options
Land and ocean ecosystems	Coastal socio-ecological systems	Coastal defence and hardening Integrated coastal zone management
	Terrestrial and ocean ecosystem services	Forest-based adaptation[2] Sustainable aquaculture and fisheries Agroforestry Biodiversity management and ecosystem connectivity
	Water security	Water use efficiency and water resource management
	Food security	Improved cropland management Efficient livestock systems
Urban and infrastructure systems	Critical infrastructure, networks and services	Green infrastructure and ecosystem services Sustainable land use and urban planning Sustainable urban water management
Energy systems	Water security	Improve water use efficiency
	Critical infrastructure, networks and services	Resilient power systems Energy reliability
Cross-sectoral	Human health	Health and health systems adaptation
	Living standards and equity	Livelihood diversification
	Peace and human mobility	Planned relocation and resettlement Human migration[3]
	Other cross-cutting risks	Disaster risk management Climate services, including Early Warning Systems Social safety nets Risk spreading and sharing

➢ **Gaps in Adaptation:** The report also highlights large gaps in the adaptation actions that are being taken and the efforts that are required. It says these gaps are a result of **"lack of funding, political commitment, reliable information, and sense of urgency".**

○ Adaptation is essential to reduce harm, but if it is to be effective, it **must go hand in hand with ambitious reductions in greenhouse gas emissions** because with increased warming, the effectiveness of many adaptation options declines.

➢ **Need for Holistic Changes**: It is clear now that minor, marginal, reactive or incremental changes won't be sufficient.

Note:

- ❍ **In addition to technological and economic changes**, shifts in most aspects of society are required to overcome limits to **adaptation, build resilience, reduce climate risk to tolerable levels, guarantee inclusive, equitable and just development** and achieve societal goals without leaving anyone behind.

What is the Intergovernmental Panel on Climate Change?

- ➤ It is the **international body for assessing the science related to climate change.**
- ➤ It was set up in 1988 by the **World Meteorological Organisation (WMO)** and **United Nations Environment Programme (UNEP)** to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
- ➤ IPCC assessments **provide a scientific basis for governments at all levels to develop climate related policies,** and they underlie negotiations at the UN Climate Conference – the **United Nations Framework Convention on Climate Change (UNFCCC).**

What is the Assessment Report of IPCC?

- ➤ The Assessment Reports, the f**irst of which had come out in 1990,** are the most **comprehensive evaluations of the state of the earth's climate.**
  - ❍ Every few years (about 7 years), the IPCC produces assessment reports.
- ➤ **Hundreds of experts** go through every available piece of relevant, published scientific information to prepare a common understanding of the changing climate.
- ➤ The four subsequent assessment reports, each thousands of pages long, came out in **1995, 2001, 2007 and 2015.**
  - ❍ These have formed the basis of the **global response to climate change.**
- ➤ Over the years, each assessment report has built on the work of the previous ones, **adding more evidence, information and data.**
  - ❍ So that most of the conclusions about climate change and its impacts have far greater clarity, certainty and wealth of new evidence now, than earlier.

- ➤ It is these negotiations that have produced the **Paris Agreement,** and previously the **Kyoto Protocol**.
  - ❍ The Paris Agreement, negotiated on the basis of the **Fifth Assessment Report.**
- ➤ The Assessment Reports - by three working groups of scientists.
  - ❍ **Working Group-I** - Deals with the scientific basis for climate change.
  - ❍ **Working Group-II** - Looks at the likely impacts, vulnerabilities and adaptation issues.
  - ❍ **Working Group-III** - Deals with actions that can be taken to combat climate change.

Fifth Session of the United Nations Environment Assembly

Why in News?

Recently, the **Fifth UN Environment Assembly** concluded with **14 resolutions to strengthen actions** for nature to achieve the **Sustainable Development Goals**.

- ➤ The **overall theme** for UNEA-5 was **"Strengthening Actions for Nature to Achieve the Sustainable Development Goals"**, which was hosted by the **UN Environment Programme.**
- ➤ The Assembly will be followed by **"UNEP@50"**, a two-day Special Session of the Assembly marking **UNEP's 50 anniversary** where member states are expected to address **how to build a resilient and inclusive post-pandemic world**, as well as to endorse a draft Political Declaration.

What is the United Nations Environment Assembly?
- ➤ It is the governing body of the **UN Environment Programme.**
- ➤ It is the **world's highest-level decision-making body** on the environment.
- ➤ The Assembly is made up of the **193 UN Member States** and convenes **every two years** to advance global environmental governance.
- ➤ It was created in June 2012, during the **United Nations Conference on Sustainable Development**, also referred to as **RIO+20.**

Note:

What are the Key Highlights of the Session?

➢ **Resolution to end Plastic Pollution:**
  ○ The world's ministers for the environment agreed to **establish an Intergovernmental Negotiating Committee (INC)** with the mandate to forge an international legally binding agreement to end **plastic pollution**.
  ○ INC will **begin its work in 2022**, with the ambition of completing a **draft global legally binding agreement by the end of 2024.**
    ● Under the legally binding agreement, **countries will be expected to develop, implement and update national action plans** reflecting country-driven approaches to contribute to the objectives of the instrument.
    ● They will be **expected to promote national action plans** to work towards the prevention, reduction and elimination of plastic pollution and to support regional and international cooperation.

➢ **Resolution on Management of Chemicals and Waste:**
  ○ It **supports the establishment of a comprehensive and ambitious science policy panel** on the **sound management of chemicals and waste** and preventing pollution.
  ○ The Ministerial Declaration recognises **humanity's failure to date to manage chemicals and waste**, a threat that is further aggravated by the Covid-19 pandemic through widespread use of single-use plastics and disinfectant chemicals.

➢ **Resolution focused on Nature-based Solutions:**
  ○ In the spirit of the **UN Decade for Ecosystem Restoration (2021-2030)**, it focuses on **nature-based solutions: actions to protect, conserve, restore, sustainably use and manage ecosystems.**
  ○ The resolution calls on **UNEP to support the implementation** of such solutions, which safeguard the rights of communities and indigenous peoples.

➢ **Resolution Prioritising Ecosystem Restoration:**
  ○ Three resolutions **prioritize ecosystem restoration, biodiversity protection, resource efficiency,** consumption and production patterns, climate mitigation and adaptation, job creation and poverty reduction.

➢ **Resolution on Minerals and Metals:**
  ○ It **calls for the development of proposals** to enhance their environmental sustainability along their full lifecycle.

➢ **Resolution on Sustainable Lake Management:**
  ○ It calls on **member states to protect, conserve, and restore, as well as sustainably use lakes,** while integrating lakes into national and regional development plans.

➢ **Resolution on Sustainable and Resilient Infrastructure:**
  ○ It **encourages member states to integrate environmental considerations** in all their infrastructure plans.

➢ **Resolution on Animal Welfare:**
  ○ It calls on **member states to protect animals, protecting their habitats** and meeting their welfare requirements.
    ● It recognised the risk for future pandemics and other health risks if humanity doesn't overhaul its patterns of interaction with nature by adopting a holistic approach such as **'One Health'.**

➢ **Resolution on Biodiversity and Health:**
  ○ It calls on member states to **reduce health risks associated with trade in live wildlife** captured for the purposes of food, captive breeding, medicines and the pet trade, through regulation and sanitary controls.

➢ **Resolution to Reduce Nitrogen Waste:**
  ○ It calls for **accelerated actions to significantly reduce nitrogen waste** from all sources, especially through agricultural practices, and saving USD100 billion annually.

➢ **Resolution to strengthen measures Post Covid:**
  ○ The Assembly adopted a **"resolution on the environmental dimension** of a sustainable, resilient and inclusive post-Covid-19 recovery" to strengthen measures to achieve a sustainable, resilient and inclusive global recovery.

➢ **Other Resolutions:**
  ○ Additional resolutions and decisions from the Assembly address the **date and venue for UNEA-6,** the future of the **Global Environment Outlook (GEO)** and the equitable geographical representation and balance in the secretariat of UNEP.

Note:

What was the Related Draft Resolution Proposed by India?

➢ The Indian draft resolution titled **Framework for addressing plastic product pollution** including **single use plastic** product pollution, was based upon the **principle of immediate collective voluntary action by countries.**

➢ But India has agreed to the **setting up of an INC for a new, international and legally binding treaty.**

    ❍ The INC is **expected to present a legally binding instrument,** which would reflect diverse alternatives to address the full lifecycle of plastics, the design of reusable and recyclable products and materials and the need for enhanced international collaboration to facilitate access to technology, capacity building and scientific and technical cooperation.

➢ Earlier, India had announced the **Plastic Waste Management (Amendment) Rules, 2022**, which notified the instructions on **Extended Producer Responsibility (EPR)** for plastic packaging.

    ❍ Plastic Waste Management Rules 2016 has been amended **to fast-track the elimination of single-use plastics** and promote alternatives.

Wet Bulb Temperature

Why in News?

Recently**, part 2 of the sixth assessment** report of **Intergovernmental Panel on Climate Change (IPCC)**, emphasised on the trend in the **'Wet Bulb' Temperature** in South Asia.

➢ The trend will provide an index of the **impact of heat and humidity combined** — and its effect on health.
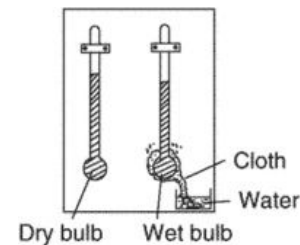
WHAT IS WET-BULB TEMPERATURE

➤ Wet-bulb temperature is the lowest temperature to which air can be cooled by the evaporation of water into the air

➤ It is measured by factoring in heat and humidity levels

➤ Theoretically, if wet-bulb temperature reaches 35 degrees Celsius –its highest point- it means humans can no longer lose internal body heat by sweating and cool themselves

➤ This could potentially leads to heatstrokes

Wet-bulb days in Delhi each year at present | **63 days**
RCP 8.5 or business as usual scenario (2050) | **99 days**
RCP 8.5 or business as usual scenario (2100) | **131 days**
RCP 2.6 (stringent scenario where global temperature rise will be below 2°C by 2100) | **81 days**

What is the Wet Bulb Temperature?

➢ Wet bulb temperature is the **lowest temperature to which air can be cooled** by the evaporation of water into the air at a constant pressure.

➢ WBT is **a limit that considers heat and humidity beyond which humans can not tolerate high temperatures.**

➢ The Wet Bulb temperature is the **temperature of adiabatic saturation**. This is the temperature **indicated by a moistened thermometer bulb exposed to the air flow.**

    ❍ An **adiabatic process** is one in which no heat is gained or lost by the system.

➢ Wet Bulb temperature **can be measured by using a thermometer with the bulb wrapped in wet muslin.**

➢ The **adiabatic evaporation of water** from the thermometer and the cooling effect is indicated by a "wet bulb temperature" lower than the "dry bulb temperature" in the air.

➢ The rate of evaporation from the wet bandage on the bulb, and the temperature difference between the dry bulb and wet bulb, **depends on the humidity of the air.**

    ❍ The **evaporation is reduced when the air contains more water vapour.**

➢ The wet bulb temperature is **always lower than the dry bulb temperature** but will be identical with 100% relative humidity (the air is at the saturation line).

➢ A wet-bulb temperature of 31°C is exceedingly harmful to humans, while a temperature of 35°C is unsurvivable for more than 6 hours.

What are Dew Point and Dry Bulb Temperatures?

➢ **Dry Bulb Temperature:**

    ❍ The Dry Bulb temperature, usually referred to as "air temperature", **is the air property that is most commonly used.** When people refer to the **temperature of the air they are normally referring to the dry bulb temperature.**

Note:

drishti

○ The Dry Bulb Temperature refers basically **to the ambient air temperature.** It is called "Dry Bulb" because the **air temperature is indicated by a thermometer not affected by the moisture of the air.**

○ Dry-bulb temperature **can be measured using a normal thermometer freely exposed to the air but shielded from radiation and moisture.**

○ The dry-bulb temperature is an **indicator of heat content** .

➢ **Dew Point Temperature:**

○ The Dew Point is the temperature where **water vapour starts to condense out of the air** (the temperature at which air becomes completely saturated).

● Above this temperature the moisture stays in the air.

○ If the dew-point temperature is close to the dry air temperature - **the relative humidity is high.**

○ If the dew point is well below the dry air temperature - **the relative humidity is low.**

○ The Dew Point temperature is **always lower than the Dry Bulb temperature and will be identical with 100% relative humidity** (the air is at the saturation line).

How will this Trend Impact India?

➢ Lucknow and Patna, were among the cities predicted to **reach wet-bulb temperatures of 35°C if emissions continued to rise**, while **Bhubaneswar, Chennai, Mumbai, Indore, and Ahmedabad are 'at risk' of reaching wet-bulb temperatures of 32°C-34°C** with continued emissions.

➢ With continuing emissions, parts of central India including Vidarbha are at risk of exceeding **wet bulb temperatures of 32-34°C.**

➢ This will have consequences such as a **rise in heat-wave linked deaths or reduced productivity.**

➢ **Relying on artificial cooling** to cope with the growing heat would supercharge energy demand and **leave many people dangerously exposed to power failures.**

○ **I**t would also abandon the most vulnerable members of society and doesn't help those who have to venture outside.

Amazon Rainforest Nearing Tipping Point

Why in News?

A study published recently says that **a significant part of the Amazon rainforest has been heading towards a tipping point since the early 2000s.** It may be losing **its ability to bounce back from extreme events** such as drought or fire, threatening **to become a dry savanna-like ecosystem.**

➢ In this study, **researchers analyzed 30 years of satellite data** to understand the resilience of the rainforest and how it has changed over the years.

➢ The latest findings are **consistent with the accumulating evidence that the twin pressures of climate change and human exploitation of tropical forests are endangering the world's largest rainforest**, which is home to one out of every 10 species known to science.

What is the Savannah-Like Ecosystem?

➢ The Savannah ecosystem is **a tropical grassland with warm temperatures year-round and with its highest seasonal rainfall in the summer.**

➢ The savanna is **characterized by grasses and small or dispersed trees that do not form a closed canopy**, allowing sunlight to reach the ground.

➢ The **largest areas of savanna are found in** Africa, South America, Australia, India, the Myanmar (Burma)–Thailand region in Asia, and Madagascar.

What are the Findings of the Study?

➢ **Loss of Resilience:**

○ There are **signs of a loss of resilience in more than 75% of the forest,** with trees taking longer to recover from the effects of droughts largely driven by climate change as well as human impacts such as deforestation and fires.

○ A vicious cycle of damage **could trigger "dieback".**

● **Dieback:** A condition in which a tree or shrub begins to die from the tip of its leaves or roots backwards, owing to disease or an unfavourable environment.

Note:

➢ **Implications:**
  ○ While it's not clear when that critical point might be reached, the implications for **climate change**, biodiversity and the local community would be "devastating".
  ○ A previous study predicted that a tipping point would occur when the rainforest witnesses roughly 20-25% of deforestation.

➢ **Causes:**
  ○ **Deforestation is on the rise:**.
    ● It totalled 430 square kilometers in January 2022, five times higher than the same month last year.
    ● Around a fifth of the rainforest has already been lost, compared to pre-industrial levels.
    ● This loss will **affect the amount of rainfall.** Trees take up water through the roots, releasing it into the atmosphere, influencing precipitation over South America.
  ○ **Climate Inducing it into Carbon Source:**
    ● Increasing temperatures due to human-induced climate change and deforestation are pushing the rainforest **to transform into a carbon source**: **Places that release more CO_2 than they absorb.**
    ● The researchers warn that the forests could release vast amounts of CO_2 if they partially transform into dry habitats.
  ○ Anthropogenic Activities are the on the rise:
    ● Human land-use activities — direct removal of trees, construction of roads, and fires — could be another contributor. It has been on the rise since 2010.

What are the Suggestions?

➢ **Reducing deforestation** will protect the forest's threatened parts and boost Amazon rainforest resilience.

➢ **Limiting global greenhouse gas emissions** is also necessary to safeguard the Amazon.

What are the Key Points Related to Amazon Rainforests?

➢ These are **large tropical rainforests occupying the drainage basin of the Amazon River** and its tributaries in northern South America and covering an area of 6,000,000 square km.

  ○ Tropical forests are **closed-canopy forests growing within 28 degrees nort**h or south of the equator.
  ○ They are v**ery wet places, receiving more than 200 cm rainfall** per year, either seasonally or throughout the year.
  ○ Temperatures are uniformly high - between 20°C and 35°C.
  ○ Such forests are found in Asia, Australia, Africa, South America, Central America, Mexico and on many of the Pacific Islands.

➢ Comprising **about 40% of Brazil's total area**, it is bounded by the Guiana Highlands to the north, the Andes Mountains to the west, the Brazilian central plateau to the south, and the Atlantic Ocean to the east.

■■■

Note:

History

Highlights

- *Savitribai and Jyotirao Phule*
- *Dandi March 1930*

Savitribai and Jyotirao Phule

Why in News?

Recently, Maharashtra Governor was criticised for allegedly mocking 19th **century social reformers Savitribai and Jyotirao Phule** for **"getting married at a young age".**

➢ Mahatma Jyotirao and Savitribai Phule stand out as an extraordinary couple in the social and educational history of India.

➢ They spearheaded path-breaking work towards **female education and empowerment, and towards ending caste- and gender-based discrimination.**
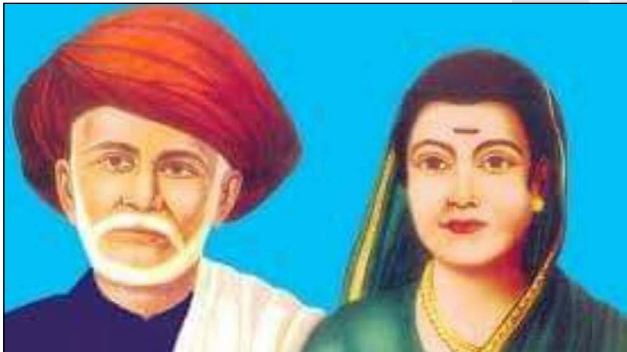
Who were Savitribai and Jyotirao Phule?

➢ In 1840, at a time when **child marriages were common**, Savitri at the age of ten was married to Jyotirao, who was thirteen years old at the time.

➢ The couple later in life strove to oppose child marriage and also organised widow remarriages.

➢ **Jyotirao Phule:**
  ○ He was an Indian **social activist, thinker, anti-caste social reformer and writer from Maharashtra.**
    • He is also known as **Jyotiba Phule.**
  ○ **Education:** In 1841, Phule was enrolled at the S**cottish Missionary High School** (Pune), where he completed education.

○ **Ideology:** His Ideology was based on: **Liberty; Egalitarianism; Socialism.**
  • Phule was influenced by **Thomas Paine's book titled The Rights of Man** and believed that the only solution to combat the social evils was the enlightenment of women and members of the lower castes.

○ **Major Publications**: Tritiya Ratna (1855); Powada: Chatrapati Shivajiraje Bhosle Yancha (1869); Gulamgiri (1873), Shetkarayacha Aasud (1881)**.**

○ **Title of Mahatma:** He was bestowed with the **title of Mahatma on 11th May, 1888** by a Maharashtrian social activist **Vithalrao Krishnaji Vandekar.**

○ **Social Reforms:** Jyotirao, the revolutionary that he was, **observed the lack of opportunities for education for young girls and women.**
  • He started to **educate his wife at home** and trained her to become a teacher.
  • He realised the **pathetic conditions of widows and established an ashram for young widows** and eventually became an advocate of the idea of Widow Remarriage.
  • He attacked the **orthodox Brahmins and other upper castes** and termed them as **"hypocrites".**
  • In 1868, Jyotirao constructed a **common bathing tank** outside his house to exhibit his embracing attitude towards all human beings and wished to dine with everyone, regardless of their caste.
  • He started **awareness campaigns** that ultimately inspired the likes of **Dr. B.R. Ambedkar** and **Mahatma Gandhi,** stalwarts who undertook major initiatives against caste discrimination later.
  • It is believed by many that it was Phule who first used th**e term 'Dalit'** for the depiction of oppressed masses often placed outside the 'varna system'.

Note:

- ➢ **Savitribai Phule:**
  - ○ In 1852, Savitribai started the **Mahila Seva Mandal** to raise awareness about women's rights.
  - ○ Savitribai called for a women's gathering where members from all castes were welcome and everybody was expected to sit on the same mattress.
  - ○ She published **Kavya Phule in 1854** and **Bavan Kashi Subodh Ratnakar in 1892.**
  - ○ In her poem, **Go, Get Education**, she urges the oppressed communities to get an education and break free from the chains of oppression.
  - ○ She simultaneously **campaigned against child marriage, while supporting widow remarriage.**
  - ○ She initiated the **first Satyashodhak marriage**—a marriage without a dowry, Brahmin priests or Brahminical rituals in 1873.

What is their Legacy?

- ➢ Together, by 1848, the Phules started a **school for girls, Shudras and Ati-Shudras in Poona.**
- ➢ In the 1850s, the Phule couple initiated **two educational trusts—the Native Female School, Pune and The Society for Promoting the Education of Mahars, Mangs and Etceteras**—which came to have many schools under them.
- ➢ In 1853, they opened a **care centre for pregnant widows** to have safe deliveries and to end the practice of infanticide owing to social norms.
  - ○ The **Balhatya Pratibandhak Griha (Home for the Prevention of Infanticide)** started in their own house.
- ➢ The **Satyashodhak Samaj (The Truth-Seeker's Society)** was established on 24th September, 1873 by Jyotirao-Savitribai and other like-minded people.
  - ○ The Samaj a**dvocated for social changes that went against prevalent traditions,** including economical weddings, inter-caste marriages, eradication of child marriages, and widow remarriage.
  - ○ Also, Satya shodhak samaj was founded with a purpose to give education to the lower castes, scheduled caste, scheduled tribes and made them aware of the exploiting tradition of society.

Dandi March 1930

Why in News?

Recently, the Prime Minister paid tributes to **Mahatma Gandhi** and all the eminent persons who **Marched to Dandi (1930)** in order to protest injustice and protect our nation's self-esteem.

- ➢ Earlier in 2021, a **commemorative 'Dandi March'** was launched, which was undertaken by 81 marchers from **Sabarmati Ashram in Ahmedabad to Dandi in Navsari, a journey of 386 km.**

What was the Dandi March?

- ➢ The Dandi March, **also known as the Salt March and the Dandi Satyagraha** was an act of **nonviolent civil disobedience led by Mohandas Karamchand Gandhi.**
- ➢ The march lasted from **12th March, 1930 to 6th April, 1930** as a direct action campaign of tax resistance and nonviolent protest against the British salt monopoly.
- ➢ On 12th March, Gandhiji set out from **Sabarmati** with 78 followers on a **241-mile march** to the coastal town of Dandi on the Arabian Sea. There, Gandhi and his supporters were to defy British policy by making salt from seawater.
- ➢ At Dandi, thousands more followed his lead, and in the coastal cities of Bombay and Karachi, Indian nationalists led crowds of citizens in making salt.
- ➢ **Civil disobedience broke out all across India**, soon involving millions of Indians, and British authorities arrested more than 60,000 people. Gandhiji himself was arrested on 5th May, but the satyagraha continued without him.
- ➢ On 21st May, the poet **Sarojini Naidu led 2,500 marchers on the Dharasana Salt Works,** some 150 miles north of Bombay. The incident, recorded by American journalist Webb Miller, prompted an international outcry against British policy in India.
- ➢ In **January 1931, Gandhiji was released from prison**. He later met with Lord Irwin, the viceroy of India, and agreed to call off the satyagraha in exchange for an equal negotiating role at a London conference on India's future.

Note:

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○ In August 1931, **Gandhiji traveled to the conference as the sole representative of the nationalist Indian National Congress.** The meeting was a disappointment, but British leaders had acknowledged him as a force they could not suppress or ignore.

What was its Background?

➢ The Lahore Congress of 1929 had authorized the **Congress Working Committee (CWC)** to launch a programme of civil disobedience including non-payment of taxes.

➢ On **26ᵗʰ January 1930**, "Independence Day" was observed, with the national flag being hoisted in different venues, and patriotic songs being sung.

➢ In February 1930, **CWC meeting at Sabarmati Ashram, invested Gandhiji with full powers to launch the Civil Disobedience Movement** at a time and place of his choice.

➢ Gandhiji's ultimatum to Lord Irwin, the Viceroy of India (1926-31), stating the minimum demands had been ignored and there was only one way out-civil disobedience.

What was the Effect of the Movement?

➢ Civil Disobedience in different forms continued in different province**s. Special stress was laid on the boycott of foreign goods.**

➢ In eastern India, payment of chowkidari tax was refused. **This no-tax campaign became very popular in Bihar.**

➢ In Bengal, J.N. Sengupta defied Government laws by reading openly the books banned by the government.

➢ Defiance of forest laws assumed a **mass character in Maharashtra.**

➢ The movement had taken a fire hold in the provinces of **U.P., Orissa. Tamil Nadu, Andhra Pradesh and Assam.**

What is its Significance?

➢ **Imports from Britain had fallen considerably.** For example, imports of cloth from Britain had fallen by half.

➢ The movement was more **widespread than the previous one.** Mass participation including women, peasants, workers, students, urban elements like merchants, shopkeepers provided the Congress a new all-India status.

➢ The support that the movement had **garnered from the poor and the illiterate both in the town and countryside was remarkable.**

➢ For Indian women**, the movement was the most liberating experience** to date and can truly be said to have marked their entry into the public space.

➢ Although the **Congress withdrew the Civil Disobedience in 1934**, the movement received global attention and marked a critically important stage in the progress of the anti-imperialist struggle.

■■■

Note:

Geography

Highlights

- *Flood Plain Zoning*
- *Tapi-Par-Narmada Link Project*

Flood Plain Zoning

Why in News?

Recently, the Ministry of Jal Shakti has informed the **Rajya Sabha** that the states of Manipur, Rajasthan, Uttarakhand and erstwhile State of Jammu & Kashmir had enacted the **National Floodplains Zoning Policy.**

➢ However, **delineation and demarcation of flood plains is yet to be undertaken.**

➢ Earlier, the **Comptroller and Auditor General of India (CAG)** presented a report on preparedness and response to floods in the Kerala assembly.

  ❍ The report pointed out that the state is yet to enact flood plain zoning legislation, 45 years after the Union Government circulated to all states a **model draft bill for flood plain zoning legislation.**

What is Flood Plain Zoning?

➢ **About:**

  ❍ Flood Plain Zoning has been recognized as an effective non-structural measure for **flood management.**

  ❍ The basic concept of flood plain zoning is **to regulate land use in the flood plains to restrict the damage** caused by floods.

➢ **Features:**

  ❍ **Determining Developmental Activities:** It aims at **determining the locations and the extent of areas** for developmental activities in such a fashion that the damage is reduced to a minimum.

  ❍ **Adds Limitations:** It envisages **laying down limitations on development of both the unprotected as well as protected areas.**

- In the unprotected areas, boundaries of areas in which developmental activities will be banned, are to be established to prevent indiscriminate growth.

- In the protected areas, only such developmental activities can be allowed, which will not involve heavy damage in case the protective measures fail.

  ❍ **Utility:** Zoning cannot remedy existing situations, although, **it will definitely help in minimising flood damage in new developments.**

- Flood plain zoning is not only necessary in the case of floods by rivers but it is also useful in reducing the damage caused by drainage congestion particularly in urban areas.

What is India's Status of Vulnerability to Floods:

➢ India's **high risk and vulnerability is highlighted** by the fact that 40 million hectares out of a geographical area of 3290 lakh hectares is prone to **floods.**

➢ On an average every year, **75 lakh hectares of land is affected, 1600 lives are lost and the damage caused to crops**, houses and public utilities is Rs. 1805 crores due to floods.

What is a Model Bill for Flood Plain Zoning?

➢ **About:** The Bill provides **clauses about flood zoning authorities, surveys and delineation of flood plain area, notification of limits of flood plains, prohibition of the use of the flood plains**, compensation and most importantly removing obstructions to ensure free flow of water.

  ❍ It **seeks to replace dwellings in low-lying areas** by parks and playgrounds as absence of human settlement in those areas would cut down loss of lives and property.

Note:

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➢ **Challenges in Implementation:**

○ There has been **resistance on the part of the states to follow-up the various aspects** of floodplain management including possible legislation.

● The reluctance of the states is mainly due to population pressure and want of alternative livelihood systems.

○ The lukewarm response of the states towards the enactment and enforcement of the floodplain regulations has **fuelled a significant increase in the encroachments into the flood plains,** sometimes authorised and duly approved by the town planning authorities.

What are the Related Constitutional Provisions and Other Measures?

➢ Based on the inclusion of drainage and embankments as **entry 17 of List II (State List), flood control has been seen to fall under the purview of the state government**, except in the case of "regulation and development of inter-state rivers and river valleys," which is mentioned in **entry 56 of List I (Union List).**

○ Floodplain zoning is firmly **within the state government's ambit** as it deals with the land along the riverbanks and land is a state subject under entry 18 of List II.

○ The central government's role can only be to issue advisories and prescribe guidelines.

➢ Flood control and mitigation are not directly mentioned in any of the three legislative lists included in the seventh schedule **Constitution.**

➢ The **National Disaster Management Authority (NDMA)** in 2008 has issued guidelines for states for floodplain zoning as an important "non-structural measure" to mitigate floods.

○ It suggested that areas likely to be affected by floods in a frequency of 10 years should be reserved for green areas like parks, gardens and others while concrete structures should not be allowed there.

○ It also talked about other zones in the floodplain like in areas of flooding in a 25-year frequency and asked states to make plans accordingly in those areas.

Tapi-Par-Narmada Link Project

Why in News?

Recently, some tribals have **intensified their protest against the Par-Tapi-Narmada river linking project** after it was mentioned in the **budget speech (2022-23)** of the finance minister.

What is the Background?

➢ These projects had been **sanctioned in 2010**, when a **tripartite agreement** was signed between the Union government, Gujarat and Maharashtra.

➢ The Finance Minister in her **Budget Speech** said that **five river linking projects will be taken up** after consensus among states.

○ The projects are **Damanganga-Pinjal, Par-Tapi-Narmada, Godavari-Krishna, Krishna-Pennar and Pennar-Cauveri.**

○ The **Ken-Betwa is the first project** under the government's **National Perspective Plan for river inter-linking.**

● The **National River Linking Project (NRLP)** formally known as the National Perspective Plan, envisages the transfer of water from water 'surplus' basins where there is flooding, to water 'deficit' basins where there is drought/scarcity, through inter-basin water transfer projects.

What is the Par-Tapi-Narmada River Linking Project?

➢ Par Tapi Narmada Link proposes to **transfer water from the water surplus regions of Western Ghats** to the **water deficit regions** of **Saurashtra and Kutch (Gujarat).**

Note:

- ➤ The link project includes seven reservoirs **proposed in north Maharashtra and south Gujarat.**
- ➤ The water from the **seven proposed reservoirs would be taken through a 395 km long canal** to take over a part of the command of the on-going SardarSarovar Project (on Narmada), while irrigating small enroute areas.
  - ○ The **seven dams proposed in the scheme are** Jheri, Mohankavchali, Paikhed, Chasmandva, Chikkar, Dabdar and Kelwan.
- ➤ This would save **SardarSarovar water** which will be used to extend irrigation in Saurashtra and Kutch region.
- ➤ The link mainly **envisages construction of seven dams, three diversion weirs, two tunnels**, 395 km long canal, 6 power houses and a number of cross-drainage works.

What will be the Benefits of the Project?

- ➤ Besides providing **irrigation benefits to the enroute command** and Narmada command, the link will **generate hydropower** of the order of 93.00 Mkwh through the power houses installed at four dam sites.
- ➤ The reservoirs will **also provide flood relief to the peopl**e residing in downstream areas.

What do we know about Narmada River?
- ➤ Narmada is the **largest west flowing river of the peninsular region** flowing through a rift valley between the Vindhya Range on the north and the Satpura Range on the south.
- ➤ It rises from **Maikala range near Amarkantak** in Madhya Pradesh.
- ➤ It drains a **large area in Madhya Pradesh** besides some areas in the states of Maharashtra and Gujarat.
- ➤ The river near **Jabalpur (Madhya Pradesh)** forms the DhuanDhar Falls.
- ➤ There are several islands in the estuary of the Narmada of which Aliabet is the largest.
- ➤ **Major Tributaries:** Hiran, Orsang, the Barna and the Kolar.
- ➤ The major Hydro Power Projects in the basin are Indira Sagar, Sardar Sarovar etc.

What do we know about the Tapi River?
- ➤ Another important westward flowing river **originates from the Betul district of Madhya Pradesh in the Satpura ranges.**
- ➤ It flows in a rift valley parallel to the Narmada but is much shorter in length.

- ➤ Its **basin covers parts of Madhya Pradesh, Gujarat and Maharashtra.**

What do we know about the Par River?
- ➤ Par River is **a river in Gujarat with its source near wadpada village in Nashik Maharashtra.**
- ➤ It flows i**nto the Arabian Sea.**

What is the Inter-Linking of Rivers Programme?

- ➤ **Aim:**
  - ○ The **InterLinking of Rivers programme (ILR) programme** is aimed at linking different surplus rivers of the country with deficient rivers so that the excess water from surplus regions could be diverted to deficient regions.
- ➤ **Need:**
  - ○ **Reducing Regional Imbalance:** India **depends on monsoon rains** that are erratic as well as regionally imbalanced. Interlinking of rivers will **reduce the amount of surplus rain and river water** which flows into the sea.
  - ○ **Irrigation for Agriculture:** Interlinking can **provide a solution to the rain-fed irrigation problems** of Indian agriculture through the transfer of surplus water to deficit regions.
  - ○ **Reducing Water Distress:** This can **help in mitigating the effect of drought and floods** to a certain extent.
  - ○ **Other Benefits:** Hydropower generation, Round the year navigation, Employment generation, Ecological benefits as dried up forests and lands will be replenished.
- ➤ **Challenges:**
  - ○ **Environmental Costs:** The project threatens to obstruct the natural ecology of rivers.
  - ○ **Climate Change:** In interlinking systems, it is assumed that the donor basin has surplus water that can be made available to the recipient basin.
    - • The whole concept goes for a toss if this basic assumption goes haywire for any system due to climate change.
  - ○ **Economic Costs:** It is estimated that river interlinking will be a huge fiscal burden on the Government.
  - ○ **Socio-Economic Impact:** It is estimated that the network of canals extending to about 15000 km would displace about 5.5 million people, mostly tribals and farmers.

Note:

Art and Culture

Highlights

- *Konark Sun Temple to Run on Solar Energy*

Konark Sun Temple to Run on Solar Energy

Why in News?

Konark is going to be the **first model town in Odisha** to shift from **grid dependency to green energy.**

➤ The Odisha government has issued a **policy guideline in this regard.**

➤ In May 2020, the **central government launched a scheme for solarisation of Konark Sun Temple and Konark town in Odisha.**

What are the Guidelines of the Policy?

➤ Under the guidelines, the state has **targeted to generate 2,750 megawatt (MW) from renewable energy** sources like the sun, wind, biomass, small hydro and waste-to-energy (WTE), etc. by 2022-end.

➤ The state also targets to **generate 2,200 MW from solar energy** and a part of it will be **utilised to run the Sun Temple and Konark town** on solar energy.

➤ Konark's transition to renewable energy is part of an **ambitious plan by the Union Ministry of New and Renewable Energy (MNRE).**

How is this step a significant Step and what are related Challenges?

➤ The shifting from grid to solar energy will **help reduce the electricity consumption** of the Sun Temple.

➤ The financial benefit from solar energy will **help divert spending on other developmental work of the temple.**

➤ Odisha faces many challenges in setting up huge solar power plants.

○ The state has **480 km of coastline** and is prone to regular cyclones. It has so far encountered 10 cyclones including **Super Cyclone, Phailin, Hudhud, Titli, Amphan** and **Fani in 22 years.**

➤ Besides this, **land acquisition is another major challenge** in setting up solar power plants.

○ While coastal areas are cyclone-prone, some parts of Odisha have dense forests whereas land is expensive in densely-populated areas.

What do we Know about Konark Temple?

➤ Konark Sun Temple, **located in the East Odisha near the sacred city of Puri.**

➤ Built **in the 13th century by King Narasimhadeva I** (AD 1238-1264). Its scale, refinement and conception represent the strength and stability **of the Eastern Ganga Empire** as well as the value systems of the historic milieu.

○ The **Eastern Ganga dynasty** also known as **Rudhi Gangas or Prachya Gangas.**

○ It was the large Indian royal dynasty in the medieval era that reigned from Kalinga from as early as the 5th century to the early 15th century.

○ The beginnings of what became the Eastern Ganga dynasty came about when Indravarma I defeated the Vishnukundin king.

➤ The temple is designed in the shape of a **colossal chariot.**

➤ It is **dedicated to the sun God.**

➤ The Konark temple is **widely known not only for its architectural grandeur** but also for the intricacy and profusion of sculptural work.

○ It marks the highest point of achievement of Kalinga architecture depicting the grace, the joy and the rhythm of life in all its wondrous variety.

Note:

- It was declared a **UNESCO world heritage site** in 1984.
- There are two rows of 12 wheels on each side of the Konark sun temple. Some say the wheels represent the 24 hours in a day and others say the 12 months.

- The seven horses are said to symbolise the seven days of the week.
- Sailors once called this **Sun Temple of Konark**, **the Black Pagoda** because it was supposed to draw ships into the shore and cause shipwrecks.
- Konark is the invaluable link in the history of the diffusion of the cult of Surya, which originating in Kashmir during the 8th century, finally reached the shores of Eastern India.

Other Important Monuments in Odisha
- **Jagannath Temple**
- **Tara Tarini Temple**
- **Udaygiri and Khandagiri Caves**
- **Lingaraja Temple**

Note:

Security

Highlights

- Missile Misfires
- Defence Acquisition Procedure
- INS Visakhapatnam
- Rohingya Muslims in India

Missile Misfires

Why in News?

Recently, **India acknowledged** that "technical malfunction led to the **accidental firing of a missile" whic**h **landed 124 km inside Pakistan's territory.**

➢ It was speculated that it was a test of one of India's top missiles, **BrahMos**, jointly developed with Russia.

What are the Provisions for Testing Missiles?

➢ Under the pre-notification of flight testing of **ballistic missiles agreement signed in 2005**, each country **must provide the other an advance notification on the flight test** it intends to take for any land or sea launched, **suface-to-surface ballistic missile.**

➢ Before the test, the country must issue **Notice to Air Missions (NOTAM) or Navigational Warning (NAVAREA)** to alert aviation pilots and seafarers, respectively.

➢ Also, the **testing country must ensure that the launch site is not within 40 km,** and the planned impact area is not within **75 km of either the International Boundary (IB) or the Line of Control (LoC).**

   ○ The planned trajectory **should not cross the IB or the LoC** and **must maintain a horizontal distance** of at least 40 km from the border.

➢ The **testing country must notify the other nation "no less than three days** in advance of the commencement of a five day launch window within which it intends to undertake flight tests of any land or sea launched, surface-to-surface ballistic missile".

   ○ The pre-notification has to be **"conveyed through the respective Foreign Offices and the High Commissions"**.

What is Notice to Air Missions (NOTAMs)?

➢ A NOTAM is a **notice containing information essential to personnel concerned** with flight operations but not known far enough in advance to be publicized by other means.

What is a Navigational Warning Service (WWNWS)?

➢ The World Wide Navigational Warning Service (WWNWS) was **established in 1977 for the promulgation of information** on worldwide hazards to navigation for international shipping.

➢ Navigational warnings **provide early information of important incidents** which may constitute a danger to navigation.

➢ Many navigational warnings are of a **temporary nature, but others remain in force for several weeks** and may be succeeded by Notice to Mariners (NMs).

What is Brahmos Missile?

➢ BrahMos is a joint venture between the **Defence Research and Development Organisation of India (DRDO)** and the NPOM of Russia.

   ○ BrahMos is named on the rivers **Brahmaputra and Moskva.**

➢ It is a **two-stage** (solid propellant engine in the first stage and liquid ramjet in second) missile.

➢ It is a **multiplatform missile** i.e it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.

➢ It operates on the **"Fire and Forgets" principle** i.e it does not require further guidance after launch.

➢ Brahmos is one of the **fastest cruise missile** currently operationally deployed with speed of Mach 2.8, which is nearly 3 times more than the speed of sound.

Note:

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Defence Acquisition Procedure

Why in News?

The Ministry of Defence approved projects that will involve design and development of the military hardware covering **light tanks**, **airborne stand-off jammers**, communication equipment and simulators under **Defence Acquisition Procedure (DAP).**

➢ The defense ministry has cleared nine such projects: four under the 'Make-I' and five under the 'Make-2' categories of the DAP 2020.

➢ In the **Union Budget 2022**, India earmarked Rs 84,598 crore - 6**8% of the military's capital acquisition budget --- for purchasing locally produced weapons** and systems to boost self-reliance in the defence sector, **besides setting aside 25% of the defence R&D budget for private industry,** startups and academia to encourage them to pursue design and development of military platforms.

What is the 'Make' Category?

➢ The 'Make' category of capital acquisition is t**he cornerstone of the Make in India initiative** that seeks to build indigenous capabilities through the involvement of both public and private sector.

➢ **'Make-I'** refers to government-funded projects while **'Make-II'** covers industry-funded programmes.

  ❍ **Make-I is involved** in development of **big-ticket platforms such as light tank and communication equipme**nt with Indian security protocols.

  ❍ Make-II category involves **prototype development of military hardware** or its upgrade for import substitution for which no government funding is provided.

    ● The five projects approved under the industry-funded Make-II procedure are simulators for **Apache attacks helicopters and Chinook multi-mission choppers,** wearable robotic equipment for aircraft maintenance, autonomous combat vehicle and integrated surveillance and targeting system for mechanised forces.

➢ Another sub-category under **'Make' is 'Make-III'** that covers **military hardware that may not be designed and developed indigenously, but can be manufactured in the country for import substitution**, and Indian firms may manufacture these in collaboration with foreign partners.

What is DAP 2020?

➢ It enables the **notification of a List of Weapons or Platforms that will be banned** for import.

➢ It focuses on **Foreign Direct Investment (FDI) in defence manufacturing** and indigenization of the manufacturing prices.

➢ It also introduces **several new ideas such as the need to incorporate artificial intelligence in platforms and systems**, use of indigenous software in defence equipment and 'innovation' by **Start-ups** and **MSMEs (Micro, Small and Medium Enterprises)** as a new category of defence acquisition.

➢ **It includes following procurement categories**: Buy (Indian – Indigenously Designed Developed and Manufactured), Buy (Indian), Buy and Make (Indian), Buy (Global - Manufacture in India) and Buy (Global).

  ❍ It **increases the Indigenous Content (IC) requirement for all projects** from 40% to 50% earlier, depending on the category, to 50% to 60%.

  ❍ Only under procurement through Buy (Global), **foreign vendors can have 30% IC** from Indian companies.

Category wise IC Requirement		
Category	Vendors eligible to participate	Indigenous Content
Buy (IDDM)	Indian	Indigenous design and ≥ 50%
Buy (Indian)	Indian	In case of indigenous design ≥ 50%, otherwise≥ 60%
Buy and Make (Indian) (Buy portion may be nil)	Indian	≥ 50% of the 'Make' portion and transfer of critical technologies from the foreign vendors as per the specified range, depth and scope
Buy (Global – Manufacture in India)	Foreign and Indian	≥ 50%
Buy (Global)	Foreign and Indian	Foreign Vendor – Nil Indian Vendor ≥ 30%

What are the other Initiatives to Boost Domestic Production of Defence Equipment?

➢ Increased Capital Acquisition Budget (CAB) for Domestic Sector

Note:

> ➢ **Defence Industrial Corridors.**
> ➢ **Corporatization of the Ordnance Factory Boards**
> ➢ **Defence India Startup Challenge**
> ➢ **SRIJAN Portal**
> ➢ **Draft Defence Production and Export Promotion Policy 2020**
> ➢ **Innovations for Defence Excellence (iDEX)**
> ➢ **Mission Raksha Gyan Shakti**

INS Visakhapatnam

Why in News?

Recently, the India-made stealth guided-missile destroyer **INS Visakhapatnam was formally affiliated** to the Visakhapatnam port.

➢ This marks the **formal induction of the first of the four 'Visakhapatnam' class destroyers.**
   ○ Under the **P-15B (Visakhapatnam Class)**, a total of four warships were planned (Visakhapatnam, Mormugao, Imphal, Surat) to be inducted.
   ○ It is **indigenously designed** by the **Indian Navy's in-house Directorate of Naval Design** and constructed by **Mazagon Dock Shipbuilders,** Mumbai.

What is INS Visakhapatnam?

➢ INS Visakhapatnam is the **lead ship of the P15B class of guided missile stealth destroyers** and was commissioned on **21st November 2021.**

➢ The ship symbolises India's matured shipbuilding capability and quest for the **Make in India initiative** towards achieving **'Atmanirbhar Bharat'.**

➢ The crew of the ship abides by her motto **'Yasho Labhasva'** - a Sanskrit phrase that translates to **'Attain Glory'.**

   ○ It **embodies the indomitable spirit and capability of this mighty ship** to achieve success and glory in every endeavour.

➢ Visakhapatnam class ships are follow-on of the **Kolkata class destroyers (P-15A) commissioned** in the last decade.

➢ The ship is on her maiden visit to the port for participating in the **Presidential Fleet Review (PFR)** and **MILAN 2022**.
   ○ The fleet review is a **long-standing tradition** followed by navies all across the world and it is an assembly of ships at a **pre-designated place** for the purpose of displaying loyalty and allegiance to the sovereign and the state.

What are the Features of P15B Ships?

➢ These ships are amongst the **most technologically advanced Guided Missile Destroyers of the world**, with state-of-the-art weapon/sensor package, advanced stealth features and a high degree of automation.

➢ These ships are equipped with **BrahMos supersonic cruise missiles** and long-range Surface-to-Air Missiles (SAM).

➢ The ship has **several indigenous weapons** systems like medium range **Surface-to-Air Missile (SAMs),** indigenous torpedo tube launchers, anti-submarine indigenous rocket launchers and 76-mm super rapid gun mount.

What is the Role of P-15B in the Security of India?

➢ The I**ndian Navy's responsibilities to safeguard a large coastline of 7516 Kms** and about 1100 offshore islands along with 2.01 million sq km **Exclusive Economic Zone (EEZ)** have been enhanced in the present geopolitical scenario.

➢ Destroyers like the **P-15B class shall play an important role in the larger oceans** of the **Indo-Pacific**, making the Indian Navy a potent force.

➢ The guided missile Destroyers are **deployed for various responsibilities l**ike escort duties with the Carrier Battle Group to protect the Naval fleet against any air, surface and underwater threats.

Note:

Rohingya Muslims in India

Why in News?

Recently, the **National Investigation Agency (NIA)** has arrested six people who were allegedly part of a syndicate involved in the illegal trafficking of **Rohingya Muslims** into **Indian territory.**

Who are Rohingya Muslims?

➢ Rohingya Muslims are described by the **United Nations** as the most persecuted minority in the world.

➢ They fled their homes in 2017 to escape an alleged **crackdown by the Myanmarese military.**

➢ To **escape discrimination and violence in Myanmar, minority Rohingya** Muslims have for decades fled from the Buddhist-majority country to neighbouring Bangladesh and other countries, including India.

What are Issues & Concerns to India's Security?

➢ **Threat to National Security:** The continuance of the illegal immigration of Rohingyas into India and their continued stay in India is found to be having serious national security ramifications and poses serious security threats.

➢ **Clash of Interests:** It impacts the interests of local populations in the areas seeing large-scale influxes of illegal immigrants.

➢ **Political Instability:** It also increases the political instability when leaders start mobilising the perception of the citizens of the country against the migrants by the elites to grab political power.

➢ **Rise of Militancy:** The persistent attacks against the Muslims perceived as illegal migrants have given way to radicalisation.

➢ **Human trafficking:** In recent decades, trafficking of women and human smuggling has become quite rampant across the borders.

➢ **Disturbance in Law and Order:** The rule of law and integrity of the country are undermined by the illegal migrants who are engaged in illegal and anti-national activities.

What is the National Investigation Agency?

➢ It was constituted under the **National Investigation Agency (NIA) Act, 2008. I**t is a central agency to investigate and prosecute offences:

  ○ Affecting the sovereignty, security and integrity of India, security of State, friendly relations with foreign States.

  ○ Against atomic and nuclear facilities.

  ○ Smuggling in High-Quality Counterfeit Indian Currency.

➢ It **implements international treaties, agreements, conventions and resolutions** of the United Nations, its agencies and other international organisations.

➢ It's objective is also to **combat terror in India.** It acts as the **Central Counter-Terrorism Law Enforcement Agency.**

➢ **Headquarters**: New Delhi.

Note:

Miscellaneous

Highlights

- *Exercise Dharma Guardian 2022*
- *International Intellectual Property Index 2022*
- *Syllipsimopodi Bideni*
- *SARAS 3 Telescope*
- *First Indian to get Boltzmann Medal*
- *Exercise Vayu Shakti*
- *Flying Trainer HANSA-NG*
- *RFID of Ammunition Stock*

- *National Science Day 2022*
- *One Rank One Pension*
- *Dugong Conservation Reserve in Palk Bay*
- *Decline in Investments Through P-Notes*
- *DefExpo-2022*
- *Theyyam*
- *Pal-Dadhvav Massacre*
- *National Youth Parliament Festival 2022*

Exercise Dharma Guardian 2022

Why in News?

Recently, a Joint Military Exercise, **"Exercise Dharma Guardian-2022"**, between India and Japan will be conducted at foreign training node, **Belagavi (Belgaum, Karnataka)** from **27th February to 10th March 2022.**

What is Exercise Dharma Guardian?

➤ Exercise Dharma Guardian-2022 is an annual training event which is being **conducted in India since 2018.**

➤ The scope of this exercise covers platoon level joint training on **operations in jungle and semi urban/urban terrain.**

➤ The joint exercise schedule includes house **interventions drills, raid on terrorist hideouts in semi urban terrain, combat first aid, unarmed combat & close quarter combat firing** where both sides will jointly train, plan and execute a series of well-developed tactical drills for neutralisation of likely threats.

➤ Special emphasis is being laid on **enhancing tactical skills to fight global terrorism** and on **enhancing inter-operability between the forces and to promote Army to Army relations.**

What are Other Military Exercises between India and Japan?

➤ **Malabar**: India and Japan with the United **States and Australia** participate in the **naval wargaming exercise named Malabar.**

➢ **JIMEX (naval)**

➢ **SHINYUU Maitri (Air Force)**

International Intellectual Property Index 2022

Why in News?

Recently, **India has improved its overall International Intellectual Property (IIP) score from 38.4% to 38.6%,** and the country is ranked **43rd out of 55 countries** on the **International Intellectual Property Index.**

➤ International Intellectual Property Index is **an annual report compiled by the US Chambers of Commerce.**

➤ This year (2022) the index is **topped by the US** with 95.4%.

What is the International Intellectual Property Index?

➤ The 2020 U.S. Chamber International IP Index titled **'Art of the Possible'** creates a template for economies that aspire to become the 21st century, knowledge-based economies through more **effective IP protection.**

  ❍ In its **eighth edition**, the Index maps the IP ecosystem in 53 global economies, representing over 90% of global **Gross Domestic Product.**

  ❍ The Index **evaluates the IP framework in each economy across 50 unique indicators** which industry believes represent economies with the most effective IP systems.

Note:

➢ The indicators create a snapshot of an economy overall IP ecosystem and span **nine categories of protection:**
  - ○ Patents,
  - ○ Copyrights,
  - ○ Trademarks,
  - ○ Design Rights,
  - ○ Trade Secrets,
  - ○ Commercialization of IP Assets,
  - ○ Enforcement,
  - ○ Systemic Efficiency,
  - ○ Membership And Ratification Of International Treaties.

What is the US Chamber of Commerce?

➢ It is the **world's largest business federation** representing the interests of more than 3 million businesses of **all sizes, sectors, and regions**, as well as state and local chambers and industry associations.

➢ The group was founded in April 1912 out of local chambers of commerce at the **urging of President William Howard Taft** and his **Secretary of Commerce and Labour Charles Nagel.**

What are Indian Government Initiatives for Intellectual Property Rights (IPR) Protection?

➢ **Indian Patent Act 1970**

➢ **National Intellectual Property Rights (IPR) Policy 2016**

➢ India is also a member of the following important **World Intellectual Property Organisation (WIPO)**-administered **International Treaties and Conventions relating to IPRs.**

Syllipsimopodi Bideni

Why in News?

Recently, **a fossil unearthed in central Montana (US) of a species named S***yllipsimopodi bideni* represents the **oldest-known relative of today's octopuses and boasts 10 arms**, with two twice as long as the other eight.

➢ It has been **named after the US president, Joe Biden.**

What are the Characteristics of the Species?

➢ Syllipsimopodi, about 12 cm long, had a **torpedo-shaped body and squid-like appearance** though it was not **closely related to squids**.

➢ It also is the **oldest-known creature with suckers**, which enable the arms to better grasp prey and other objects.

➢ It represents the **only member of the octopus lineage with 10 arms, meaning two were lost in later evolution.** T
  - ○ here are numerous similar examples in the history of life on Earth – such as the reduction in the number of digits seen in meat-eating dinosaurs or horses.

➢ Syllipsimopodi **prowled the warm waters of a tropical bay – Montana** at the time was situated close to the equator. It may have been **a mid-level predator**, eating smaller invertebrates.

➢ It **drifted across oceans nearly 328m years ago.**

➢ Syllipsimopodi **pushes back by 82 million years** the origins of a group **called vampyropods** that includes today's octopuses.
  - ○ Vampyropods are **soft-bodied cephalopods** typically characterized by eight arms and an internalized chitinous shell or fin supports.
    - Cephalopods are a group of marine invertebrates that include octopuses, squids and cuttlefish.
  - ○ **Vampyropoda,** the clade combining octopods, vampyromorphs, and their relatives, is one of **three main groups of coleoid** (internally-shelled) cephalopods, the other two being **Decabrachia** (squids, cuttlefishes, bobtail squids, and Spirula) and the extinct **Belemnoidea.**

What are Characteristics of the Octopuses?

➢ Octopuses are the **most intelligent invertebrates**, and among the **most intelligent animals overall.**

Note:

- Octopuses are ocean creatures that are most famous for having eight arms and bulbous heads.
- They have three hearts and blue blood; they squirt ink to deter predators; and being boneless, they can squeeze into (or out of) tight spaces.

SARAS 3 Telescope

Why in News

Recently, the Indian researchers at RRI (Raman Research Institute) in **a study** using the **SARAS 3 radio telescope**, have conclusively **denied a recent claim of the discovery of a radio wave signal from cosmic dawn**.

- In 2018 a team of researchers from **Arizona State University (ASU) and MIT in the US** detected a signal from stars emerging in the early universe using data from the EDGES radio telescope.
- The **Cosmic Dawn** is the period from about 50 million years to one billion years after the Big Bang when the first stars, black holes, and galaxies in the Universe formed.
- The **RRI** is a**n autonomous research institute** engaged in research in basic sciences. The institute was founded in 1948 by the Indian physicist and **Nobel Laureate Sir C V Raman.**

What are Radio Waves and Radio Telescopes?

- Radio waves have the **longest wavelengths in the electromagnetic spectrum.** They range from the length of a football to larger than our planet. Heinrich Hertz proved the existence of radio waves in the late 1880s.
- Radio telescopes **collect weak radio light waves, bring it to a focus, amplify it and make it available for analysis.**
- They help study **naturally occurring radio light from stars, galaxies, black holes, and other astronomical objects.**
- These **specially-designed telescopes observe the longest wavelengths of light,** ranging from 1 millimetre to over 10 metres long. For comparison, visible light waves are only a few hundred nanometers long, and a nanometer is only 1/10,000th the thickness of a piece of paper! In fact, we don't usually refer to radio light by its wavelength, but by its frequency.

What is SARAS-3 Radio Telescope?

- SARAS is **a niche high-risk high-gain experimental effort of RRI.**
- SARAS aims to **design, build and deploy in India a precision radio telescope to detect extremely faint radio wave signals** from the depths of time, from our "Cosmic Dawn" when the first stars and galaxies formed in the early Universe.

What are the Findings?

- SARAS 3 **did not find any evidence of the signal claimed by the EDGES experiment.**
- The presence of the signal is **decisively rejected after a careful assessment** of the measurement uncertainties.
- The detection reported by EDGES was likely contamination of their measurement and not a signal from the depths of space and time.
  - However, astronomers still do not know what the actual signal looks like

First Indian to get Boltzmann Medal

Why in News?

Recently, the prestigious **Boltzmann Medal** for the year 2022 has been awarded to **Professor Deepak Dhar.**

- He became the first Indian to win this award and **shared the award with American scientist John Hopfield.**
- The chosen two scientists will be presented the medals at the **StatPhys28 conference to be held in Tokyo in August, 2022**.

What is the Boltzman Medal?

- This medal is awarded **every three years** by the **Commission on Statistical Physics of the International Union of Pure and Applied Physics (IUPAP)** at the Statphys Conference.
  - The **IUPAP** was **established in 1922 in Brussels** with 13 Member countries and the first General Assembly was held in 1923 in Paris. **It currently has 60 country members. India** joined it in **1948**.

Note:

○ It is the **only international physics organisation** that is organised and run by the physics community itself.

➢ The award **comprises medals and honours** for the contribution in Statistical Physics. The award consists of the **gilded Boltzmann medal with the inscription of Ludwig Eduard Boltzmann.**

○ **Ludwig Eduard Boltzmann** was an Austrian physicist and philosopher.

➢ It is given **only once to a person and on the condition** that that person has not won the **Nobel prize** so far.

➢ It was **initiated in 1975**, with Nobel laureate (1982) **K.G. Wilson being the first recipient.**

Who is Professor Deepak Dhar?

➢ Professor Dhar was **born 1951** and completed his graduation in Science in 1970 from University of Allahabad, then **Masters in Physics from Indian Institute of Technology,** Kanpur in 1972. Then he went to the US for PhD.

➢ Joined **Tata Institute of Fundamental Research (TIFR)** as a research fellow in 1978. He worked at TIFR over the years as a full-time professor and retired in 2016.

➢ Since then, he has joined **Indian Institute of Science Education and Research**, Pune (IISER) as a visiting faculty.

Why was he Awarded the Medal?

➢ He has been chosen for this award **for his contributions in the field of statistical physics, including universal long-time relaxation** in disordered magnetic systems, exact solutions in percolation and cluster counting problems and definition of spectral dimension of fractals.

Exercise Vayu Shakti

Why in News?

Amid the **deepening crisis in Ukraine,** the **Indian Air Force (IAF)** has decided to postpone its firepower demonstration, **Exercise Vayu Shakti.**

➢ The exercise was scheduled in the **Pokhran ranges in Rajasthan.** The last edition of Vayu Shakti was held in **February 2019.**

What is Ex Vayu Shakti?

➢ It is a **triennial exercise once every three year.** It is **aimed at showcasing the capability of the IAF to conduct full spectrum operations** (Day and Night) **,** and to see the participation of aircraft and helicopters, transport aircraft and unmanned aerial vehicles.

➢ **The frontline aircraft in the IAF inventory includes:**

○ **Russian SU-30MKI** and **MiG-29UPG fighters,**

○ **French Rafale** and **Mirage 2000,**

○ American **C-130 and C-17 transport aircraft, AH-64E Apache attack helicopters** and **CH-47F Chinook heavy-lift helicopters,**

○ Indigenous **Light Combat Aircraft (Tejas), Advanced Light Helicopter (Dhruv)** and the **Light Combat Helicopter.**

Flying Trainer HANSA-NG

Why in News?

Recently, HANSA-NG, a first of its kind, indigenously developed aircraft trainer has completed sea level trials.

➢ It is developed by the **CSIR-National Aerospace Laboratories (CSIR-NAL).**

➢ National Aerospace Laboratories (NAL), a constituent of the **Council of Scientific and Industrial Research (CSIR)** established in the year 1959 is the **only government aerospace Research & Development laboratory** in the country's civilian sector.

Note:

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➤ **Council of Scientific and Industrial Research (CSIR)** is the **largest Research and Development (R&D)** organisation in India.

What are the features of HANSA-NG?

➤ The **HANSA-NG, or HANSA-New Generation,** is one of the **most advanced flying trainers.**

  ❍ HANSA-NG is an **upgraded version of HANSA**, which saw the first flight in 1993, and was certified in 2000.

  ❍ The Centre approved **HANSA-NG in 2018** and **NAL retro-modified HANSA-3 aircraft** with a glass cockpit and got it certified by **DGCA (Directorate General of Civil Aviation).** The aircraft was demonstrated at **Aero-India** 2019.

➤ It is powered by a **Rotax Digital Control Engine** and is **designed to meet the need for trainer aircraft** by flying clubs in India.

➤ It is an ideal aircraft for **Commercial Pilot Licensing (CPL)** due to its low cost and low fuel consumption.
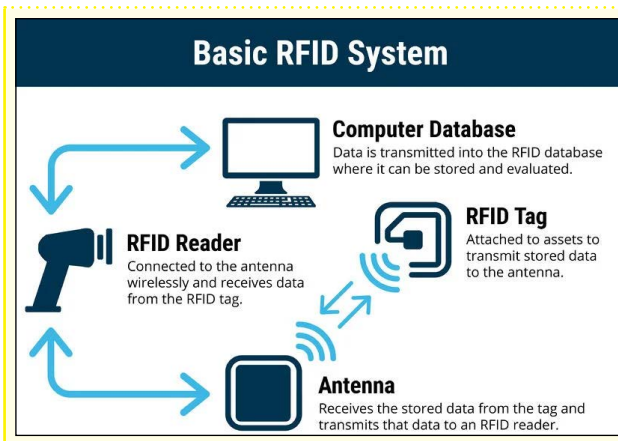

RFID of Ammunition Stock

Why in News

Recently, the Indian Army commenced implementation of **Radio Frequency Identification (RFID)** tagging of its ammunition inventory.

➤ Earlier in 2021, the Union Government **integrated the E-Way Bill (EWB) system with FasTag and RFID.**

What is Radio Frequency Identification ?

➤ RFID is a **type of passive wireless technology** that allows for tracking or matching of an item or individual.

➤ **The system has two basic parts: Tags and Readers.**

  ❍ The **reader gives off radio waves** and gets signals back from the RFID tag, while the **tag uses radio waves to communicate** its identity and other information.

  ❍ A **tag can be read from up to several feet away** and does not need to be within the direct line-of-sight of the reader to be tracked.

➤ The technology has been a**pproved since before the 1970s** but has become much more **prevalent in recent years** due to its usages in things like global supply chain management and pet microchipping.

Basic RFID System

Computer Database — Data is transmitted into the RFID database where it can be stored and evaluated.

RFID Tag — Attached to assets to transmit stored data to the antenna.

RFID Reader — Connected to the antenna wirelessly and receives data from the RFID tag.

Antenna — Receives the stored data from the tag and transmits that data to an RFID reader.

What is RFID of Ammunition Stock?

➤ The RFID implementation has been **steered by the Ordnance Services Directorate of the Indian Army**, in conjunction with **Munitions India Limited (MIL)**, Pune, the newly created entity formed post corporatisation of the **Ordnance Factories Board (OFB)**.

➤ The RFID tagging is **in conformity with global standards in consultation with GS-1 India, a Global Standards organisation** set up by the Ministry of Commerce and Industry.

➤ The RFID **tags will be interpreted and used for asset tracking** by the Enterprise Resource Application run by the **Computerised Inventory Control Group (CICG)** of the Ordnance Services Directorate

What is the Significance ?

➤ It will **transform management of ammunition and bring in a quantum jump in ammunition lot management and tracking capability.**

➤ It will make ammunition storage and use by soldiers safer and provide **enhanced satisfaction to the field Army.**

➤ It **shall lead to increased efficiency in all technical activities** carried out in Ammunition Depots and reduce inventory carrying costs.

National Science Day 2022

Why in News?

Recently, the Prime Minister greeted India's scientific community on the occasion of **National Science Day (28ᵗʰ February).**

Note:

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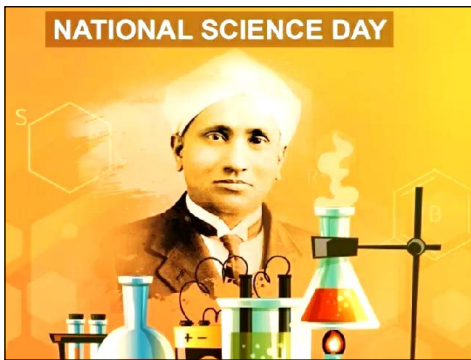
What are the Key Points?

➤ **National Science Day (NSD)** is celebrated annually on 28th February to commemorate the discovery of the **Raman Effect** by Nobel laureate and Physicist **CV Raman** on this day in 1928.

○ **In 1986,** the National Council for Science & Technology asked the Government of India to designate 28th February as NSD.

○ **Since 1987, the event has been celebrated all over the country** in schools, colleges, universities and other academic, scientific, technical, medical and research.

➤ The day aims to propagate the **message of the importance of science and its application** among the people.

➤ The purpose of celebrating this day is **to enhance scientific temper, popularisation of science and encourage innovative activities by infusing scientific temperament** in the masses and to create a positive scientific research culture.

➤ The Nodal Agency to support the celebration of NSD is the **National Council for Science & Technology Communication** (NCSTC) of the **Ministry of Science and Technology.**

➤ **Theme 2022:** "Integrated Approach in science and technology for Sustainable Future".

○ The theme focuses on a **four-fold integrated approach for a sustainable future** which are

● **Extended scientific intervention** encompassing engineering

● **Medical** and other institutions.

● Extra scientific integration involves **identification of the needs of other ministries** like Jal Shakti, Railways, among others.

● Extended science driven all **inclusive approach integrating startups** and industry.

Who was CV Raman?

➤ Chandrashekhara Venkata Raman was a physicist from Tamil Nadu.

➤ His work in the field of light scattering earned him the **Nobel Prize** for Physics in 1930.

➤ This phenomenon was **named the Raman effect.**

➤ In 1954, he was honoured with India's **highest civilian award, the Bharat Ratna.**

What is the Raman Effect?

➤ Raman is the **inelastic scattering of a photon by molecules which are excited to higher vibrational or rotational energy levels.** It is also called Raman scattering.

○ In simpler words, it is **a change in the wavelength of light that occurs when a light beam is deflected by molecules.**

○ When a beam of light traverses a dust-free, transparent sample of a chemical compound, a **small fraction of the light emerges in directions other than that of the incident (incoming) beam.**

○ Most of this scattered light is of unchanged wavelength. A small part, however, has **wavelengths different from that of the incident light** and its presence is a result of the Raman Effect.

➤ The Raman effect **forms the basis for Raman spectroscopy which is used by chemists and physicists** to gain information about materials.

○ Spectroscopy is the **study of the interaction between matter and electromagnetic radiation.**

One Rank One Pension

Why in the News?

Recently, the **Supreme Court** asked the Centre to show how many persons in the **Armed forces** have benefitted from '**One Rank One Pension**' **(OROP) policy.**

➤ The court also said that Centre's stand on OROP presented a much **"rosier picture"** than what is actually given to the **pensioners of the Armed forces.**

Note:

What is OROP?

➢ OROP means the payment of the **same pension to military officers** for the same rank for the same length of service, irrespective of the date of retirement.

  ○ Before OROP, ex-servicemen used to get pensions as per the **Pay Commission's** recommendations of the time when they had retired.

➢ **Uttar Pradesh and Punjab** have the highest number of OROP beneficiaries.

➢ Armed Forces Personnel who had retired till **30th june 2014** are covered under it.

➢ The implementation of the scheme was based on recommendation of the **Koshiyari committee**, a 10 member all-party parliamentary panel formed under the chairmanship of Bhagat Singh Koshiyari.

Dugong Conservation Reserve in Palk Bay

Why in News?

Recently, the **Tamil Nadu government** has decided to go ahead with the **establishment of India's first conservation reserve for the Dugong in Gulf of Mannar, Palk Bay.**

➢ It facilitates **India to act as the leading nation in the South Asia Sub-region** with respect to dugong conservation.

What are Dugongs?

➢ **About:**

  ○ **Dugong** (*Dugong dugon*) also called '**Sea Cow**' is one of the four surviving species in the **Order Sirenia** and it is the **only existing species of herbivorous mammal that lives exclusively in the sea** including in India.

  ○ Dugongs are an **important part of the marine ecosystem** and their depletion will have effects all the way up the food chain.

➢ **Distribution and Habitat:** They are found in over 30 countries and in India are seen in the **Gulf of Mannar, Gulf of Kutch, Palk Bay, and the Andaman and Nicobar Islands.**

➢ **Conservation Status:**

  ○ **IUCN Red List status:** Vulnerable

  ○ **Wild (Life) Protection Act, 1972:** Schedule I

  ○ **CITES:** Appendix I

➢ **Threats**:

  ○ Dugongs **graze on seagrass** and the **loss of seagrass beds** due to **ocean floor trawling** is one of the most important factors behind decreasing dugong populations in many parts of the world.

  ● **Trawling** is a **method of fishing** that involves **pulling a fishing net through the water** behind one or more boats.

  ● It is **harmful to the environment** because it damages the seafloor, coral reefs and other marine animals.

  ○ **Human activities** such as the destruction and modification of habitat, pollution, rampant illegal fishing activities, vessel strikes, unsustainable hunting or poaching and unplanned tourism are the main threats to dugongs.

  ● Dugong meat is consumed under the wrong impression that it cools down human body temperature.

➢ **Steps Taken for Conservation**:

  ○ In February 2020, India hosted the **13th Conference of Parties** (CoP) of the **Convention on the Conservation of Migratory Species of Wild Animals** (CMS), an environmental treaty under the aegis of the **United Nations Environment Programme (UNEP).**

  ● The Government of India has been a **signatory to the CMS since 1983**.

  ● India has signed **non-legally binding Memorandums of Understanding** (MoU) with CMS on the conservation and management of **Siberian Cranes** (1998), **Marine Turtles** (2007), **Dugongs** (2008) and **Raptors** (2016).

  ○ The **Ministry of Environment, Forests and Climate Change** constituted a '**Task Force for Conservation of Dugongs**' to look into issues related to conservation of dugongs and implementation of the 'UNEP/CMS Dugong MoU' in India.

Note:

- It also facilitates **India to act as the leading nation in the South Asia Sub-region** with respect to dugong conservation.

What are Conservation Reserves?

➢ **Conservation reserves and community reserves** are terms denoting protected areas of the country which **typically act as buffer zones** to or connectors and migration corridors between established national parks, wildlife sanctuaries and reserved and protected forests.

➢ Such areas are designated as conservation areas if they are **uninhabited and completely owned by the Government of India** but used for subsistence by communities and community areas if part of the lands are privately owned.

➢ These protected area categories were first introduced in the **Wildlife (Protection) Amendment Act of 2002** − the amendment to the Wildlife Protection Act of 1972.

➢ These categories were added because of reduced protection in and around existing or proposed protected areas due to private ownership of land and land use.

Decline in Investments Through P-Notes

Why in News

According to **Securities and Exchange Board of India (SEBI)** data, the value of **Participatory-Note** (P-Notes) investments in Indian markets have declined in jan 2022 in comparison to dec 2021.

What are the Reasons for Declining P-Note?

➢ This is in line with **expectations as foreign investors were aggressive sellers** throughout January 2022 continuing the trend seen since October 2021.

➢ With **Omicron** fears largely behind, investors were hopeful of a rapid recovery in the global economy. However, with the US Federal Reserve taking a 'faster and sooner' stance on rate hikes **investors have been cutting their holdings in risk assets** across the board

➢ The **Ukraine geopolitical situation** has put further pressure on already scared global investors. It is expected that **FPIs (Foreign Portfolio Investors)** will continue their net negative stance till clarity emerges on an end to the Ukraine situation.

What is a Participatory Note?

➢ P-notes are **Offshore Derivative Instruments (ODIs)** issued by registered **Foreign Portfolio Investors (FPIs)** to overseas investors who wish to be a part of the Indian stock markets **without registering themselves directly.**
  - P-notes have I**ndian stocks as their underlying assets.**
  - FPIs are **non-residents who invest in Indian securities like shares, government bonds, corporate bonds, etc.**

➢ Though P-note holders have less stringent registration requirements, t**hey have to go through a proper due diligence proces**s of the **SEBI.**

What is Foreign Portfolio Investment?
➢ FPI involves **holding financial assets from a country outside of the investor's own**.

➢ Holdings can include **stocks, GDRs (Global Depository Receipt),** **bonds, mutual funds, and exchange traded funds.**
  - A **GDR** is a bank certificate issued in more than one country for shares in a foreign company

➢ Along with **FDI (Foregn Direct Investment)**, FPI is **one of the common ways for investors to participate in an overseas economy**, especially retail investors.

➢ Unlike **FDI**, **FPI consists of passive ownership; investors have no control over ventures** or direct ownership of property or a stake in a company.

DefExpo-2022

Why in News?

Recently, the **Defense Expo 2022** has been postponed, due to logistics problems being experienced by participants.

What are the Key Points?

➢ It were to be the **12ᵗʰ edition of DefExpo** held in Gandhinagar, Gujarat in March 2022.
  - The 11ᵗʰ edition of DefExpo was held at Lucknow (Uttar Pradesh) in 2020.

➢ DefExpo is **a flagship biennial event of the Ministry of Defence**, showcasing the land, naval, air as well as homeland security systems.

Note:

➤ Spread over 1 lakh sq m., **this year's defexpo was to be the largest** since its inception in 1996.

➤ The event is expected to help boost investment, expand manufacturing capacities and capabilities, discover avenues for technology absorption and thus, contribute to furthering the target of USD 5 billion defense export by 2024 under **Atmanirbharta' in defence**.

Theyyam

Why in News?

Recently, **Kerala Tourism department** have started live streaming of an annual **temple festival called Theyyam performances**, to promote cultural tourism.


What is Theyyam?

➤ Theyyam is a **popular ritual form of dance worship in Kerala and Karnataka**, India.

➤ It consisted of **thousand-year-old traditions, rituals and customs**.

➤ The people consider Theyyam itself as a **channel to a god and they thus seek blessings from Theyyam.**

➤ Each Theyyam is a **man or a woman** who attained divine status by performing heroic deeds or by leading a virtuous life

➤ Most Theyyams are believed to be the **incarnations of Shiva or Shakti** (the consort of Shiva). Or they have strong associations with these principal deities of Hinduism.

➤ There are **over 400 theyyams**. Some of these are very important.

What are the major types of Theyyam?

➤ **Vishnumoorthi:**
  ○ There are only two Vaishnava Theyyams – **Daivatar and Vishnumoorthi.**
  ○ These Theyyams are **believed to be the incarnations of Lord Vishnu.**
  ○ This Theyyam narrates the story of **Palanthai Kannan** who was a great devotee of Lord Vishnu.

➤ **Gulikan**
  ○ Gulikan is believed to be an **incarnation of Yama,** the Hindu god of death and justice.
  ○ According to Indian mythology**, Gulikan was one of the most important warriors of Lord Shiva.**

➤ **Kuttichathan:**
  ○ It is the theyyam of Bhrahmin caste.
  ○ Kuttichathan theyyam is considered to have **originated for Lord Shiva in Vishnu Maaya.**

Major Dances in India
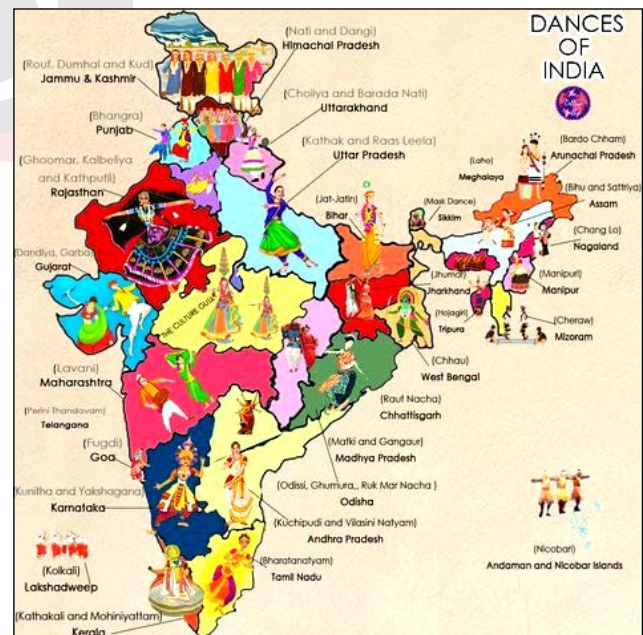
Pal-Dadhvav Massacre

Why in News

Recently, the Gujarat government marked **100 years of the Pal-Dadhvav killings**, calling it a massacre "bigger than the **Jallianwala Bagh**".

Note:

- ➢ A Gujarat government release on the centenary of the massacre described the incident as "more brutal than the Jalliawala Bagh massacre of 1919.

- ➢ Earlier, Bihar Chief Minister announced that 15th February would be commemorated as **"Shahid Diwas" in memory of the 34 freedom fighters** who were killed by police in Tarapur town (now subdivision) of Bihar's Munger district 90 years ago.

What was the Pal-Dadhvav Massacre?

- ➢ The Pal-Dadhvav massacre **took place on 7th March, 1922**, in the **Pal-Chitariya and Dadhvaav villages of Sabarkantha district**, then part of Idar state (Now Gujrat).

- ➢ The day was **Amalki Ekadashi, which falls just before Holi**, a major festival for tribals.

- ➢ Villagers from Pal, Dadhvav, and Chitariya had gathered on the banks of river Heir as part of the '**Eki movement'**, led by one Motilal Tejawat.

  - ❍ Tejawat, who belonged to Koliyari village in the Mewad region of Rajasthan, had also mobilised **Bhils** from Kotda Chhavni, **Sirohi**, and Danta to participate.

  - ❍ The **impact of the protest** was felt in Vijaynagar, Dadhvaav, Poshina and Khedbrahma, which are now talukas of Sabarkantha; the Aravalli districts, Banaskantha and Danta of Banaskantha district; and Kotda Chhavni, Dungarpur, Chittor, Sirohi, Banswada and Udaipur of Rajasthan, all of which were then princely states.

- ➢ The movement was **to protest against the land revenue tax (lagaan) imposed on the peasants** by the British and feudal lords.

- ➢ The British Paramilitary force was on hunt for Tehawat. It heard of this gathering and reached the spot.

- ➢ Nearly **200 bhils under the leadership of Tehawat lifted their bows and arrows.** But, the Britishers opened fire on them. Nearly 1,000 tribals (Bhils) fell to bullets.

  - ❍ While the British claimed some 22 people were killed, the Bhils believe **1,200-1,500 of them died.**

- ➢ Tejwat, however, escaped and later "returned to the spot to christen it 'Veer Bhumi'.

Who was Motilal Tejawat?

- ➢ Born into a **merchant (Baniya) family in the adivasi-dominated Koliyari village**, Tejawat was **employed by a landlord, where he worked for eight years**.

  - ❍ During this period he saw closely how the landlords exploited tribals and would threaten to beat them with shoes if they did not pay the tax.

- ➢ Outraged by the atrocities and exploitation of the tribal people, **Tejawat quit the job in 1920 and devoted himself to social work** and reform. To this day, local tribals recount the Pal-Dadhvav massacre in songs sung at weddings and fairs. One such song is **'Hansu dukhi, duniya dukhi'.**

National Youth Parliament Festival 2022

Why in News?

Recently, the **3rd edition of National Youth Parliament Festival (NYPF)** -2022 was conducted in the Central Hall of Parliament in New Delhi.

- ➢ **National Youth Parliament** is an innovative programme to equip youth with the understanding of parliamentary procedures and democratic processes.

What is the National Youth Parliament Festival?

- ➢ **Background:** NYPF is based on the idea given by the Prime Minister in his Mann Ki Baat Address in 2017.

- ➢ **Objective:** To hear the voice of youth in this **age bracket of 18-25** who are allowed to vote but cannot contest in elections.

  - ❍ To encourage the youth to engage with public issues, understand the common man's point of view, form their opinion and express these in an articulate manner.

- ➢ **Previous NYPF:** The 1st edition of NYPF was organised in 2019, with the theme "Be the Voice of New India and Find solutions and Contribute to Policy ''.

  - ❍ The 2nd edition of NYPF was organized in 2020, with the theme "YUVAAH- Utsah Naye Bharat Ka".

- ➢ **Salient features:**

  - ❍ All recognised educational institutions of the country are eligible to participate in this programme.

Note:

- ○ **Kishore Sabha** for the students of Class IX to XII .
- ○ **Tarun Sabha** for the students of Under Graduate/ Post Graduate level.
- ○ The registration for participation will be done by the education institutions through the web-portal.

- ○ To ensure effective implementation of the scheme, the participating institutions **may invite an MP/ ex-MP/ MINA/' Ex-MLA/ MLC/ Ex-MLC** or a Person of eminence as the Chief Guest who would oversee the performance of the Youth Parliament sitting of the institution.

- ➤ **Organized by:** Ministry of Youth Affairs and Sports**.**

■■■

Note:

Key Points

Details

Summary

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