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NOTE:

Dear Students,

Memorisation and recollection of information in Current Affairs is as important as understanding the articles. In order to enhance the learning outcomes from the Monthly Current Affairs Magazine, we are introducing following additions:



A thematic based colors has been used in the document in the boxes, tables etc to enable easy identification and recollection of various concepts and topics.



Questions are an important tool to assess and retain information. To enable this we are adding a Smart Quiz at the end of each section in the document for practicing the questions.



A wide variety of infographics have been added to ensure smoother learning experience and enhanced retention of the information. This will also help in effective presentation of information in the answer writing as well.



Places and persons in news are being presented in an objective manner through Maps, Tables & Pictures. This will help in easier recollection of factual information.

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1. POLITY AND GOVERNANCE

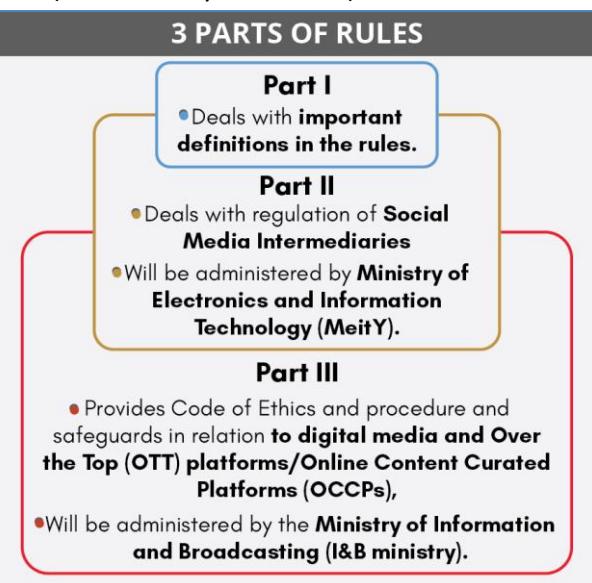
1.1. INFORMATION TECHNOLOGY (INTERMEDIARY GUIDELINES AND DIGITAL MEDIA ETHICS CODE) RULES, 2021

Why in news?

The Government of India recently notified Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021.

About Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

- Rules 2021 has been framed by the Central Government in exercise of powers under **section 87 (2) of the Information Technology Act, 2000** and in supersession of the earlier Information Technology (Intermediary Guidelines) Rules 2011.



Background

Following developments culminated in the notification of the IT rules, 2021:

- In December 2018, the Supreme Court (SC) in suo-moto writ petition (**Prajjawala case**) had observed that **Centre may frame necessary guidelines to eliminate child pornography, rape and gangrape imageries, videos and sites** in content hosting platforms and other applications.
- Subsequently, MeitY prepared the **draft Information Technology (Intermediary Guidelines) Rules 2018** to replace the rules notified in 2011 to strengthen the legal framework and make the social media platforms accountable under the law.
- In October 2020, the SC had sought the Centre's response on a **Public Interest Litigation (PIL) for regulating Over-the-top (OTT) by an autonomous body**.
- In November 2020 the Union government brought OTT platforms and **news and current affairs content on online platforms under the ambit of the I&B ministry**.
- In February 2021 the SC issued a notice to the **Central Government seeking creation of a proper board, institution or association for managing and monitoring OTT, streaming and media platforms**.

Important definitions

- Digital media** means digitized content that can be transmitted over the internet or computer networks and includes content received, stored, transmitted, edited or processed by
 - an **intermediary**; or
 - a **publisher of news and current affairs content** or a publisher of online curated content;
- News and current affairs** includes newly received or noteworthy content including analysis, especially about recent events primarily of socio-political, economic or cultural nature, made available over the internet or computer networks, and any digital media shall be news and current affairs content where the context, substance, purpose, import and meaning of such information is in the nature of news and current affairs content.
- Social media intermediary** means an intermediary which primarily or solely enables online interaction between two or more users and allows them to create, upload, share, disseminate, modify or access information using its services.
- Significant social media intermediary (SSMI)** means a social media intermediary having number of registered users in India, above such threshold as notified by the Central Government.
 - The threshold for SSMI has been set at **50 lakh (5 million) registered users**.
- Online curated content** means any curated catalogue of audio-visual content, other than news and current affairs content and made available on demand etc.
- Publisher of news and current affairs content** means an online paper, news portal, news aggregator, news agency which is functionally similar to publishers of news and current affairs content but shall not include newspapers, replica e-papers of the newspaper and any individual or user who is not transmitting content in the course of systematic business, professional or commercial activity.

Factors that necessitated formulation of new rules

- **Rapid growth in user base:** Due to Digital India programme and extensive spread of mobile phones, Internet etc. major social media platforms have huge number of users.
 - Indian OTT market is also set to **reach Rs 237.86 billion by FY25, from Rs 42.50 billion in FY19.**
- **Failure of self-regulation:** Despite having internal mechanisms to tackle illegal and inappropriate content, Social media companies have thus far been incompetent to effectively address certain harrowing issues.
 - Also, the **self-regulatory mechanism proposed by Internet and Mobile Association of India (IAMAI) was rejected by the I&B Ministry** due to issues such as conflict of interest, lack of independent third-party monitoring, well-defined Code of Ethics etc.
- **Ensuring safety and dignity of women:** Rampant abuse of social media to share morphed images of women and contents related to revenge porn have often threatened the dignity of women.
- **Persistent spread of fake news and misinformation:** Fake news, rumours etc. spread virally through platforms like WhatsApp, Twitter etc. There have been instances of targeted misinformation aimed at religious minorities and dissenting individuals, with consequences ranging from riots, death threats to actual murders.
- **Threat to democratic institutions and security landscape:** Increasing instances of misuse of social media by criminals, anti-national elements have brought new challenges for law enforcement agencies.
- **Need for an appropriate institutional mechanism:** There is no law or autonomous body to monitor and manage the digital content. Also, there is no robust complaint mechanism wherein the ordinary users of social media and OTT platforms can register their complaint and get it redressed within defined timeline.

1.1.1. GUIDELINES RELATED TO SOCIAL MEDIA INTERMEDIARIES

Key provisions

- **Due diligence to be followed by intermediaries:** Rules prescribe due diligence that must be followed by social media intermediaries like retention of user information for a period of 180 days, reporting cyber security incidents etc.
 - In case, due diligence is not followed by the intermediary, **safe harbour provisions will not apply to them.**
 - These **safe harbour provisions have been defined under Section 79 of the IT Act**, and protect social media intermediaries by giving them immunity from legal prosecution for any content posted on their platforms.
- **Grievance Redressal Mechanism:** Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officer.
 - Grievance Officer shall acknowledge the **complaint within 24 hours and resolve it within 15 days from its receipt.**
- **Ensuring Online Safety and Dignity of Users, especially Women Users:** Intermediaries shall remove or disable access within 24 hours of receipt of complaints of contents that exposes the private areas of individuals or is in the nature of impersonation including morphed images etc.
- **Two Categories of Social Media Intermediaries i.e., social media intermediaries and significant social media intermediaries (SSMI):** This distinction is done to encourage innovations and enable growth of new social media intermediaries without subjecting smaller platforms to significant compliance requirement.
- **Additional due diligence to be followed by SSMI include:**
 - **Appointment of a Chief Compliance Officer** for ensuring compliance with the Act and Rules,
 - **Appointment of Nodal Contact Person** for 24x7 coordination with law enforcement agencies
 - **Appointment of a Resident Grievance Officer** to perform the functions mentioned under Grievance Redressal Mechanism. These above officers must be residents in India.
 - **Publishing a monthly compliance report** mentioning the details of complaints received, action taken on the complaints and details of contents removed.
 - **Identification of the first originator of the information:** SSMI providing services primarily in the nature of messaging shall enable identification of the first originator of the information (without requiring disclosing the contents of any message) that is required **only for the purposes of prevention, detection, investigation, prosecution or punishment of an offence related to:** (refer to infographics given below)
 - **Publication of a physical contact address in India** on its website or mobile app or both.
 - **Deployment of technology-based measures:** To proactively identify information that depicts any act or simulation in any form depicting rape, child sexual abuse or conduct etc.

- **Voluntary User Verification Mechanism:** Users who wish to verify their accounts voluntarily to be provided an appropriate mechanism to do so with provision of demonstrable and visible mark of verification.
- **Giving users an opportunity to be heard:** In cases where significant social media intermediaries removes or disables access to any information on their own accord, then a prior intimation should be communicated to the user notice explaining the grounds and reasons for such action and the user must be provided an adequate and reasonable opportunity to dispute the action.
- **Removal of Unlawful Information:** An intermediary upon receiving order by a court or being notified by the Appropriate Govt. or its agencies should not host or publish any information which is prohibited under any law in relation to the interest of the sovereignty and integrity of India, public order, friendly relations with foreign countries etc.

Intended Benefits

- **Empowering the ordinary users of digital platforms** to seek redressal for their grievances and command accountability in case of infringement of their rights.
- **Improved deployment of new technologies** such as machine learning tool which can help tackle child sexual abuse imagery (CSAM) or abuse.
- **Safety of users** by addressing illegal activities on social media uniform across all social media platforms and ensuring the safety of the majority social media users across India.
- **Help law enforcement authorities** by identifying the first originator of the information by ceasing and curbing the nuisance of fake news, child porn and other illicit activities.
- **Clarify the responsibilities of intermediaries.**

OFFENCES

- Sovereignty, integrity & security of India,
- friendly relations with foreign States,
- public order
- incitement to an offence relating to the above
- rape, sexually explicit material or child sexual abuse material punishable with imprisonment for a term of not less than 5 years.

Concerns associated

- **Enhanced surveillance and threat to privacy of users:** The encrypted messaging apps will need to collect more user data to trace messages back to the first originator, raising concern about misuse by both platforms and governments.
- **Conflicts with extraterritorial jurisdiction norms made in the IT Act:** Since according to the new rules action can be taken against a message that originated outside India.
- **Underdeveloped and imperfect nature of artificial intelligence (AI).**
- **Self-censorship:** Removal of safe harbor can lead to internal censorship by intermediaries which have impacts on users' right to free speech.
- **Vague threshold for qualification of SSMI:** These thresholds enable the Central government to enforce discriminatory compliances. However, there is no scientific criterion to set such thresholds.
- **Potential for misuse of Verification data:** In the absence of a data protection law Social Media entities will be able to collect data of citizen IDs without any regulatory body to ensure that such data is being used only for verification.

1.1.2. GUIDELINES RELATED TO DIGITAL MEDIA AND OTT PLATFORMS

Key provisions

Rules establish a soft-touch **self-regulatory architecture and a Code of Ethics and three tier grievance redressal mechanism** for news publishers and OTT Platforms and digital media. They have been notified under **section 87 of IT Act** empowering the I&B Ministry to implement this part of the Rules which prescribe the following:

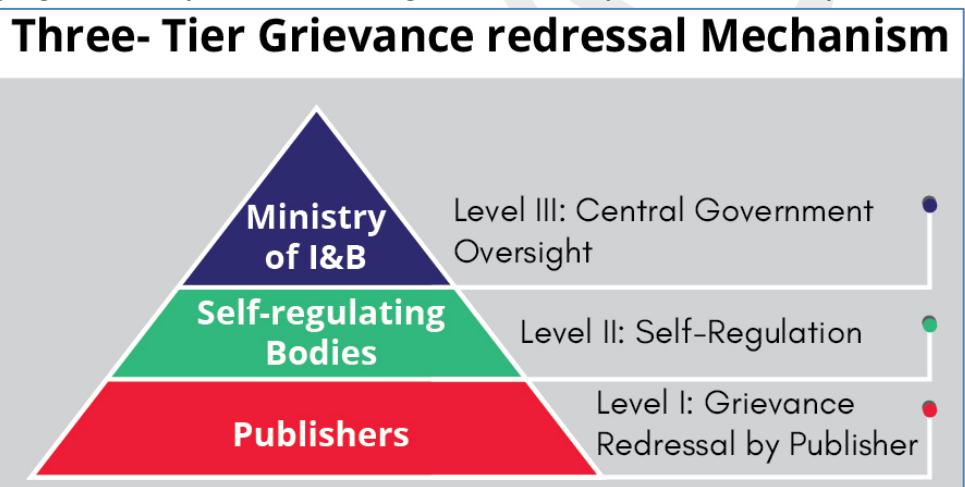
Code of Ethics

- **As applicable to OTT platforms:**
 - OTT platforms, called as the publishers of online curated content in the rules, would **self-classify the content into five age-based categories**- U (Universal), U/A 7+, U/A 13+, U/A 16+, and A (Adult) based on factors such as themes and messages, violence, nudity, drug and substance abuse etc.
 - **Platforms would be required to implement parental locks for content** classified as U/A 13+ or higher, and reliable age verification mechanisms for content classified as "A".
 - **Platforms should prominently display the classification rating** specific to each content or programme together with a content descriptor and advisory on viewer discretion at the beginning of every programme enabling the user to make an informed decision, prior to watching the programme.

- Measures to be taken to improve accessibility of online curated content by persons with disabilities.
- **General Principles:** OTTs should-
 - ✓ not transmit/publish/exhibit any content which is prohibited under any law or by any court.
 - ✓ take into consideration India's multi-racial and multi-religious context and 'exercise due caution and discretion' while featuring activities, beliefs, practices, or views of any racial or religious groups.
 - ✓ take into consideration the factors such as sovereignty and integrity of India, security of the State, public order etc. when deciding to feature or transmit or publish or exhibit any content.
- **As applicable to Publishers of News and current affairs on digital media:** They would be required to observe-
 - Norms of Journalistic Conduct of the Press Council of India under the Press Council Act, 1978;
 - Programme Code under section 5 of the Cable Television Networks Regulation Act, 1995;
 - Content which is prohibited under any law.

Three-level grievance redressal mechanism

- **Level-I: Self-regulation by the publishers:** Publisher shall appoint a Grievance Redressal Officer based in India who shall take decision on every grievance received by it within 15 days.
- **Level-II: Self-regulation by the self-regulating bodies of the publishers:** There may be one or more self-regulatory bodies of publishers. Such a body have to:
 - be headed by a retired judge of the Supreme Court, a High Court or independent eminent person and have not more than 6 members.
 - be registered with the I&B Ministry.
 - oversee the adherence by the publisher to the Code of Ethics and address grievances that have not been resolved by the publisher within 15 days.
- **Level-III: Oversight mechanism:** I&B Ministry shall formulate an oversight mechanism. It shall:
 - Publish a charter for self-regulating bodies, including Codes of Practices,
 - Issue orders and directions to the publishers for maintenance and adherence to the Code of Ethics,
 - Establish an Inter-Departmental Committee for hearing grievances: To examine complaints or grievances and make recommendations like warning, censuring, admonishing or reprimanding an entity, requiring an apology by an entity; deletion or modification of content etc.



Other Regulations

- **Blocking of information in case of emergency:** An Authorized Officer, in any case of emergency nature, will examine if it is necessary or expedient and justifiable to block content within the grounds referred to in sub-section (1) of section 69A of the Act.
- **Furnishing of information:** A publisher of news and current affairs content and a publisher of online curated content operating in the territory of India, shall
 - inform the Ministry about the details of its entity.
 - publish periodic compliance report every month mentioning the details of grievances received and action taken thereon.

Intended Benefits

- Access control measures and classification of content will restrict minors from accessing age-inappropriate content.
- Government had in recent times received many complaints from civil society and parents requesting interventions. Such grievances can now be resolved in timely manner.
- Code of ethics can regulate and enhance quality of News and current affairs on digital media at par with regular press.

- 3 tier grievance redressal mechanism establishes **enables self-regulation with minimal government intervention.**
- **Improved access to online curated content** to persons with disabilities.

Conclusion

These Rules and the efforts by the Indian government are certainly laudable and ensure that technological advancements go hand in hand with legal developments thereby creating a level playing field for all service providers and also protecting citizens of the country.

For more information also refer to the article “Regulating Over-The-Top (OTT) Platforms” in November 2020 VISIONIAS Current Affairs Magazine.

Concerns

- **Impact on Indian cinema/television:** India cinema/television provides employment and entertainment to audiences locally and globally. Rules may likely have a substantial impact on citizens' digital rights, resulting in economic harm, and may also negatively impact India's growing cultural influence.
- **Unfair competition for small digital media houses:** The definition of "publisher of news and current affairs content" privileges the established media houses, who may have a print newspaper as a significant component of their operations and could thus claim to be exempted from these guidelines.
 - Smaller and independent media houses which rely on the internet to disseminate news and information will face enhanced compliance cost and censorship.
- **Regulation of foreign news media:** If a digital news media organisation makes its content available in India in a systematic and continued manner, the provisions of the Intermediaries Rules will apply to them. However, it is unclear how foreign news media organisations are sought to be regulated by Indian authorities.
- **Forcing self-censorship:** Certain criteria provided in the Code of Ethics are vague, overbroad and can have a chilling effect on the free speech of publishers. Also, certain rules can give formal validity to the illegitimate concerns which have been raised by certain groups against artistic content.
- **Excessive governmental control over digital news and OTT content:** The Chairman of the self-regulatory body is suggested to be a retired Judge of the High Court or Supreme Court, and even though the body is expected to be appointed/elected by the media community, the I&B Ministry retains approval power over the composition of the body.
- **Lack of punitive measures for violators:** The rules are more in the nature of guidelines and there is no effective mechanism for screening or provision for punishment /fine to take appropriate action against violators.

1.2. SEDITION LAW IN INDIA

Why in news?

Supreme Court rejected a plea urging it to re-examine the constitutional validity of Section 124A of IPC, which deals with sedition.

Background

- The law was **originally drafted in 1837 by Thomas Macaulay**, the British historian-politician, **but was inexplicably omitted** when the IPC was enacted in 1860.
- Section **124A was inserted in 1870** by an amendment introduced by Sir James Stephen when it felt the need for a specific section to deal with the offence. It was one of the many draconian laws enacted to stifle any voices of dissent at that time.
- The first case was registered in 1891, when **Jogendra Chandra Bose**, editor of a newspaper 'Bangobasi' was booked for publishing an article criticising "Age of Consent Bill".
- **Bal Gangadhar Tilak, Annie Besant, the Ali Brothers, Maulana Azad, Gandhi** and very many others suffered imprisonment under this law.

About Sedition

- Indian Penal Code defines sedition (**Section 124A**) as an offence committed when any person brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards the government established by law in India by:
 - words, either spoken or written
 - signs
 - visible representation, or otherwise
- 'Disaffection' includes **disloyalty** and all feelings of enmity. However, comments without exciting or attempting to excite hatred, contempt or disaffection do not constitute an offence under this section.

- It is a **non-bailable offence**. Punishment ranges from imprisonment up to 3 years to a life term, to which fine may be added.
- A person charged under this law is **barred from a government job**. They have to live without their passport and must produce themselves in the court at all times as and when required.

Arguments in favour of Sedition

- It has its utility in combating anti-national, secessionist and terrorist elements.
 - **Many districts in different states** face **Maoist insurgency and rebel groups** who virtually run a parallel administration. These groups openly advocate overthrow of the state government.
- It **protects the elected government** from attempts to overthrow it with violence and illegal means. Continued existence of the government is essential for political stability.
- If **contempt of court invites penal action**, the same logic dictates that contempt of government should also attract punishment.

Arguments against Sedition

- **Colonial Era law:** It is a colonial relic and a preventive provision that should only be read as an emergency measure.
- **Right to Freedom of expression:** Use of Section 124A by the government might go beyond the reasonable restrictions provided under fundamental right to freedom of speech and expression as per Article 19 of the Constitution.
- **Democratic foundation:** Dissent and criticism of the government are essential ingredients of robust public debate in a vibrant democracy and therefore, should not be construed as sedition. The sedition law is being misused as a tool to persecute political dissent.
- **Lower Conviction Rate:** Though police are charging more people with sedition, few cases actually result in a conviction.
 - As per National Crime Records Bureau, **sedition cases rose from 47 to 70 between 2014- 2018 but not more than 1-2 cases resulted in conviction**. This **shows disutility** of sedition law.
 - Compared to other offences, **sedition remains a rare crime** (it accounts for **less than 0.01%** of all IPC crimes).
- **Vague provision of sedition laws:** The terms used under Section 124A like 'disaffection' are vague and subject to different interpretation to the whims and fancies of the investigating officers.
- **Other legal measure for offences against the state:** Indian Penal Code and Unlawful Activities Prevention Act (1967), have provisions that penalize "disrupting the public order" or "overthrowing the government with violence and illegal means". These are sufficient for protecting the national integrity.
 - Similarly, the **Prevention of Damage to Public Property Act** is also there for offences against the state.
- **Perception of law:** Globally, sedition is increasingly viewed as a draconian law and was revoked in the United Kingdom in 2010. In Australia, following the recommendations of the Australian Law Reform Commission (ALRC) the term sedition was removed.
 - Even in India, in August 2018, the Law Commission published a consultation paper recommending that it is time to re-think or repeal the Section 124A.
- **Inconsistent with international convention:** In 1979, India ratified the International Covenant on Civil and Political Rights (ICCPR), which sets forth internationally recognized standards for the protection of freedom of expression. However, misuse of sedition and arbitrary slapping of charges are inconsistent with India's international commitments.

Supreme Court judgement on sedition law

- The **constitutionality of sedition** was challenged in the Supreme Court in **Kedar Nath Vs State of Bihar (1962)**.
- The **Court upheld the law** on the basis that this power was required by the state to protect itself.
 - However, it had **added a vital caveat** that "a person could be prosecuted for sedition only if his acts caused incitement to violence or intention or tendency to create public disorder or cause disturbance of public peace".
- In **Balwant Singh v. State of Punjab (1995)**, Supreme Court had clarified that **merely shouting slogans does not amount to sedition**.

Viewpoint of Law Commission of India on Sedition

- In its **39th Report (1968)**, the Law Commission had rejected the idea of repealing the section.
- In its **42nd Report (1971)**, the panel wanted the scope of the section to be expanded to cover the Constitution, the legislature and the judiciary, in addition to the government established by law.
- In 2018, the Law Commission of India **published a consultation paper recommending that it is time to re-think or repeal the Section 124A of the Indian Penal Code** that deals with sedition.
- In the recent consultation paper on the sedition, the **Law Commission has suggested invoking 124A to only criminalize acts** committed with the intention to disrupt public order or to overthrow the Government with violence and illegal means.

Way Forward

- **Lessen the harmful impact of using arrest and custody:** All speech-related offences should be made bailable offences; this would lessen impact as a way of harassing anyone exercising their rights under Article 19(1)(a).
- **Non-cognisable offence:** The offences should be made non-cognisable so that there is at least a judicial check on the police acting on the basis of politically motivated complaints.
- **Burden of proof:** In the case of hate speech, it is important to raise the burden of proof on those who claim that their sentiments are hurt rather than accept them at face value.
- **Prevent Malicious complaints:** It is crucial that courts begin to take action against those who bring malicious complaints against speech acts.
- **Education law enforcement agencies:** The state police must be sufficiently guided as to where the section must be imposed and where not

Conclusion

It is abundantly clear that freedom of speech and expression within the Indian legal tradition includes within its ambit any form of criticism, dissent and protest. Dissent acts as a safety valve in a vibrant democracy and every restriction on free speech and liberty must be carefully imposed weighing its reasonableness. Therefore, as suggested by the Law commission of India, invoking 124A should be restricted only to criminalize acts committed with the intention to disrupt public order or to overthrow the Government with explicit violence and illegal means.

1.3. PARDONING POWER OF PRESIDENT AND GOVERNOR

Why in News?

Recent developments have brought the **spotlight back on the convicts in the Rajiv Gandhi assassination case**, with authorities passing the buck on who will take a decision on pleas for their release.

Background

- Former Prime Minister Rajiv Gandhi was assassinated in a bomb explosion at Sriperumbudur in Tamil Nadu (TN) in 1991.
- **Seven convicts are serving life terms in the case.** In 1999, Supreme Court (SC) sentenced four of them to death and the other three to life imprisonment.
- In 2000, the death sentence of one, Nalini, was commuted to life. In 2014, SC commuted the other three death sentences, including that of Perarivalan.
- In 2015, **Perarivalan filed a pardon plea before the TN Governor.** In September, 2018, SC asked the Governor to decide the pardon plea as he “deemed fit”.
- Following SC order, **TN Cabinet had recommended to the Governor (under Article 161) to release Perarivalan and six others.**
- Governor, however, had not acted on the recommendation for over two years, prompting Perarivalan to approach SC about the delay.
- Recently, Centre assured SC that TN Governor was set to take a call on release of Perarivalan. However, later on the **Governor’s office left a decision on pardon of all the convicts in the case to President.**

Comparison between pardoning power of President and Governor	
PRESIDENT	GOVERNOR
<ul style="list-style-type: none">• Article 72 empowers the president to grant pardons to persons who have been tried and convicted of any offence in all cases where the<ul style="list-style-type: none">○ Punishment or sentence is for an offence against a Union Law;○ Punishment or sentence is by a court martial (military court); and○ Sentence is a sentence of death.	<ul style="list-style-type: none">• Under Article 161, the governor of a state also possesses the pardoning power.• But, the pardoning power of the governor differs from that of the President in following two respects:<ul style="list-style-type: none">○ President can pardon sentences inflicted by court martial (military courts) while the governor cannot.○ President can pardon death sentence while governor cannot. Even if a state law prescribes death sentence, the power to grant pardon lies with the President and not the governor.

- | | |
|--|---|
| <ul style="list-style-type: none"> Pardoning power of the President includes the following- <ul style="list-style-type: none"> Pardon- it removes both the sentence and the conviction and completely absolves the convict from all sentences, punishments and disqualifications. Commutation- It denotes the substitution of one form of punishment for a lighter form. Remission- It implies reducing the period of sentence without changing its character. Respite- It denotes awarding a lesser sentence in place of one originally awarded due to some special fact, such as the physical and disability of a convict or the pregnancy of a woman offender. Reprieve- It implies a stay of the execution of a sentence (especially that of death) for a temporary period. | <ul style="list-style-type: none"> • Governor can also grant pardons, reprieves, respites and remission of punishment or suspend, remit and commute the sentence of any person convicted of any offence against a state law. • However, the governor can suspend, remit or commute a death sentence. |
|--|---|

1.4. REGISTERED UNRECOGNIZED PARTIES

Why in News?

Recently, a report by Association for Democratic Reforms (NGO) presented several **findings on registered unrecognised political parties (RUPP)**.

KEY FINDINGS OF THE REPORT			
 97.5% Parties Unrecognised	 Two Fold Increase	 Contribution Report Not Available	 Source of Donation
Out of 2,360 political parties registered with Election Commission of India (ECI), 2,301 or 97.50% are unrecognised.	Number of these parties increased two-fold in the last 10 years, from 1,112 in 2010 to 2,301 in 2019.	Despite ECI guidelines on submitting contribution report to respective State Chief Electoral Officers, Contribution reports of only 78 (3.39%) of RUPP are available in the public domain for 2018-19.	16.07% of total donations (90.05 crore) were made by corporate/business sectors, while individual donors contributed 81.69% in two years (2017-19).

Criteria for Recognised and Unrecognised Political Party	
Registered Unrecognised Political Party	Recognised Political Party
<ul style="list-style-type: none"> Either newly registered parties. Those which have not secured enough percentage of votes in Assembly or General Elections to become a state party. Those which have never contested in elections since being registered. 	<ul style="list-style-type: none"> ECI registers political parties and grants them recognition as national or state parties on the basis of their poll performance. A recognised political party shall either be a National party or a State party if it meets certain laid down conditions: <ul style="list-style-type: none"> It shall be treated as a recognised political party in a State, if such party has been engaged in political activity for a continuous period of five years and <ul style="list-style-type: none"> at least 1 member to the Lok Sabha for every 25 members of the House; or at least 1 member to the Legislative Assembly of that State for every 30 members of that Assembly. Total number of valid votes polled is not less than 6% at such general election in the State. If a political party is treated as a recognised political party in four or more States, it shall be known as a 'National Party'.

Associations can also contest elections without getting registered with ECI. However, they will not be eligible for availing of benefits under Representation of the People Act, 1951.

Benefits of recognized political party

- Exclusive allotment of election symbols to the candidates fielded by the party. A RUPP can select a symbol from a list of free symbols.
- Need only one proposer for filing the nomination.
- Entitled for two sets of electoral rolls free of cost.
- Get broadcast/telecast facilities over Akashvani/Doordarshan during general elections.
- Can have a maximum of 40 Star campaigners and a RUPP can nominate a maximum of 20 Star Campaigners.
- Eligible for subsidized lands for party offices.

1.5. ARBITRATION AND CONCILIATION (AMENDMENT) BILL, 2021

Why in news?

Recently, Parliament passed the Arbitration and Conciliation (Amendment) Bill, 2021.

Background

- The Arbitration and Conciliation Act, 1996 was enacted with a view to consolidate and amend the law relating to domestic arbitration, international commercial arbitration, enforcement of foreign arbitral awards and the law relating to conciliation.
- Further, the act was amended in 2015, to make arbitration process user friendly, cost effective and ensure speedy disposal and neutrality of arbitrators.
- It was again amended in 2019 to promote institutional arbitration in the country.
- Arbitration and Conciliation (Amendment) Ordinance, 2020 was brought to ensure that all the stakeholder parties get an opportunity to seek unconditional stay of enforcement of arbitral awards.

About Arbitration and Conciliation (Amendment) Bill, 2021

- Arbitration and Conciliation (Amendment) Bill, 2021 has been brought to replace the Ordinance with the objective to:

- grant unconditional stay of enforcement of arbitral awards, where the underlying arbitration agreement, contracts or arbitral award is induced by fraud or corruption;
- omit 8th Schedule of the Act which laid down the qualifications, experience and norms for accreditation of arbitrators; and
- specify by regulations the qualifications, experience and norms for accreditation of arbitrators and the said amendment is consequential in nature.
- Key features of the bill:
 - Automatic stay on awards: Bill clarifies that a stay on the arbitral award may be granted by the Court, even during the pendency of the setting aside application, if it is prima facie satisfied that the relevant arbitration agreement was induced by fraud or corruption.
 - ✓ Presently, 1996 Act allowed a party to file an application to set aside an arbitral award. However, according to 2015 Act, an automatic stay would not be granted on operation of the award by mere filing an application for setting it aside..
 - Qualifications of arbitrators: Bill removes 8th Schedule for arbitrators and states that the qualifications, experience, and norms for accreditation of arbitrations will be specified under the regulations by Arbitration Council of India (ACI).
 - ✓ 1996 Act specified certain qualifications, experience, and accreditation norms for arbitrators in a separate 8th schedule. Further, the general norms applicable to arbitrators include that they must be conversant with the Constitution of India.
 - ✓ According to 8th Schedule, arbitrator must be:
 - > an advocate under the Advocates Act, 1961 with 10 years of experience, or
 - > an officer of the Indian Legal Service, among others.

Impact of amendment bill over dispute resolution mechanism

- Check fraud and corruption: Amendment will help to ensure that all the stakeholder parties get an opportunity to seek unconditional stay of enforcement of arbitral awards, where the arbitral award is induced by fraud or corruption.
- Promote India as Hub of commercial arbitration: By omitting 8th Schedule, it will give greater flexibility and promote India as a hub of international commercial arbitration by attracting eminent arbitrators to the country.

Alternative Dispute Resolution (ADR) mechanism

- Arbitration and Conciliation are modes of the Alternative Dispute Resolution (ADR) mechanism, in which disputes are settled without litigation.
- ADR mechanism facilitate parties to deal with the underlying issues in dispute in a more cost-effective manner and with increased efficacy.



About Arbitration Council of India (ACI)

- Arbitration and Conciliation (Amendment) Act 2019 seeks for the establishment and incorporation of an independent body namely, Arbitration Council of India (ACI).
- ACI is set for grading of arbitral institutions and accreditation of arbitrators.
- ACI will be headed by a Chairperson, who has been a Judge of the Supreme Court or a Chief Justice or Judge of a High Court or an eminent person appointed by central government in consultation with the Chief Justice of India.
 - It will also have two Full-time Members from amongst eminent arbitration practitioners and academicians and one representative of a recognized body of commerce and industry shall be nominated on rotational basis as a Part-time Member.
 - Secretary, Department of Legal Affairs, Ministry of Law & Justice; Secretary, Department of Expenditure, Ministry of Finance and Chief Executive Officer, ACI will be ex-officio Members.

Issues with proposed amendment in bill

- **Prolonged litigation process:** It is very easy for the losing party to allege corruption and obtain an automatic stay on enforcement of the arbitral award. Hence, this defeats the very objective of alternate dispute mechanism by drawing parties to Courts and making them prone to prolonged litigation.
- **Floodgates of litigation:** As the amendment in act is in retrospective manner i.e. from 2015, with respect to automatic stay may open floodgates of litigation.
- **Bill does not define Fraud/ Corruption.**
- **Amendment will affect enforcement of contracts** and ultimately affect ease of doing business in India.

Conclusion

India continues to remain a laggard (at 163rd place among 190 countries, according to World Bank's Ease of Doing Business report) when it comes to enforcement of contract. Hence, this bill can be in right direction to address the issues by facilitate quick enforcement of contracts, easy recovery of monetary claims, etc.

At the same time, Courts will have to be cautious in formulating a test for granting an unconditional stay on the operation of the award.

Therefore, fraud or corruption in the underlying contract could potentially be examined and decided at various stages, before the tribunal is set up as well as before the tribunal itself, prior to the final stage of execution of the award.

 SMART QUIZ	You can scan this QR code to practice the Smart Quiz of Polity at our open test online platform for testing your understanding and recalling of the concepts.	
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2. INTERNATIONAL RELATIONS

2.1. INDIA - MAURITIUS

Why in news?

India and Mauritius signed Comprehensive Economic Cooperation and Partnership Agreement (CECPA).

About CECPA

- CECPA is the first trade agreement signed by India with a country in Africa.
- Agreement is a limited agreement, which will cover Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) measures, Dispute Settlement, Movement of Natural Persons, Telecom, Financial services, Customs Procedures and Cooperation in other Areas.
- CECPA between India and Mauritius covers various export items for India, like textile and textile articles, electricals and electronic item etc.
- Mauritius will have preferential market access into India for its various products.
- Both sides have also agreed to negotiate an Automatic Trigger Safeguard Mechanism (ATSM) for a limited number of highly sensitive products within 2 years of the Signing of the Agreement.
 - This will automatically increase levies once imports cross a given threshold.
 - ATSM is considered as an effective tool in balancing trade among multilateral partners.
 - It was also part of the trans-pacific partnership, TPP, negotiations.
- India also extended a USD 100 million Line of Credit to Mauritius to facilitate the procurement of Indian defence equipment.

Related information

- Rules of Origin** are the criteria prescribed to determine the national origin of an imported product in a country.
- Technical Barriers to Trade (TBT)** Agreement aims to ensure that technical regulations, standards, and conformity assessment procedures are non-discriminatory and do not create unnecessary obstacles to trade.
- Sanitary and Phytosanitary Measures: Measures** that are applied to protect human or animal life from risks arising from contaminants or disease-causing organisms in food.
- Dispute settlement mechanism** is to secure a positive solution to a dispute.



Other types of trade agreements

- Comprehensive Economic Partnership Agreement (CEPA):** India has signed CEPA with Japan, Sri Lanka, and South Korea
 - The CEPA is a bilateral agreement that covers trade in goods and services, investment, competition and intellectual property rights (IPRs).
 - The pact seeks to abolish import duties on most products, increase access for Indian professionals and contractual service suppliers to signing countries and liberalise investment rules.
- Comprehensive Economic Cooperation Agreement (CECA):** India signed CECA with Malaysia, Singapore, and Thailand.
 - CECA, as an integrated package, consisting of the following agreements:
 - ✓ Free Trade Agreement, which would include inter-alia, trade in goods and services, and investment
 - ✓ bilateral agreement on investment promotion, protection, and cooperation;
 - ✓ improved Double Taxation Avoidance Agreement
 - ✓ liberal Air Services Agreement, and Open Skies for Charter Flights
 - ✓ work programme of cooperation in a number of areas including health care, education, media, tourism etc.
- Free Trade Agreement (FTA):** FTA between two or more countries reduces barriers to imports and exports among them. This is provided through preferential trade terms, tariff concession etc.
- Preferential Trade Agreement (PTA):** This is unilateral trade preferences, include Generalized System of Preferences schemes under which developed countries grant preferential tariffs to imports from developing countries
 - Tariffs may be reduced at low or zero for some products.

India- Mauritius relations

- **Economic relations**
 - The bilateral trade between two countries stands at **\$690 million in 2019-20**.
 - **Under Special Economic Package by India in 2017**, many projects like Metro Express project, the new Supreme Court building, are completed and will be made operational soon.
 - **Foreign direct investment**: Mauritius was the **third top** source of foreign direct investment (**US\$ 2.0 billion**) into India in 2020-21, after Singapore and Cayman Islands.
- **Geostrategic importance owing to its position in Indian Ocean**
 - Mauritius occupies a special place in **India's vision of 'SAGAR'** (Security and Growth for All in the Region) for **building a secured regional architecture**,
 - Mauritius' **proximity to some of the most important Sea lines of communications (SLOCs)** (including the Cape route connecting Europe to Asia) and to **West Asian oil fields** has enhanced its commercial and strategic significance.
- **Defence Cooperation**
 - India financed to build **Offshore patrol vessel (OPV) Barracuda**, and agreed to provide Dornier aircraft and an **Advanced Light Helicopter Dhruv** which will help to shore up its capabilities to patrol and monitor its extensive maritime domain more effectively.
 - **Mauritius has four pacts with India**, including one whereby **India offered unconditional cooperation in the key area of maritime security** in the Indian Ocean region.
- **Cultural & humanitarian relations**
 - As a tribute to Gandhiji and the Indian freedom struggle, the **National Day of Mauritius** is celebrated on **March 12, the date of launch of Dandi Salt March**.
 - **Mauritius also hosts the World Hindi Secretariat**, which is a bilateral organization.
 - India was the first to send a **medical consignment, Hydrochloroquine (HCQ) tablet, and vaccine** to Mauritius to deal with the COVID pandemic.
- **Regional cooperation**
 - Mauritius is member of **Indian Ocean Rim Association (IORA)** and **Indian Ocean Naval Symposium** which is essential for India to seek support and maintain leadership in the Indian Ocean region.
 - **India has also extended complete support to Mauritius on issue of Chagos Archipelago** (between Mauritius and the United Kingdom).
- **People to people relations**
 - Mauritius, also called as "Little India" due to around 75% population of Indian origin.
 - Mauritius is home to a large number of people of **Indian origin who are descendants of indentured Indian workers** brought in the 19th century to work in sugarcane plantations.

Double Taxation Avoidance Agreement (DTAA)

- It is tax **treaty between two or more countries to avoid taxing the same income twice** is known as DTAA.
 - Double taxation is the **levy of tax by two or more countries** on the same income, asset or financial transaction.
- Under DTAA there are **agreed rates of tax and jurisdiction** on specified types of income arising in a country.
- When a **tax-payer resides in one country and earns income in another country, he is covered under DTAA**, if those two countries have DTAA in place.

Challenges for India- Mauritius relations

- **China factor: China's growing presence and influence in the Indian Ocean region** through Belt and Road Initiative and its maritime component remains biggest concern for India to maintain its influence in region.
- **Double Taxation Avoidance Agreement (DTAA)**: India has DTAA with Mauritius. Foreign investors often use DTAA to incorporate conduit companies in Mauritius and round-trip their investments in India through Mauritius.

Small Island Developing States (SIDS):

- SIDS were recognized as a distinct **group of developing countries facing specific social, economic and environmental vulnerabilities** at the United Nations Conference on Environment and Development (UNCED), also known as the **Earth Summit, held in Rio de Janeiro, Brazil (3-14 June 1992)**.
- This recognition was made specifically in the context of **Agenda 21**.
- Three geographical regions have been identified for the location of SIDS, namely, the **Caribbean, the Pacific and the Atlantic, Indian Ocean, Mediterranean and South China Sea**.

- **Agalega island:** India's projects in Agalega island of Mauritius caused disquiet among people of Mauritius and opposition there on lines of transparency and environmental concerns.
- **Climate change:** Sustainable development and the blue economy are existential challenges for Mauritius, India and neighbouring island states.

Way forward

- **Revisiting DTAA:** There is need to revisit DTAA and fill gaps within it to avoid tax evasion by companies.
- **Countering China's hegemony:** Since the Mauritius have great economical, militarily and diplomatic relations with India it is need for India to **approach proactively to boost relations further and maintains its influence in Indian Ocean Region to counter China's hegemony.**
- **Small Island Developing States (SIDS):** India should work constructively with SIDS's which also includes Mauritius for addressing their social, economic and environmental vulnerabilities.

2.2. INDIA-MALDIVES

Why in news?

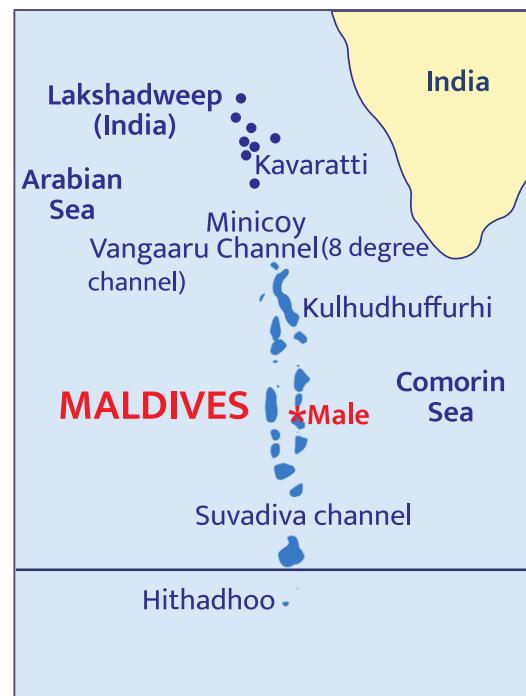
India has signed \$50 million **defence agreement with Maldives to boost maritime capability.**

More about news

- \$50 million credit line agreement for defence projects was signed between **the Finance Ministry of Maldives and the Export Import Bank of India.**
 - Agreement will facilitate **capability building in the maritime domain** and facilitate regional HADR (Humanitarian Assistance and Disaster Relief) efforts.
 - India will develop, support and maintain an important **naval facility for the Maldivian armed forces.** E.g., Maldives National Defense Force Coast Guard Harbor at Sifvaru (**Uthuru Thilafalhu**).
- Agreement was signed pursuant to the request Maldives made in April 2013 for support and cooperation of India to assist Maldives for enhancing the capability of the Defence Forces of the Maldives in exercising jurisdiction and undertaking maritime surveillance of its Exclusive Economic Zone and islands.
- India also signed project execution contract for the construction of roads in Addu. This is the first of the 8 major infrastructure projects being implemented jointly by the Maldives and India to be awarded.

Exim Bank of India

- It was established under **Export-Import Bank of India Act, 1981** as the apex financial institution for financing, facilitating and promoting India's international trade.
- Bank primarily lends for exports from India including supporting overseas buyers and Indian suppliers for export of developmental and infrastructure projects, equipment, goods and services from India.
- It is regulated by **RBI.**



India- Maldives relations

- India was among the **first to recognize Maldives after its independence in 1965** and establish diplomatic relations with the country by India's mission at Male in 1972.
- **Importance of Maldives for India**
 - **Strategic importance:** Maldives holds strategic importance for India under the India's '**Neighbourhood First**' policy and **SAGAR** (Security and Growth for All in the Region) due to its location in the Indian Ocean.
 - ✓ Also, this is **important for India to tackle growing Chinese influence** in Indian Ocean Region through Belt and Road initiative.
 - ✓ Maldives is situated at the **hub of commercial sea-lanes running through the Indian Ocean.** More than 97% of India's international trade by volume and 75% by value passes through the region.
 - **Role of net security provider:** Maldives is positioned like a '**toll gate**' for security check between the western Indian Ocean and the eastern Indian Ocean.

- **Regional cooperation:** Maldives is member of SAARC, SASEC, Indian Ocean RIM Association and the Indian Ocean Naval Symposium hence it is important for India to have Maldives on board to maintain its leadership in the region.
- **Other aspects of bilateral relation**
 - **Economic and Commercial importance**
 - ✓ India is Maldives' 4th largest trade partner after UAE, China and Singapore.
 - ✓ Greater Male Connectivity Project to be developed by India will be a major catalyst for the Maldivian economy in the future through jobs and economic activity.
 - **Capacity Building and Training:** India offers several scholarships to Maldivian students under the SAARC Chair Fellowship and Indian Technical and Economic Cooperation (ITEC) training & scholarships,
 - **Defence cooperation**
 - ✓ India provides the largest number of training opportunities for Maldivian National Defence Force (MNDF), meeting around 70% of their defence training requirements.
 - ✓ Also, India has gifted a 'Made in India' Patrol Vessel named "KAAMIYAB".
 - **People-to-People contacts**
 - ✓ India is largest source of tourist arrivals in Maldives. However, in 2019 India has moved to 2nd and is placed just below China.
 - ✓ India is also a preferred destination for Maldivians for education, medical treatment, recreation and business.
 - ✓ Indians are the second largest expatriate community in the Maldives.
 - **Humanitarian Assistance:** India has offered assistance to Maldives after the tsunami that struck Maldives on December 26, 2004, and following tidal surges in May 2007.
 - India provided water aid to the Maldivian capital of Male, though Operation NEER after a fire destroyed the biggest water treatment plant.
 - **Maldives was the first country to receive Covid-19 vaccines from India.**
 - **Cultural Relations:** Both the countries share long cultural links and continuous efforts are underway to further strengthen these linkages, for this India Cultural Center (ICC), was established in Male in July 2011.

Concerns with India- Maldives relations

- **China factor:** The bigger concern has been Maldives' growing strategic proximity to China and endorsement of the Belt and Road Initiative and its maritime component.
- **Political Instability:** It is major concern for India in 2015 arrest of opposition leader Mohamed Nasheed on terrorism charges and the consequent political crisis have posed a real diplomatic test for India's neighbourhood policy.
- **Terrorism and radicalisation:** Number of Maldivians drawn towards terrorist groups like the Islamic State (IS) and jihadist groups has been increasing. Where possibility to use Maldivian islands as a launch pad for terror attacks against India cannot be rejected.
- **Economic crisis:** International Monetary Fund report projected that the Maldives' external debt will hit 51.2 per cent of GDP in 2021 from 34.7 per cent in 2016 as a result of the projects, this will deter developments among India and Maldives.
- **Concerns of workers:** In 2018 Maldives denied work permits to nearly 2000 Indians working there and job advertisements which categorically state 'Indians need not apply', also denied visa to Indians which further exacerbated tensions.
- **India's vote against Maldives:** In 2018 India voted against and even campaigned against Maldives in its bid to secure a non-permanent seat to the UN Security Council.

Way forward

- **Anti-terrorism cooperation:** India needs to enhance anti-terrorism cooperation with Maldives to check entry of Maldivians in terrorist activities and strengthen security cooperation.
- **Cooperation and projects:** India need speed up cooperation and timely deliver projects to compete with China who have timely delivered projects in Maldives.
- **Gujral doctrine:** India needs to adhere Gujral doctrine that set of five principles to guide the conduct of foreign relations with India's immediate neighbours.
 - Does not ask for reciprocity but gives and accommodates what it can in good faith and trust.

- No South Asian country should allow its territory to be used against the interest of another country of the region.
- No country should interfere in the internal affairs of another.
- All South Asian countries must respect each other's territorial integrity and sovereignty.

2.3. MILITARY COUP IN MYANMAR

Why in News?

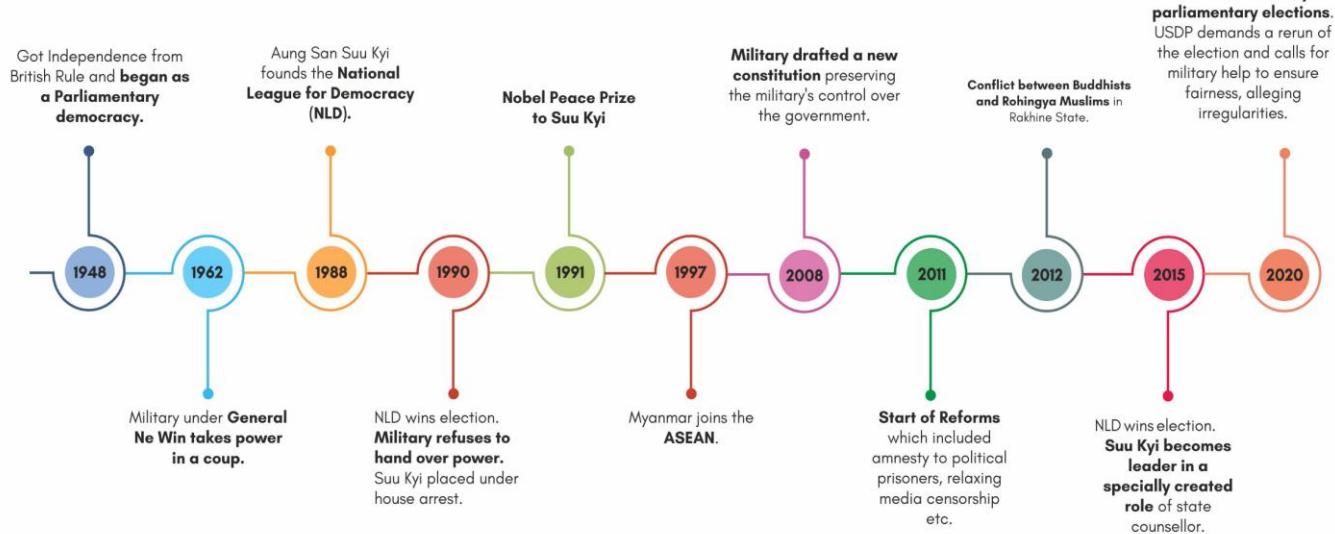
Recently, **Myanmar (formerly called Burma) military grabbed power in a coup**, third time in the nation's history since its independence from British rule in 1948.

More on News

- Military (also called Junta and Tatmadaw) has **alleged that the general elections held in November 2020 were full of irregularities** and that therefore, the results are not valid.
 - In 2020 elections, Aung San Suu Kyi led the National League for Democracy (NLD) to a landslide win.
- **Military had demanded** that the United Elections Commission of Myanmar, or the government, or outgoing parliamentarians prove at a special session before the new parliament convenes, that the elections were free and fair.
 - The demand had been rejected.
- **Military, under Min Aung Hlaing, then launched a coup, announcing a yearlong state of emergency** and arresting opposition figures, including de facto leader Aung San Suu Kyi, and civil society activists.
- This marked the **end of Myanmar's short-lived experience with democracy which began in 2011**, when military implemented parliamentary elections and other reforms.



TIMELINE OF KEY EVENTS IN MYANMAR'S HISTORY



Why a stable Myanmar important for India?

- **Geopolitical interests:** Myanmar sits at the intersection of India's 'Neighbourhood First' and 'Act East Policy' policies, and therefore is an essential element in India's practice of regional diplomacy in the Indo-Pacific, and serves as a land bridge to connect South Asia and Southeast Asia.
- **Strategic location:** It serves as a buffer between India and China. Myanmar has coastal access to the Bay of Bengal. It connects Bangladesh, China and the restive Northeastern states of India. It is also close to India's Nicobar archipelago.
- **National security:** Myanmar-China border has become the epicentre of local armed separatist groups operating on Myanmar soil, and Indian groups, ranging from ULFA in Assam to the NSCN (IM) in Nagaland.
- **Economic interests:** India has interests in natural resources of Myanmar and also developing certain projects like India–Myanmar–Thailand trilateral highway and Kaladan multi-modal project which is to link India's landlocked north-eastern States to the Myanmar Port of Sittwe, located in the Bay of Bengal. Instability in Myanmar will be a roadblock to these ambitions.
- **Countering China:** A failed Myanmar state at India's doorstep and a weakened Myanmar falling into the clutches of China as a satellite state will pressurize India to do Beijing's bidding in regional affairs.

Global reaction to Myanmar's Military Coup

- **Bangladesh called for peace and stability** and said it hoped to continue the process of voluntary repatriation of Rohingya refugees with its neighbor.
- **China said it hopes all sides in Myanmar can manage their differences** within the constitutional and legal framework.
- **EU is drafting a blacklist of military leaders** to adopt restrictive measures targeting those directly responsible.
- **India expressed deep concerns on coup** and called for democratic process to be upheld.
- **UN Secretary-General said it was a "serious blow to democratic reforms."**
- **US imposed sanctions on leaders of the coup.** It targeted individuals as well as companies.

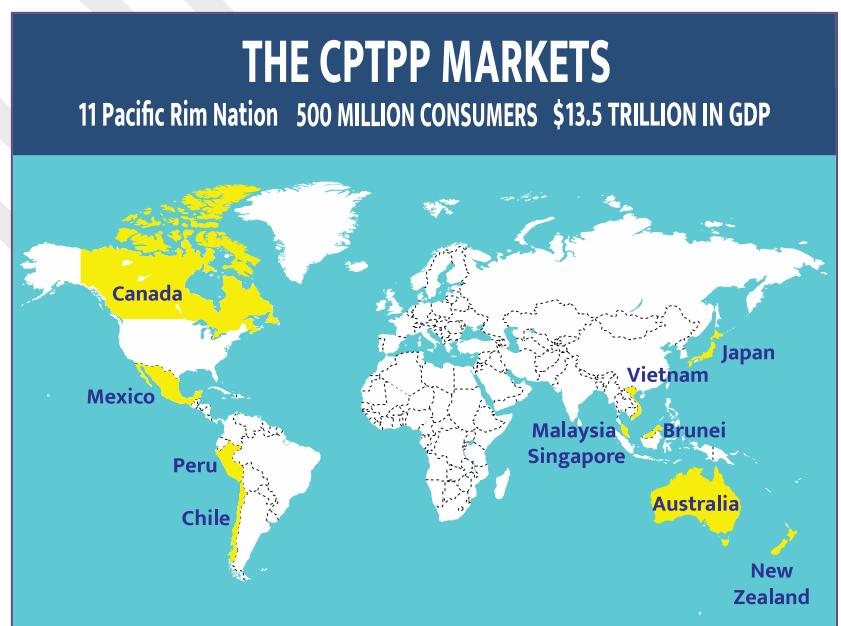
2.4. COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP (CPTPP)

Why in News?

Recently, U.K. announced to apply for joining CPTPP- a free trade block of Asia-Pacific Countries.

About CPTPP

- CPTPP is a **free trade agreement between 11 countries in the Asia-Pacific**.
- CPTPP was **formerly known as the Trans-Pacific Partnership (TPP)**. After U.S. withdrawal from TPP, remaining members renamed it CPTPP.
- CPTPP features ambitious market-access commitments in trade in **goods, services, investment, labour mobility and government procurement**.
 - It also covers the **protection of the environment and labour rights**.
- **Benefits of CPTPP**
 - **Removes tariff on an estimated 95% of goods** traded between CPTPP members and will provide greater market access.
 - **Provides easier Rules of origin (ROO) criteria** to importers/exporters.
 - **Facilitates free cross-border data flow** and removal of localization requirements.
 - Product specific rules to help **Small and Medium Enterprises**.



- **Simple, effective, clear and predictable customs procedure** to reduce processing times at the border.
- **Increases predictability and eliminates many barriers** encountered at the border, such as quotas and labour market tests.

Why U.K. wants to join CPTPP?

- It reflects U.K.'s post-Brexit Pacific tilt and will allow U.K. to deepen ties with some of the fastest-growing markets and major economies, including Mexico, Malaysia and Vietnam.
- Joining CPTPP will cut tariffs for UK industries, including food and drink and cars, while also creating new opportunities for modern industries like tech and services, ultimately supporting and creating high-value jobs across the U.K.
- Unlike European Union (EU) membership, joining CPTPP **does not require U.K. to cede control over laws, borders, or money**.
- **Other benefits include:** modern digital trade rules that allow data to flow freely between members, remove unnecessary barriers for businesses, and protect commercial source code and encryption.

About Brexit

- UK voted to leave the EU in 2016 and officially left the trading bloc - it's nearest and biggest trading partner - on 31 January 2020.
- EU is a grouping of 27 countries that trade and allow their citizens to move freely between nations to work and live.

2.5. NEW START NUCLEAR ARMS TREATY

Why in News?

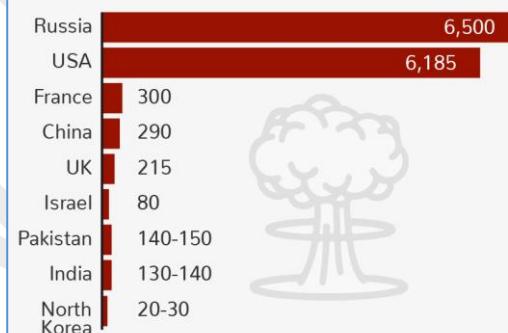
Recently, United States (US) has extended the New START (Strategic Arms Reduction Treaty) nuclear arms control treaty with Russia for five years.

About New START Treaty

- New START treaty is the **last remaining arms reduction pact between US and Russia**.
- The treaty, which first went into effect in 2011, **limits U.S. and Russia to deploying no more than 1,550 strategic nuclear warheads each** and imposes **restrictions on the land- and submarine-based missiles and bombers to deliver them**.
- The treaty contains **detailed procedures for the implementation and verification** of the central limits on strategic offensive arms (discussed above) and all treaty obligations.
- **New START replaced the 1991 START I treaty**, which expired December 2009, and superseded the 2002 Strategic Offensive Reductions Treaty (SORT), which terminated when New START entered into force.

Estimated global nuclear warhead arsenals

Includes warheads in stockpile as well as retired, but still intact



TREATIES BETWEEN U.S. AND RUSSIA

Treaty	Status	Term Valid
Strategic Arms Limitation Talks (SALT I)	Expired	1972-1977
Strategic Arms Reduction Treaty (START I)	Expired	1994-2009
Strategic Offensive Reductions Treaty (SORT or Moscow Treaty)	Replaced by New START	2003-2011

2.6. EXTRADITION

Why in News?

Recently, UK court paved way for Nirav Modi to be extradited to India.

More on News

- Fugitive jeweller Nirav Modi is **wanted by Central Bureau of Investigation and Enforcement Directorate** in Rs 13,500-crore bank loan fraud case.
 - India-UK Extradition Treaty was signed in 1992

About Extradition

What is Extradition?	<ul style="list-style-type: none"> According to Supreme Court, Extradition is the delivery on the part of one State to another of those whom it is desired to deal with for crimes of which they have been accused or convicted and are justifiable in the Courts of the other State. An Extradition request for an accused can be initiated in the case of under-investigation, under-trial and convicted criminals. Extradition Act 1962 (modified in 1993) provides India's legislative basis for extradition .
What are Extradition Treaties?	<ul style="list-style-type: none"> 1962 Act defines an Extradition Treaty as a Treaty, Agreement or Arrangement made by India with a Foreign State, relating to Extradition of fugitive criminals and includes any treaty, agreement or arrangement relating to Extradition of fugitive criminals made before 15th August 1947, which extends to and is binding on, India. Most of them seem to embody at least five principles: <ul style="list-style-type: none"> Extradition applies only with respect to offences clearly stipulated as such in the treaty Should be an offence under the national laws of the extradition requesting country as well as of the requested country. Requested country must be satisfied that there is a <i>prima facie</i> case made out against the offender/accused. Extradited person must be proceeded against only against the offence (rule of speciality) for which his extradition was requested. He must be accorded a fair trial.
Nodal Authority for Extradition	<ul style="list-style-type: none"> Consular, Passport & Visa (CPV) Division, Ministry of External Affairs (MEA).
Who can make a request and Which countries can India make an extradition request to?	<ul style="list-style-type: none"> Can only be made by MEA. Extradition is not available at the request of members of the public. India is able to make an extradition request to any country (1962 provides for the process of extradition with non-Treaty foreign States also). <ul style="list-style-type: none"> In case of urgency, India may request the provisional arrest of the fugitive, pending presentation of an extradition request. Indian nationals who return to India after committing offences in West Asia/Gulf countries are not extradited to those countries and are prosecuted in India in accordance with Indian Law. Extradition of Indian Nationals to following countries is barred by the bilateral Extradition Treaty: France, Germany, Spain, UAE, Bulgaria, Kuwait, Poland, Russia, Turkey, Ukraine, Uzbekistan, Vietnam. Also, India may not extradite national to following countries: Saudi Arabia, Bahrain, Belarus, Hong Kong, South Korea, Mongolia, Nepal, and Tunisia.
Bars to Extradition	<ul style="list-style-type: none"> No treaty: In absence of a treaty, States are not obligated to extradite aliens/nationals No treaty crime: Extradition is generally limited to crimes identified in the treaty which may vary in relation to one State from another, as provided by the treaty. Military and Political Offences: Extradition may be denied for purely military and political offences. Terrorist offences and violent crimes are excluded from the definition of political offences. Want of Dual Criminality: Dual criminality exists when conduct constituting the offence amounts to a criminal offence in both India and the foreign country. Procedural considerations: Extradition may be denied when due procedure as required by the 1962 Act is not followed.

 SMART QUIZ	<p>You can scan this QR code to practice the Smart Quiz of International Relations at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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3. ECONOMY

3.1. FIFTEENTH FINANCE COMMISSION REPORT

Why in News?

The Fifteenth Finance released its report which was recently tabled in the Parliament.

About the Fifteenth FC

- The Commission was **chaired by Mr. N.K. Singh** and the report was titled '**Finance Commission in COVID times.**'
- The Commission was required to **submit two reports**. The first report, consisting of recommendations for the **financial year 2020-21**. The final report with **recommendations for the 2021-26 period**.
 - Also, this is also the **first ever Commission to have given recommendations spanning a period of six years**, that is, 2020-26.
- The Commission was asked to prepare a report on a many new and unique demand via its Terms of Reference (ToR).

Finance Commission

The Finance Commissions are commissions periodically **constituted by the President of India under Article 280 of the Indian Constitution**. Following are key functions assigned to it-

- **Distribution of 'net proceeds' of taxes between Center and the States**, to be divided as per their respective contributions to the taxes.
- **Determine factors governing Grants-in-Aid to the states** and the magnitude of the same.
- To make recommendations to the president as to the measures needed to augment the Fund of a State to **supplement the resources of the panchayats and municipalities** in the state on the basis of the recommendations made by the finance commission of the state.
- **Any other matter related to it by the president** in the interest of sound finance.

How the Terms of Reference (ToR) of Fifteenth FC were different from previous commissions?

- **Fiscal Consolidation Roadmap:** The Commission was asked to review the current finances of both state and central government and recommend a fiscal consolidation roadmap for sound fiscal management.
 - This task became all the more difficult with the **outbreak of the Pandemic**, as the need for fiscal room became dire.
- **Indirect Taxation System:** The commission was asked to evaluate the impact of the GST, including the need for payment of compensation for possible loss of revenues for 5 years, and abolition of a number of cesses.
- **Measurable Performance Incentives:** The Commission was asked to consider proposing of measurable performance-based incentives for States, at the appropriate level of government in areas like deepening of tax nets, population control, power sector reforms etc.
- **Using 2011 population against 1971 population data:** The Commission had to use the population data of 2011 while making its recommendations. This was tricky as there was an active opposition from Southern States on usage 2011 population data.
- Other unique demands:
 - Analyzing the possibility of **creation of a non-lapsable defense fund**.
 - Reviewing the present arrangements on **financing Disaster Management initiatives**.

What are the recommendations given by the Fifteenth FC Report for 2021-26 period?

Vertical Devolution	<p>The commission has recommended maintaining the vertical devolution at 41%.</p> <ul style="list-style-type: none">• The idea is to maintain the same level of devolution as recommended by 14th FC (i.e., 42%), the adjustment of about 1% has been made due to the changed status of the erstwhile State of Jammu and Kashmir into the new Union Territories of Ladakh and Jammu and Kashmir.• Gross tax revenue for 5-year period is expected to be 135.2 lakh crore. Out of that, Divisible pool (after deducting cesses and surcharges & cost of collection) is estimated to be 103 lakh crore.
Horizontal Devolution	<p>The horizontal devolution is primarily based on three principles namely need of states, equity among states and performance of states. To balance all three principles, six criteria are used to calculate tax distribution- Income Distance, Area, Population (2011), Demographic Performance, Forest and Ecology and Tax and Fiscal Transfers.</p>

	<p style="text-align: center;">CRITERIA FOR DEVOLUTION</p> <table border="1"> <thead> <tr> <th>Financial Year</th> <th>Income Distance</th> <th>Area</th> <th>Population (1971)</th> <th>Population (2011)</th> <th>Demographic performance</th> <th>Forest & Ecology</th> <th>Tax & Fiscal Efforts</th> </tr> </thead> <tbody> <tr> <td>14th FC 2015-20</td> <td>50</td> <td>15</td> <td>10</td> <td>7.5</td> <td>17.5</td> <td>15</td> <td>2.5</td> </tr> <tr> <td>15th FC 2020-21</td> <td>45</td> <td>15</td> <td>15</td> <td>12.5</td> <td>10</td> <td>12.5</td> <td>2.5</td> </tr> <tr> <td>15th FC 2021-26</td> <td>45</td> <td>15</td> <td>15</td> <td>12.5</td> <td>10</td> <td>12.5</td> <td>2.5</td> </tr> </tbody> </table>	Financial Year	Income Distance	Area	Population (1971)	Population (2011)	Demographic performance	Forest & Ecology	Tax & Fiscal Efforts	14th FC 2015-20	50	15	10	7.5	17.5	15	2.5	15th FC 2020-21	45	15	15	12.5	10	12.5	2.5	15th FC 2021-26	45	15	15	12.5	10	12.5	2.5
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	<ul style="list-style-type: none"> Income distance: Income distance is the distance of a state's income from the state with the highest income. Income of a state has been computed as average per capita GSDP during the three-year period between 2016-17 and 2018-19. A state with lower per capita income will have a higher share to maintain equity among states. Demographic performance: The demographic performance criterion has been used to reward efforts made by states in controlling their population. States with a lower fertility ratio will be scored higher on this criterion. Forest and ecology: This is calculated as the share of the dense forest of each state in the total dense forest of all the states. Tax and fiscal efforts: This criterion has been used to reward states with higher tax collection efficiency. It is measured as the ratio of the average per capita own tax revenue and the average per capita state GDP during the three years between 2016-17 and 2018-19. 																																
Grants to States	<ul style="list-style-type: none"> Revenue deficit grants: 17 states will receive grants worth Rs 2.9 lakh crore to eliminate revenue deficit. Sector-specific grants: Sector-specific grants of Rs 1.3 lakh crore will be given to states for sectors like health, education, implementation of agricultural reforms etc. A portion of these grants will be performance-linked. State-specific grants: The Commission recommended state-specific grants of about 0.5 lakh crore. These will be given in the areas of social needs, administrative governance and infrastructure etc. Grants to local bodies: The total grants to local bodies will be Rs 4.36 lakh crore (a portion of grants to be performance-linked). <ul style="list-style-type: none"> Grants to local bodies (other than health grants) will be distributed among states based on population and area, with 90% and 10% weightage, respectively. Also, no grants will be released to local bodies of a state after March 2024 if the state does not constitute State Finance Commission and act upon its recommendations by then. Disaster risk management: The Commission recommended retaining the existing cost-sharing patterns between the centre and states for disaster management funds. The cost-sharing pattern between centre and states is: (i) 90:10 for north-eastern and Himalayan states, and (ii) 75:25 for all other states. State disaster management funds will have a corpus of Rs 1.6 lakh crore (centre's share is Rs 1.2 lakh crore). Incubation of new cities: Finance Commission has recommended Rs 8,000 crore to states for incubation of new cities, granting Rs 1,000 crore each for eight new cities. The focus of urban grants for million-plus cities is improvement in air quality and meeting the service level benchmark of solid waste management and sanitation. 																																
Total transfers	<ul style="list-style-type: none"> Including total grants of Rs. 10.33 lakh crore and tax devolution of Rs. 42.2 lakh crore (41% of 103 lakh crore), aggregate transfers to States is estimated to remain at around 50.9 per cent of the divisible pool during 2021-26 period. Total transfers (devolution + grants) constitutes about 34 per cent of estimated Gross Revenue Receipts of the Union. 																																
Fiscal Management and Consolidation Roadmap	<p>The Commission suggested that the centre bring down fiscal deficit to 4% of GDP by 2025-26. For states, it recommended the fiscal deficit limit (as % of GSDP) of: (i) 4% in 2021-22, (ii) 3.5% in 2022-23, and (iii) 3% during 2023-26.</p> <ul style="list-style-type: none"> Extra annual borrowing worth 0.5% of GSDP will be allowed to states during first four years (2021-25) upon undertaking power sector reforms including: (i) reduction in operational 																																

	<p>losses, (ii) reduction in revenue gap, (iii) reduction in payment of cash subsidy by adopting direct benefit transfer, and (iv) reduction in tariff subsidy as a percentage of revenue.</p> <ul style="list-style-type: none"> It recommended forming a high-powered inter-governmental group to: (i) review the Fiscal Responsibility and Budget Management Act (FRBM), (ii) recommend a new FRBM framework for centre as well as states and oversee its implementation. The inverted duty structure between intermediate inputs and final outputs present in GST needs to be resolved. Revenue neutrality of GST rate should be restored which has been compromised by multiple rate structure and several downward adjustments. A comprehensive framework for public financial management should be developed. An independent Fiscal Council should be established with powers to assess records from the Centre as well as states. 	<p>The diagram illustrates the 'Twenty-first Century Fiscal Architecture' as a building structure. At the top is a triangular roof labeled 'Twenty-first Century Fiscal Architecture'. Below the roof are three vertical columns supporting the structure. The left column is labeled 'Fiscal Rules', the middle column is labeled 'Public financial management process', and the right column is labeled 'Fiscal Institutions'. At the base of the building is a horizontal foundation labeled 'Information technology'.</p>
Other recommendations	<ul style="list-style-type: none"> Disaster Management Fund: Setting up the state and national level Disaster Risk Mitigation Fund (SDRMF), in line with the provisions of the Disaster Management Act. Defense Modernization Fund: Creation of a separate non-lapsable fund for modernization of defense and internal security. The objective is to bridge the gap between defense budget allocations and the projected budgetary requirements. <ul style="list-style-type: none"> The Commission has also recommended that Rs 1,000 crore per annum should be allocated from this fund for the welfare of families of the defense and CAPF personnel who sacrifice their lives in frontline duties. Health: States should increase spending on health to more than 8% of their budget by 2022. Primary healthcare expenditure should be two-thirds of the total health expenditure by 2022. Centrally sponsored schemes (CSS): A threshold should be fixed for annual allocation to CSS below which the funding for a CSS should be stopped (to phase out CSS which outlived its utility or has insignificant outlay) 	

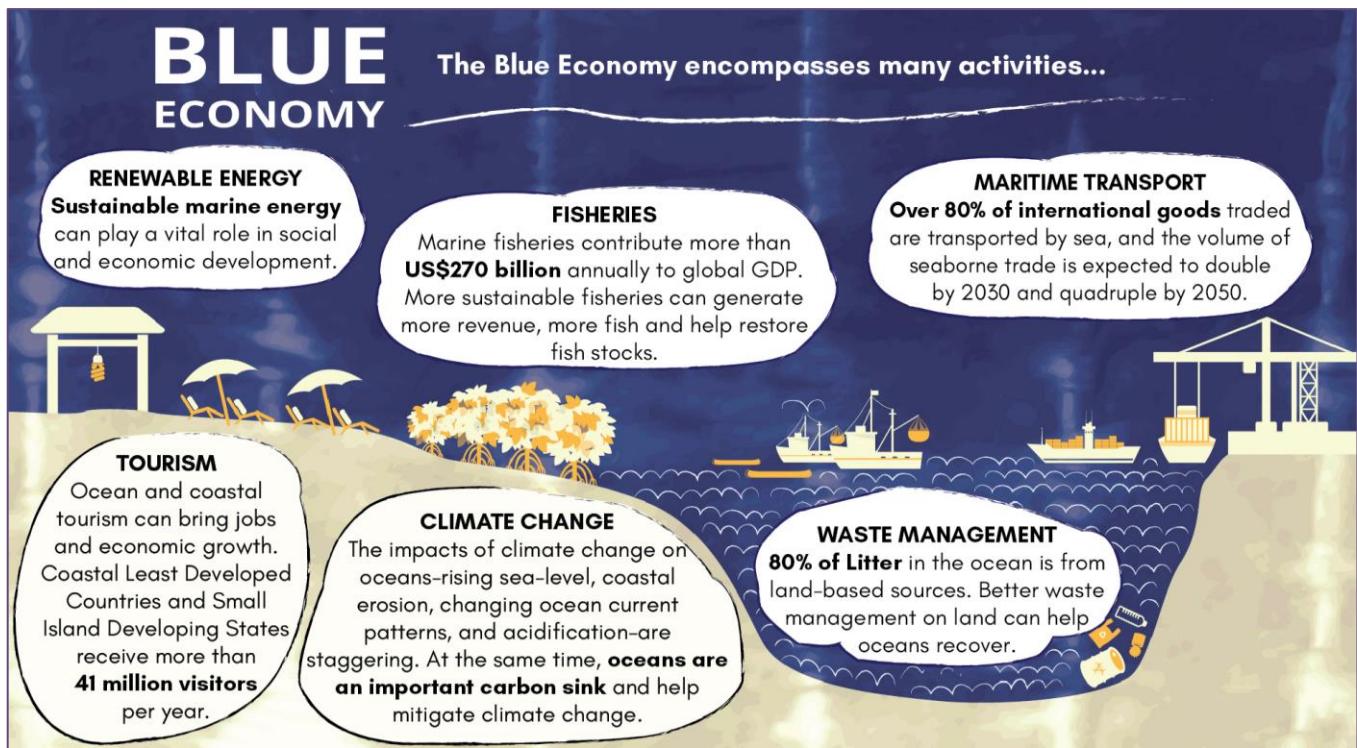
3.2. DRAFT BLUE ECONOMY POLICY FOR INDIA

Why in news?

Ministry of Earth Sciences (MoES) has rolled out the **Draft Blue Economy policy for India** in the public domain inviting suggestions and inputs from various stakeholders including industry, NGOs, academia, and citizens.

About Blue Economy

- According to World Bank, Blue Economy refers to **sustainable use of ocean resources for economic growth**, improved livelihood and jobs, and ocean ecosystem health.
- Blue Economy seeks to promote **economic growth, social inclusion and the preservation or improvement of livelihoods as well as ensuring environmental sustainability** of the oceans and coastal areas.
- The economic philosophy of the Blue Economy was first introduced in 1994 by **Professor Gunter Pauli** at the United Nations University (UNU) to reflect the needs of future growth and prosperity, along with the threats posed by global warming.



Draft Blue Economy Policy:

- The draft blue economy policy document **outlines the vision and strategy that can be adopted by the Government of India to utilize the plethora of oceanic resources available in the country.**
- **The policy document aims:**
 - to enhance contribution of the blue economy to India's GDP,
 - improve lives of coastal communities,
 - preserve marine biodiversity,
 - maintain the national security of marine areas and resources.
- It is in line with the **Government of India's Vision of New India by 2030** stressing the need for a coherent policy integrating different sectors so as to improve the lives of the coastal communities and accelerate development and employment.
 - 6th Dimension of Vision 2030 deals with **scaling up Sagarmala**, India's coastline and ocean waters will power development.
- It **highlights blue economy as one of the ten core dimensions** for national growth.
- The draft policy framework emphasizes policies **across several key sectors to achieve holistic growth of India's economy.**
- The document recognizes the following **seven thematic areas-**
 - ✓ **National accounting framework for the blue economy and ocean governance:** A new robust mechanism to generate and collect reliable data pertaining to the Blue Economy would be developed.
 - ✓ **Coastal marine spatial planning and tourism:** India needs to adapt the Coastal Marine Spatial Planning (CMSP) approach of the Intergovernmental Oceanic Commission (IOC)-UNESCO guidelines and to establish a national level authority to define the scope and nature of CMSP. This will allow integration of various sectors of blue economy, local communities private players and government to meet local and national needs.
 - ✓ **Marine fisheries, aquaculture, and fish processing:** To increase sustainability of marine fisheries through a new national policy along with proper legal and institutional framework for effective its management.
 - ✓ **Manufacturing, emerging industries, trade, technology, services, and skill development:** To ensure high capital infusion through public-private partnership (PPP) and enhance Ease of Doing Business in the sector.
 - ✓ **Logistics, infrastructure and shipping, including trans-shipments:** Government should formulate a 30 year holistic shipbuilding plan across existing and Greenfield shipyards under Atmanirbhar Bharat to boost shipping and ship building sector.
 - ✓ **Coastal and deep-sea mining and offshore energy:** Envisaged to launch a **National Placer Mission** to explore workable placer deposits and evolve a roadmap for their extraction. India will also take a lead role in exploration of cobalt rich Sea Mount Ferro Manganese Crust (SFMC) in the Indian Ocean.

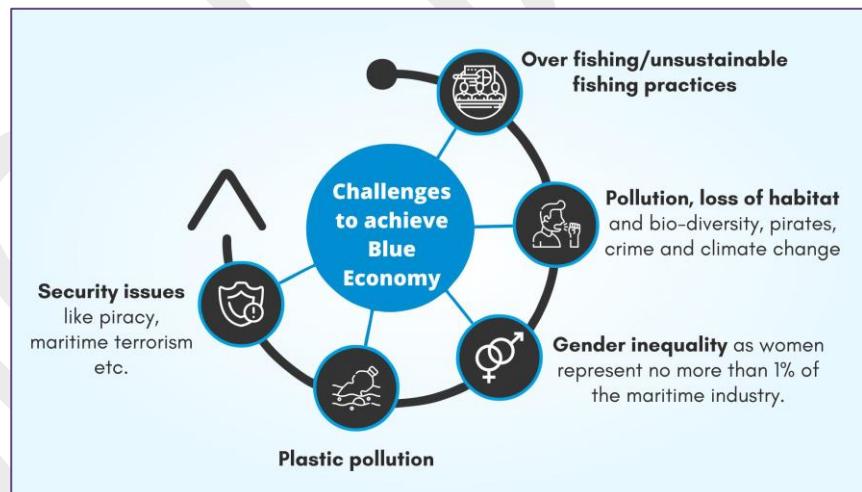
- ✓ **Security, strategic dimensions, and international engagement:** MDA needs to be strengthened by integrating national geo-intelligence framework and space applications along with international partnerships with key partner countries.

Significance of Blue Economy

- **Economic Growth-** Indian Ocean Region is of strategic importance to India's economic growth as the most of the country's oil, and gas is imported through the sea. Further, this dependency is expected to rise by 2025 exponentially.
 - India's Exclusive Economic Zone of over 2 million square kilometers has a huge living and non-living resources with significant recoverable resources such as crude oil and natural gas.
- **Harnessing Ocean Wealth-** Mining of **polymetallic nodules** present in the seabed in the Central Indian Ocean Basin can help India improve availability of nickel, copper, cobalt and manganese. Through an agreement with the **International Seabed Authority**, India has a right to explore and mine polymetallic nodules over 750,000 square km.
- **Trade potential-** The Indian Ocean Region presents tremendous trade potential for the country. The countries in the **Indian Ocean Rim Association (IORA)** exhibited significant dynamism in the past few years as the trade in the region increased by over four times.
- **Fisheries and Aquaculture-** India has a **National Fisheries policy** for promoting 'Blue Growth Initiative' which focus on sustainable utilization of fisheries wealth from the marine and other aquatic resources.
- **Sustainable Development-** The Ocean-based Blue Economy is the next sunrise issue for development experts. Blue Economy is based on the idea to use locally available resources and employ renewable inputs, for example, '**ocean-as-a-resource**' that addresses the problems of resource scarcity and enables sustainable development.
 - ✓ This marine based economic development will **reduce environmental risks and mitigate ecological challenges**. As a result, the optimized and responsible resource utilization will enable to achieve balanced socio-economic development.

Placer deposit

- It is an **accumulation of valuable minerals** formed by gravity separation from a specific source rock during sedimentary processes.
- India is rich in Placer minerals like **nickel, uranium, copper, thorium, titanium, poly metallic sulphides, poly metallic manganese nodules, coastal ilmenite, garnet and zircon** etc.
- **Polymetallic nodules and polymetallic massive sulphides** are the two mineral resources of commercial interest to developers in the Indian Ocean.
 - **Typically found at 4 to 5 km in water depth**, polymetallic nodules are golf-to-tennis ball-sized nodules containing nickel, cobalt, iron, and manganese that form over millions of years on the sediment of the seafloor.



Way Forward

- **Encourage emerging industries:** There are other emerging industries such as aquaculture, marine biotechnology, ocean energy and sea-bed mining that have the potential to create jobs and spur worldwide economic growth.
- **Inclusive Framework:** Indian Ocean region needs a sustainable and inclusive framework for international partnerships. Countries in the region need to not only coordinate and manage the growing security challenges in the region but also realize the substantial economic potential the Indian Ocean area presents.
- **Cooperation:** India's commitment to strengthen its cooperation with the regional partners and build a sustainable ocean economy aligns well with its domestic mega-modernisation projects that will enable the nation to harness the full potential of the Ocean based Blue Economy.
- **Economic incentives:** The granting of economic incentives to small fishermen to adopt sustainable practices, or the increase in protected maritime areas, to recover the habitats and productivity of the seas.

3.3. COMPANIES (CORPORATE SOCIAL RESPONSIBILITY (CSR) POLICY) AMENDMENT RULES, 2021

Why in news?

Recently, Ministry of Corporate Affairs brought into effect the **Companies (CSR Policy) Amendment Rules, 2021** by amending amend the Companies (CSR Policy) Rules, 2014.

About Corporate Social Responsibility (CSR)

- It is a management concept whereby companies **integrate social and environmental concerns in their business operations** and interactions with their stakeholders.
- In 2013, **Companies Act 2013 introduced changes** with respect to company formation, administration, and governance, and incorporated an **additional section i.e. Section 135 on CSR obligations** for companies listed in India.
 - With this, **India became the first country to legislate CSR activities** under Companies Act 2013.
- Every qualifying company requires **spending of at least 2% of its average net profit (Profit before taxes) for the immediately preceding 3 financial years** on CSR activities in India.
- **Companies applicable to**
 - annual turnover of 1,000 crore and more or
 - net worth of Rs. 500 crore and more or
 - net profit of Rs. 5 crore and more.
- CSR is also **applicable to branch and project offices of a foreign company in India.**
- **Various CSR activities includes:**
 - eradicating extreme hunger and poverty,
 - promotion of education, promoting gender equality and empowering women,
 - reducing child mortality and improving maternal health ensuring environmental sustainability,
 - employment enhancing vocational skills,
 - social business projects.
 - **Contributions to the PM CARES Fund or any other fund set up by the Central government** for socio economic development and relief and welfare of the schedule caste, tribes, other backward classes, minorities and women will also be considered for CSR
- In 2019, amendments introduced, which require companies to **deposit the unspent CSR funds into a fund prescribed under the Act** within the end of the fiscal year.

CSR TIMELINE	
VOLUNTARY TO MANDATORY	
How corporate social responsibility came under a legal framework in the past decade	
2009	Corporate Voluntary Guidelines released to encourage corporate to voluntarily achieve high standards of corporate governance
2011	India endorses United Nations Guiding Principles on Business and Human Rights; National Voluntary Guidelines on social, Environmental and Economic Responsibilites of Business released to mainstream the concept of business responsibility
2012	Securities and Exchange Board of India mandates top 100 listed companies by market capitalisation to file business Responsibility Report based on National Voluntary Guidelines
2013	Companies Act,2013 enacted
2014	Section 135 of Companies Act, 2013 on Corporate Social Responsibility (CSR) comes into force
2015	High level committee on CSR makes recommendations on the CSR framework
2016	Companies Law Committee reviews the recommendations of the high-level committee on CSR
2018	<ul style="list-style-type: none"> • A second high-level constituted to review the CSR framework • Preliminary draft of National Action plan on Business and Human Rights released by the Ministry of Corporate Affairs
2019	<ul style="list-style-type: none"> • National guidelines on responsible business conduct released • The Companies (Amendment) Bill, 2019, tabled in parliament

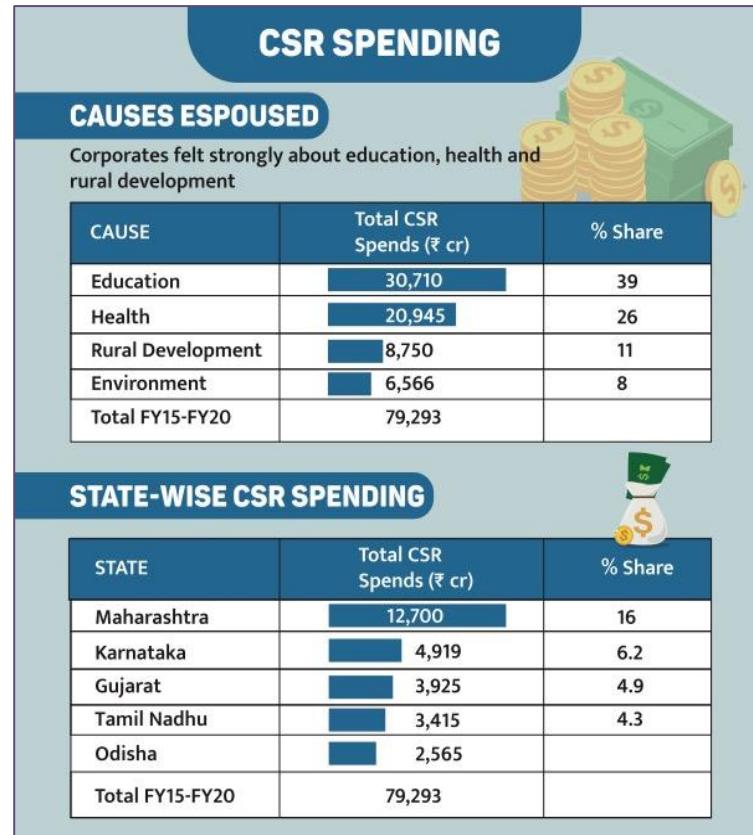
BENEFITS OF CORPORATE SOCIAL RESPONSIBILITY (CSR)		
BENEFITS FOR COMPANY	BENEFITS FOR SOCIETY	BENEFITS FOR GOVERNMENT
<ul style="list-style-type: none"> • Positive business reputation and organisational growth • Better financial performance by operational costs savings • Employee retention and satisfaction • Avoiding government regulations 	<ul style="list-style-type: none"> • Better employment opportunities • Improved standard of living • Gender and socio-economic parity • Natural and environmental protection 	<ul style="list-style-type: none"> • Reduced fiscal expenditure • Effective corporate governance • Increased public trust

Newly amended rules

- **Exclusion from CSR activities:**
 - Activities undertaken in pursuance of normal course of business of the company.
 - ✓ Exception: A company engaged in R&D of a new vaccine, drugs and medical devices in their normal course of business may undertake such activities related to Covid 19 for the financial year 2021, 2021-22 & 2022-23 as CSR.
 - Activities undertaken outside India, except training of National or International level Indian sportspersons.
 - Contribution of any amount to any political party;
 - Activities benefitting employees of the company, as under Code on Wages, 2019.
 - Activities supported by the company on sponsorship basis, for deriving marketing benefits for its products/services.
 - Activities carried out for fulfilment of any other statutory obligations under any law in force in India.
- **Mandatory registration:** Entities have to register itself with the Central Government and fill the CSR-1 Form electronically with the Registrar of Companies from April 1, 2021.
- **Engagement of external organizations** for design, evaluation, capacity building and monitoring of CSR projects has also been permitted.
- **Annual Action plan:** CSR committees of Companies shall be required to formulate an annual action plan and recommend the same to the board of the company.
- **Administrative overheads:** Board of company needs to ensure administrative overheads do not exceed 5% of the total CSR expenditure for a financial year.
 - Administrative overheads mean the expenses incurred for general management and administration of CSR functions in the company and explicitly excludes any expenses incurred for the designing, implementation, monitoring, and evaluation of a particular CSR project.
- **Surplus cannot be utilised for other purposes:** Surplus from any project cannot be utilized for any business profits and must be reinvested into the same CSR project or may be transferred into fund.
- **Impact assessment:** Any corporation with a CSR obligation of Rs 10 Cr or more for the 3 preceding financial years would be required to hire an independent agency to conduct impact assessment of all of their projects with outlays of Rs 1 Cr. or more.
- **Mandatory disclosure of CSR projects:** It would be placed on the website of the company to ensure accountability of companies and a closer check on the compliance of rules.

Challenges and criticism of Corporate Social Responsibility (CSR)

- **Tool to tax:** CSR is also criticized as a tool to tax corporates which already face high taxation in the country, which makes India unattractive for business.
- **Skewed pattern of spending:** About 65% of CSR spending was incurred on education and healthcare while eradication of hunger, rural development and environmental protection are at lower side of expenditure.
- **Regional disparity:** Companies usually undertake CSR activities in areas where work can be done without any hardship. This may be the reason that aspirational districts and North-east region with their poor infrastructure and development level, are not in the focus of companies



- **Non-compliance:** It is found that 50% of the companies were unable to spend the mandated amount on CSR and in the past five years after the act was enforced, 70% of the companies still do not have a strategy to implement CSR activities.
- **Cheating and favoured donations:** It is found out that companies made donations to charitable trusts, which are well known and then received them back after deduction of minor commissions.

Way forward

- **Community and employee participation:** Improving community relations, involving employees in CSR can help motivate them and encourage their personal and professional development by inculcating social and ethical values.
- **Collaboration for efficiency:** Facilitating collaboration between NGOs, agencies involved in environmental and social work will enable better utilization of CSR funds.
- **Evaluation and monitoring:** CSR activities and projects needs to be monitored periodically to prevent fraudulent activities and complete project within stipulated time.
- **Fair and balanced expenditure:** Encouraging corporates to spend in neglected areas such as aspirational districts and North east region to have regional parity in socio-economic development.
- **Relaxation and incentives:** Government should further provide relaxation and incentives in corporate tax to corporates complying with CSR regulations.

3.4. DIGITAL PAYMENT ECOSYSTEM

Why in news?

Reserve Bank of India (Digital Payment Security Controls) directions, 2021 has been published to strengthen India's digital payments architecture.

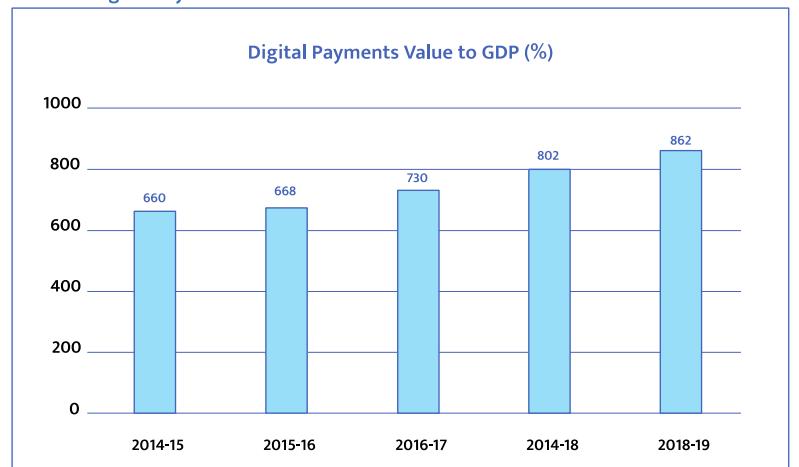
About Reserve Bank of India (Digital Payment Security Controls) directions, 2021

- Directions are issued to set up a **robust governance structure and implement common minimum standards** of security controls for digital payment products and services in following way.
- **Applicability:** Applicable to Regulated Entities (REs) **scheduled commercial banks, small finance banks, payment banks and credit card-issuing NBFCs.**
 - It is also applicable to **third-party payment applications, payment operators and gateways.**
- **Under the directions**
 - REs shall formulate a policy with approval of Board for digital payment products and services.
 - REs shall implement multi-tier application architecture, segregating application, database and presentation layer in the digital payment products and services, by following 'secure by design' approach.
 - REs shall have **Fraud Risk Management.**
 - A **real time/ near-real time reconciliation framework** for all digital payment transactions between RE and all other stakeholders.
 - **Customer Protection, Awareness and Grievance Redressal Mechanism.**
 - **Internet banking, Mobile payments application, Card payments security controls.**

Need for directions

- To tackle **burgeoning instances of outages, frauds and cyber breaches** in digital payments ecosystem.
- **Improve security, control and compliance** among banks, gateways, wallets and other non-banking entities.
- **Protect the confidentiality of customer data** and integrity of data and processes associated with the digital product/services offered.
- **Efficient and effective dispute resolution mechanism** and handling of customer grievance.
- Helps to achieve its goal of a **less-cash and cash less economy.**

Value of Digital Payments to GDP- India

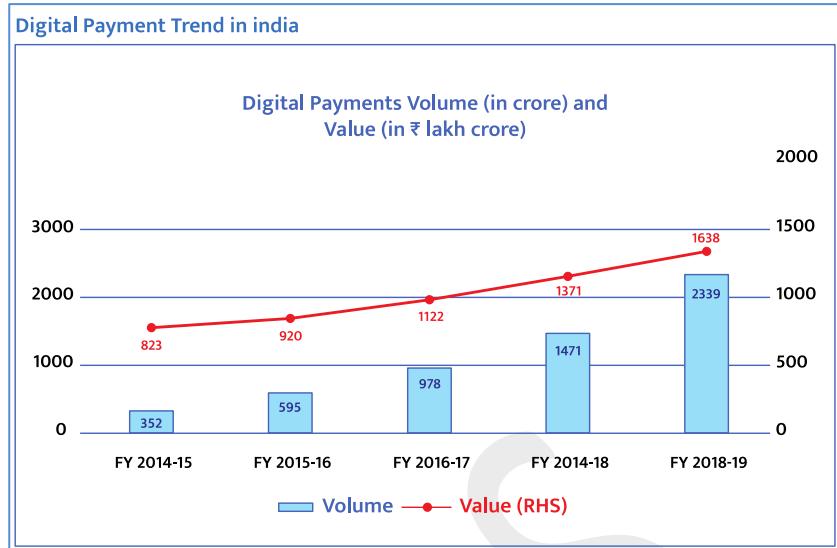


About Digital Payment Ecosystem in India

- Payment and Settlement Systems Act, 2007 (PSS Act, 2007)** defines **Digital Payments/electronic funds transfer** as any transfer of funds by way of instruction, authorization or order to a bank to debit or credit an account maintained with that bank through electronic means and includes point of sale transfers; ATM transactions, direct deposits or withdrawal of funds, transfers initiated by telephone, internet and, card payment.
- Digital payment can be done by different modes like **NEFT, RTGS, IMPS, debit and credit cards, UPI** etc.
- In India **volume segment of digital payments is dominated by Debit Cards, PPIs and IMPS** and constitute close to 50 % of the total volume.
- While, **value segment is dominated by RTGS and NEFT** and constitute about 53 % of the total value of Digital Payments.
- Digital transactions per capita** increased from 2.38 transactions per capita in financial year 2014 to **22.42** in financial year **2019**.

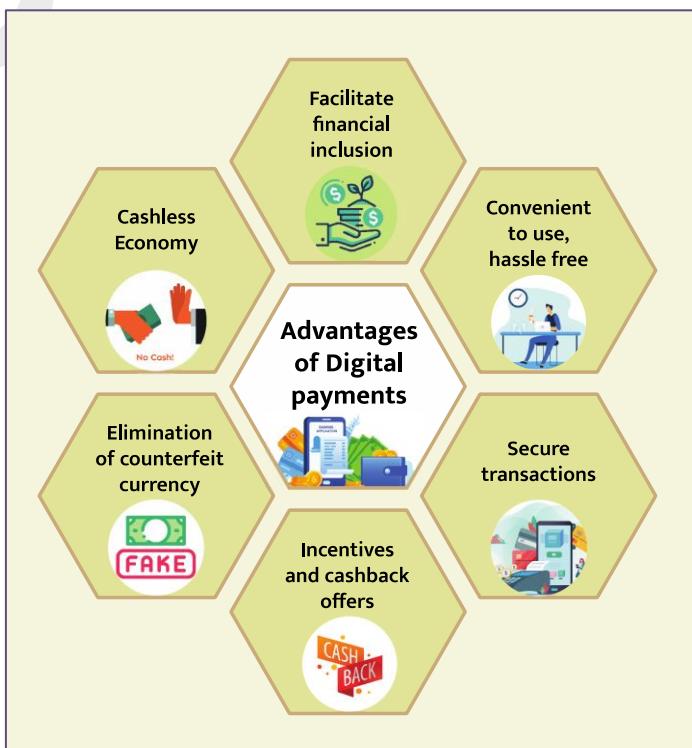
Challenges in digital payment ecosystem

- Technological:** Lack of integration of online payment systems which run across different platforms. This results in results in processing, payment delays etc.
- Security:** Digital transactions are vulnerable to cybercrimes and risks for data theft is the biggest concern.
 - Hacking and security breaches can cause financial loss of consumers and reputational loss for the company.
- Infrastructure:** Small Service providers **don't have enough resources** to invest in electronic payment infrastructure. (E.g. Point of Sales machines).
 - A report by Nielson in 2019 concluded that **70% of the rural population does not have an active internet facility** with states like West Bengal, Bihar, Jharkhand and Odisha having the lowest internet penetration.
- Digital illiteracy:** According to NSSO data, only **4.4% of rural households and 23.4% of urban households** own computers, while out of this **42% of urban households have a computer with an internet connection and only 14.9% of rural households.**



Various initiatives taken to promote digital payments

- Payment and Settlement Systems (PSS) Act 2007:** It provides for the regulation and supervision of payment systems in India and designates RBI as the authority for that purpose and all related matters.
- Rationalisation of Merchant Discount Rate (MDR)**
 - MDR is the rate charged to a merchant for the payment processing of debit and credit card transactions.
- Payments Infrastructure Development Fund (PIDF) by RBI** to encourage acquirers to deploy Points of Sale (PoS) infrastructure.
- DigiShala:** Free Doordarshan DTH educational channel for creating awareness regarding various forms of electronic payment.
- Vittiya Saksharta Abhiyan:** It aims to actively engage the youth/ students of Higher Education Institutions to encourage and motivate all payers and payees to use a digitally enabled cashless economic system for transfer of funds.



- **Transaction charges and Merchant discount rate:** Transaction charges for consumers and MDR for retailers is seen as the additional tax, hence they hesitate to prefer digital mode of transaction.

Further initiatives required to improve digital payments ecosystem

- **Standardisation of devices and browsers:** It is needed to make payments uniform across all kinds of browsers, devices, and gateways and engage the confidence of users in digital payment systems.
- **Awareness and education:** Many consumers are still wary about using digital payments and technology; hence companies need to educate their customers on the security advantages of digital payments in more traditional manner.
- **Internet and mobile phone accessibility:** Currently, internet and mobile phones accessibility at rural and remote areas is poor, hence government and stakeholders involved needs to take initiatives in improving internet penetration.
- **Incentives and rewards:** More consumers will switch to digital payments if they receive higher rewards and redeeming rewards with simplicity and faster.

3.5. ASSET RECONSTRUCTION COMPANY (ARC)

Why in news?

Union budget 2021-22 has proposed a new ARC/Bad Bank to consolidate and take over existing bad loans.

About the Proposal

- The ARC/bad bank proposed in the Budget **will be set up by banks** (both state-owned and private sector banks), and there **will be no equity contribution from the government**.
 - However, the **Government may provide sovereign guarantee** that could be needed to meet regulatory requirements.
- It will have an **Asset Management Company (AMC)** to manage and sell bad assets.
 - AMC manages funds for individuals and companies. They make **well-timed investment decisions** on behalf of their clients to grow their finances and portfolio.
- It will look to **resolve stressed assets of Rs 2-2.5 lakh crore** that remain unresolved in around 70 large accounts.
- The **transfer of stressed assets** to the ARC will happen **at net book value**.
- The **bank will get 15% cash and 85% security receipts** against bad debt that will be sold to the ARC.
- This structure will **reduce the load of stressed assets** on the bank balance sheet and look to resolve these bad debts in a **market-led way**.

About Asset Reconstruction Company (ARC)

- An ARC or bad bank is a special type of financial institution (FI) that **buys the debtors of the bank** at a mutually agreed value and attempts to recover the debts or associated securities by itself.
 - A bad bank **makes a profit** in its operations if it manages to **sell the loan at a price higher** than what it paid to acquire the loan from a commercial bank.
- **Narsimham Committee – I (1991)** first envisaged setting up of a central Asset Reconstruction Fund to facilitate Banks to improve their balance sheets by cleaning up their non-performing loans portfolio.
- **Asset Reconstruction Company (India) Ltd or Arcil, was first ARC** set up in 2002 by four banks: SBI, ICICI Bank, PNB and IDBI Bank.
- ARCs are incorporated as **company** under the Companies Act.
- They are **registered with Reserve Bank of India (RBI) under SARFAESI Act, 2002**.
- RBI mandates ARCs to maintain a **minimum NOF (Net Owned Fund) of Rs 100 crore and a capital adequacy ratio of 15%** of its risk weighted assets.
- **The Insolvency and Bankruptcy Code (IBC), 2016**, allows ARCs to acquire equity through conversion of debt into equity. However, they are not allowed to bid for equity in stressed companies directly.
- **Since the enactment of SARFAESI Act**, many ARCs have come into existence. However, the establishment of new ARC was driven by the fact that existing ARCs were not able to deal with the problems of NPA as
 - **Exiting ARCs are thinly capitalized:** Of the existing ARCs, only 3-4 are adequately capitalised, while more-than-dozen remaining are thinly capitalized. This necessitates the need to set up a new structure to resolve stressed assets urgently.

- **Slow resolution:** Most commercial loans are granted by a group of 8-10 banks. Under the existing resolution mechanism, some banks would typically oppose the resolution due to differences. This slowed the resolution process. With most banks expected to be on board in the proposed ARC, the resolution is expected to be faster.

Need for ARCs

- **Consolidation of bad loans & Tackling the issue of rising bad loans:** ARC can help consolidate all bad loans of banks under a single exclusive entity.
 - Banks' gross non-performing assets (GNPAs) is expected to rise sharply from 7.5% of gross advances in September 2020 to at least 13.5% of gross advances in September 2021.
- **Complementing the IBC mechanism:** While the IBC infrastructure is well capable of handling steady-state incremental stressed assets, the enormous existing stock bad assets need a one-time exceptional resolution mechanism.
- **Ease the burden on banks:** Banks have unused funds lying in their balance sheets in the form of provisioning against bad loan. The proposed ARC, by taking up the bad loan, would free up this unused capital and enabled banks to lend again to customers without constraints.
 - Regular banking relations are not affected as banks are left with cleaner balance sheets and do not have to deal with problem clients.
- **Boost economy:** ARC will help in boosting the entrepreneur's confidence, and gives other options than filing for bankruptcy or insolvency in times of stress

Challenges associated with ARCs

- **Mere shift of bad asset:** ARCs will merely shift bad assets from the government owned PSBs to government backed ARC.
- **May not ease the bad loan crisis of PSBs:** Unlike private sector banks, PSBs are managed by bureaucrats who may not have any incentive to ensuring these lenders' profitability. To that extent, ARC does not really address the root problem of the bad loan crisis.
- **Huge risk of moral hazard:** The safety net provided by a bad bank gives commercial banks more reason to lend recklessly. Thus, it may further exacerbate the bad loan crisis.

Way ahead

India's past experiments with bad banks ended as failures because crucial design imperatives were ignored. The new ARC should address the existing issues. Also, there is a need to give more teeth to existing ARCs so that they could deal with the issue of bad loan smoothly. This could be done in following ways:

Related information

SARFAESI (Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest) Act 2002

- The SARFAESI Act helps reconstruction of bad assets/non-performing asset (NPAs) **without the intervention of courts.**
- Act mandates the ARCs with the task of facilitating **securitisation and asset reconstruction** of bad assets/NPA thereby earliest resolution and bringing the liquidity in the system.
 - **Asset reconstruction** is the acquisition of any right or interest of from Banks in loans, advances granted or debentures etc. for the purpose of its realisation.
 - **Securitisation** is the acquisition of financial assets from Banks either by way of issuing security receipts to Qualified Buyers or any other means. Such security receipts would represent an undivided interest in the financial assets

Insolvency and Bankruptcy Code (IBC),

- It provides for a **time-bound process to resolve insolvency for maximisation of value of assets**, to promote entrepreneurship and balance the interests of all the stakeholders.
- **Applicable to:** Individuals, Limited Liability partnerships (LLPs) and companies.

Bad loan

- A bad loan or a bad debt is an **amount owed to a creditor that is unlikely to be paid** and, or which the creditor is not willing to take action to collect because of various reasons.
- As per RBI, NPAs/bad loans are any commercial loans which are more than 90 days overdue and any consumer loans which are more than 180 days overdue.
 - **Sub-standard** is when the NPAs have aged less than or equal to 12 months.
 - **Doubtful** is when the NPAs have aged more than 12 months.
 - **Loss asset** is when the bank or its auditors have identified the loss, but it has not been written off.
- For agricultural loans, if the interest and/or the instalment or principal remains **overdue for two harvest seasons**; it is declared as NPAs. But, this period should not exceed two years. After two years any unpaid loan/installment will be classified as NPA.

- **The Malaysian experience post the Asian crisis provides ways to address the crucial design imperatives:**
 - **Effective management:** The ARC has to be manned by seasoned distressed debt management professionals.
 - **Fair price for asset purchases:** The transfer of stressed assets to the ARC has to be at just right price neither too high, nor too low. This would ensure that neither is the resolution process impaired, nor do supernormal profits accrue to any stakeholder.
 - **Support from stakeholders**
 - ARC should have a **pre-defined, limited shelf-life.**
- **Closing regulatory gap between the SARFAESI Act and IBC:** The SARFAESI Act should be amended to allow ARCs to acquire equity directly in companies sold under the IBC. This would improve the probability of distressed companies receiving resolution plans.
- **Setting up of a Distressed Loan Sales Trading Platform** for receiving bids for NPAs for better price discovery.
- **Governance reforms in the banks:** There is a need for reforms in critical governance pillars such as the conduct and operations of risk management departments in financial institutions, auditors, boards, rating agencies, independent analysts and regulatory supervisors.
 - Also, **PSBs have to be provided professional autonomy** and a level playing field with their private sector counterparts.

3.6. INTEGRATED OMBUDSMAN SCHEME

Why in news?

Recently, Reserve Bank of India (RBI) announced an integrated ombudsman scheme “One Nation One Ombudsman” to improve grievance redressal mechanism for bank customers.

More about News

- **Currently, there are three separate ombudsmen** for banks, non-banking finance companies (NBFCs) and non-bank prepaid payment issuers (PPIs) that are wallets.
- **These are operated by the RBI** from 22 ombudsman offices located across the country.
- Now, the RBI has decided to integrate the three Ombudsman schemes and introduce centralised processing of grievances following a ‘**One Nation One Ombudsman’ approach.**
- The move is expected to make the ombudsman mechanism **simpler, efficient and more responsive.**
- The Integrated Ombudsman Scheme will be rolled out in June 2021.

About Bank Ombudsman (BO)

- BO is quasi-judicial authority which is an **Alternate Dispute Redressal mechanism** for resolution of disputes between a bank and its customers.
 - RBI in 1995 introduced the BO scheme under Section 35A of the Banking Regulation Act, 1949.
 - In 2006, the RBI revised the BO scheme under which the BO and the staff in the offices of the BO are drawn from the serving employees of the Reserve Bank.

Related information

Internal Ombudsman (IO) Scheme, 2018

- It was launched by the RBI to **strengthen the internal grievance redressal system** of banks and ensure the complaints of the customers are redressed at the level of the bank itself.
- All Scheduled Commercial Banks having **more than 10 banking outlets** (excluding Regional Rural Banks), are required to **appoint IO in their banks.**
- The IO is mandated to **examine customer complaints** related to the **deficiency in service** on the part of the bank (including those listed in the BOS 2006).
- Banks are mandated to **internally escalate all the complaints which are not fully redressed** to their respective IOs before conveying the final decision to the complainant.
 - Thus, the **customers of banks need not approach the IO directly.**
- **Banks' internal audit mechanism** is required to monitor the scheme apart from regulatory oversight by RBI.

Ombudsman Scheme for Digital Transactions (OSDT)

- RBI launched OSDT in 2019 under **Payment and Settlement Systems Act, 2007.**
- It provides a **cost-free and expeditious complaint redressal mechanism relating to deficiency in customer services in digital transactions** conducted through non-bank entities (like mobile wallets or tech enabled payment companies using UPI for settlements) regulated by RBI.
- **Ombudsman for Digital Transactions** is a senior official appointed by the RBI (appointed for a period not exceeding 3 years at a time).

- It is **fully funded by the RBI** and virtually covers all banking transactions related grievances except their business decisions like sanctioning of credit etc
- It covers grievances of the customers against **Commercial Banks, Scheduled Primary Cooperative Banks and Regional Rural Banks.**
- One can file a complaint before the BO if the bank rejects the complaint **or the satisfactory reply is not received from the bank within a period of one month** after the bank concerned has received one's complaint.

Advantages of the Bank Ombudsman

- **Accessible and simple:** Customers are not required to approach the judiciary. This makes grievance redressal under the OBS smoother and accessible.
- **Not bound with the precedents:** Ombudsman can dispense justice without being restricted by precedents. In exceptional situations, the ombudsman can even overlook the technicalities and legal formalities of evidence when settling the contestation between the individual and the bank.
- **Maintaining the financial health:** This is ensured due to strengthening the fiduciary relationship between banks and customers by the Ombudsman.

3.7. AGRICULTURAL INFRASTRUCTURE FUND (AIF)

Why in News?

In the Union Budget 2021-22, Finance Minister announced that Agricultural Produce Marketing Committees (APMCs) will become eligible beneficiaries to utilize Agriculture Infrastructure Fund (AIF).

More on News

- The step will help in strengthening the Mandi infrastructure. The move has come in the context of farmer protests and their **apprehensions regarding moving away mandi based marketing mechanisms.**
- Union Budget also announced a **new agriculture infrastructure development cess (AIDC) on petrol, diesel and several other imported items.** Although, the Finance Minister assured that this cess will be conjunction with decrease in other taxes like decrease in excise duty, so as to ensure that consumers not additionally burdened.
 - The move has **irked states as cesses fall outside the divisible pool of sharable revenue.** This may lead to decrease in overall transfers provided to states.
- These steps is **in addition to the creation of Agri-market Infrastructure Fund (AMIF) created in 2018-19** for development and upgradation of Agricultural Marketing Infrastructure in Gramin Agricultural Markets (GrAMs) and registered APMC markets.

About AIF

- It is a Central Sector Scheme, under Ministry of Agriculture & Farmers Welfare, to provide **medium - long term debt financing facility** through interest subvention and credit guarantee.
- **Beneficiaries include** farmers, Primary Agricultural Credit Societies (PACS), Farmer Producers Organizations (FPOs), Agri-entrepreneurs, Startups, Central/State agency or Local Body sponsored Public-Private Partnership Projects, **APMCs** etc.
- **Eligible projects include:**
 - **Post Harvest Management Projects like:** Supply chain services including e-marketing platforms, Warehouses, Silos, Sorting & grading units, Cold chains, Logistics facilities etc.
 - **Building community farming assets** like Organic inputs production, Infrastructure for smart and precision agriculture, supply chain infrastructure for clusters of crops including export clusters etc.

About Agricultural Infrastructure

- Agricultural infrastructure primarily includes wide range of public services that facilitate production, procurement, processing, preservation and trade.
- It can be grouped under following broad-based categories:
 - **Input based infrastructure:** Seed, Fertilizer, Pesticides, Farm equipment and machinery etc.
 - **Resource based infrastructure:** Water/irrigation, Farm power/energy
 - **Physical infrastructure:** Road connectivity, Transport, storage, processing, preservation, etc.
 - **Institutional infrastructure:** Agricultural research, extension & education technology, information & communication services, financial services, marketing, etc.

- Under AIF, **Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans** with interest subvention of 3% per annum on loans up to Rs. 2 crore, this subvention will be available for a maximum period of 7 years.
 - Further, **credit guarantee coverage** will be available for eligible borrowers from this financing facility under **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme** for a loan up to Rs. 2 crore. The fee for this coverage will be paid by the Government.
- The Scheme **will be operational from 2020-21 to 2029-30**. Disbursement in four years starting with sanction of Rs. 10,000 crore in the first year and Rs. 30,000 crore each in next three financial years.
- Moratorium for repayment may vary subject to minimum of 6 months and maximum of 2 years.
- AIF will be managed and **monitored through an online Management Information System (MIS) platform**.
 - National, State and District Level Monitoring Committees** will ensure real-time monitoring and effective feedback about the implementation of scheme.

Need for a better agricultural Infrastructure

- Impact on farm productivity:** For ~58% of total population of India, agriculture and allied activities are the primary income source and adequate infrastructure **raises farm productivity and lowers farming costs**.
- Reduction in wastage:** India has limited infrastructure connecting farmers to markets and hence, 15-20% of yield is wasted which is relatively higher vs. other countries where it ranges between 5-15%.
- Improving farmer's income:** Value addition, packing, branding and good marketing network also adds to the income of the farmer.
- Provide testing facilities:** to assess the quality of product thereby help in fixing better rates in the market.
 - It can help the farmers to assess the quantity in a better manner to predict the outcome.
- Modernize the trading activities:** helping the farmers/traders to instantly decide and convey the decisions to initiate the action as early as possible (Ex: e-trading and internet auctions).

Role played by the scheme

Stakeholder	Intended benefits of Scheme
Farmers (including FPOs, PACS, Cooperative Societies)	<ul style="list-style-type: none"> Improved marketing infrastructure to allow farmers to sell directly to a larger base of consumers and hence, increase value realization for the farmers. Investments in logistics infrastructure will reduce post-harvest losses and number of intermediaries. Community farming assets for improved productivity and optimization of inputs will result in substantial savings to farmers.
Government	<ul style="list-style-type: none"> It will be able to direct priority sector lending in the currently unviable projects by supporting through interest subvention, incentive and credit guarantee. Government will further be able to reduce national food wastage percentage thereby enable agriculture sector to become competitive with current global levels. Central/State Government Agencies or local bodies will be able to structure viable PPP projects for attracting investment in agriculture infrastructure.
Agri entrepreneurs and startups	<ul style="list-style-type: none"> With a dedicated source of funding, entrepreneurs will push for innovation in agriculture sector by leveraging new age technologies including IoT, AI, etc. It will also connect the players in ecosystem and hence, improve avenues for collaboration between entrepreneurs and farmers.
Banking ecosystem	<ul style="list-style-type: none"> With Credit Guarantee, incentive and interest subvention, lending institutions will be able to lend with a lower risk.

Other schemes that impact agricultural infrastructure

- National Agriculture Market (eNAM):** It is a pan-India electronic trading portal which networks the existing APMC mandis to create a unified national market for agricultural commodities.
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** It has been formulated with the vision of extending the coverage of irrigation 'Har Khet ko pani' and improving water use efficiency 'More crop per drop'.
- Integrated Scheme for Agricultural Marketing (ISAM):** To promote creation of agricultural marketing infrastructure, creation of scientific storage capacity, framing of grade standards and quality certification etc.
- Pradhan Mantri Gram Sadak Yojana (PMGSY):** It linked India's hinterland to towns and cities speaks to the multiplier effect that enabling infrastructure can have on rural communities.
- Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY):** It aims to provide free electric connections to the underprivileged. DDUGJY is crucial for its feeder separation. It separated agricultural and non-agricultural power supply.

	<ul style="list-style-type: none"> This scheme will help to enlarge their customer base and diversification of portfolio. Refinance facility will enable larger role for cooperative banks and RRBs.
Consumers	<ul style="list-style-type: none"> With reduced inefficiencies in post-harvest ecosystem, key benefit for consumers will be a larger share of produce reaching the market and hence, better quality and prices.
APMCs	<ul style="list-style-type: none"> With access to low-cost credit, APMCs can set up post-harvest infrastructure such as sorting and grading units, assaying units, drying yards, cold storages, and warehouses etc. This will result in better price realization for farmers of quality produce, ability to store and sell at a better price and minimize post of harvest losses.

3.8. PRODUCTION LINKED INCENTIVE (PLI) SCHEME

Why in news?

Recently Cabinet approved Production Linked Incentive (PLI) Scheme for Telecom, Pharmaceuticals and IT Hardware sectors.

Details of the PLI scheme for the sectors

Basis	PLI Scheme for Telecom	PLI Scheme for Pharmaceuticals	PLI Scheme for IT hardware
Duration	Outlay of ₹ 12195 Crores over 5 years	Rs 15,000 crore from 2021-2029.	Rs. 7,350 crore over 4 years.
Objective	<ul style="list-style-type: none"> It will make India a global hub for manufacturing telecom equipment. To create jobs and reduce imports especially from China. Seeks to promote local manufacturing in MSME category. 	<ul style="list-style-type: none"> Enhance India's manufacturing capabilities by increasing investment and production. Product diversification to high value goods by creating global champions from India. 	<ul style="list-style-type: none"> Boost domestic manufacturing and attract large investments in global value chain.
Categories covered and incentives	Sectors included: <ul style="list-style-type: none"> Core transmission equipment, 4G/5G next-generation Radio Access Network and Wireless Equipment, Access & Customer Premises Equipment, Internet of Things Access Devices, Other Wireless Equipment and Enterprise equipment like Switches, Routers etc. Incentives - <ul style="list-style-type: none"> Investor will be incentivized up to 20 times of minimum investment threshold enabling them to utilize their unused capacity. Minimum Investment threshold for MSME is Rs. 10 Crores and for others Rs. 100 Crores. Incentive structure ranges between 4% and 7% for different categories and years. 	Scheme shall extend incentives based on net incremental sales to following categories: <ul style="list-style-type: none"> Category 1- Biopharmaceuticals; Complex generic drugs, etc Category 2- Active Pharmaceutical Ingredients. Category 3- Repurposed drugs; Auto immune drugs, etc. Incentives - <ul style="list-style-type: none"> For First and Second Category: 10% of incremental sales value for the first four year of the scheme, followed by 8% for the fifth year and 6% for the sixth year of production under the scheme. For Third Category: 5% of incremental sales value for the first four years, 4% for the fifth year and 3% for the sixth year. 	Scheme shall extend incentives based on net incremental sales to Laptops, Tablets, All-in-One Personal Computers and Servers. Incentives – Scheme will offer 1-4% cash incentives on net incremental sales (over base year 2019-20) for IT products manufactured in India.
Current status and need for Industry	<ul style="list-style-type: none"> India is the second-largest telecommunications market. 	<ul style="list-style-type: none"> Indian pharmaceutical industry is 3rd largest in the world by volume. 	<ul style="list-style-type: none"> National Policy on Electronics 2019 envisions India as a global hub for

	<ul style="list-style-type: none"> • Telecom is also the second highest revenue earner for the government, after income tax. • Currently, the new National Digital Communications Policy - 2018 aims to attract USD 100 billion worth of investments and generate 4 million jobs in the sector by 2022. 	<ul style="list-style-type: none"> • Global Contribution- 3.5% of drugs and medicines. • Currently, since India lacks in domestic high value production and R&D, domestic demand is met through imports. 	<p>Electronics System Design and Manufacturing.</p> <ul style="list-style-type: none"> • Currently, laptop and tablet demand in India is largely met through imports.
Expected Benefits	<ul style="list-style-type: none"> • Lead to incremental production of ₹2.4 lakh crore, with exports of about ₹2 lakh crore over five years and bring in investments of more than ₹3,000 crore. • Generate 40,000 direct and indirect employment opportunities and generate tax revenue of ₹17,000 crore. • Support to MSMEs to play an important role in telecom sector and come out as national champions. 	<ul style="list-style-type: none"> • 20,000 direct and 80,000 indirect jobs • Promote innovation and self-reliance in important drugs. • Expected to bring in investment of Rs.15,000 crore in sector. 	<ul style="list-style-type: none"> • Benefit 5 major global players and 10 domestic champions in the field of IT Hardware manufacturing. • Employment generation potential of over 1,80,000 (direct and indirect). • Domestic Value Addition to rise to 20% - 25% by 2025 (current 5% - 10%).

Refer to November 2020 Monthly CA for more details on Production Linked Incentive Scheme.

3.9. MAJOR PORT AUTHORITIES BILL, 2020

Why in News?

Recently, Parliament passed the Major Port Authorities Bill, 2020.

About the Bill

- Bill seeks to provide for regulation, operation and planning of major ports in India and provide greater autonomy to these ports.
 - It seeks to replace the Major Port Trusts Act, 1963.
- Application: To major ports of Chennai, Cochin, Jawaharlal Nehru Port, Kandla, Kolkata, Mumbai, New Mangalore, Mormugao, Paradip, V.O. Chidambaranar (Tuticorin), and Vishakhapatnam.
- **Key features of the Bill include:**

	Major Port Authorities Bill, 2020	Major Port Trusts Act, 1963.
Major Port Authorities Board	<ul style="list-style-type: none"> • A Board of Major Port Authority for each major port will be formed. • These Boards will replace the existing Port Trusts. 	<ul style="list-style-type: none"> • Under this, all major ports were managed by the respective Board of Port Trusts that have members appointed by the central government.
Composition of Board	<ul style="list-style-type: none"> • Board will comprise of a Chairperson and a deputy Chairperson, both appointed by central government on the recommendation of a selection committee. • Other Members: <ul style="list-style-type: none"> ◦ One each from respective state governments, Railways Ministry, Defence Ministry, and Customs Department. ◦ Board will also include two to four independent members, and two members representing the interests of the employees. 	<ul style="list-style-type: none"> • Board of Port Trusts consisted of: <ul style="list-style-type: none"> ◦ Chairman to be appointed by the Central Government. ◦ one or more Deputy Chairman. ◦ such number of persons, as the Central Government may, from time to time from amongst persons namely Mercantile Marine Department, Customs Department, Defence Services etc.
Powers of the Board	<ul style="list-style-type: none"> • Bill allows the Board to use its property, assets and funds as deemed fit for the development of the major port. • The Board can also make rules on 	<p>It included:</p> <ul style="list-style-type: none"> • Power to raise loans. • Power to make regulations w.r.t employees.

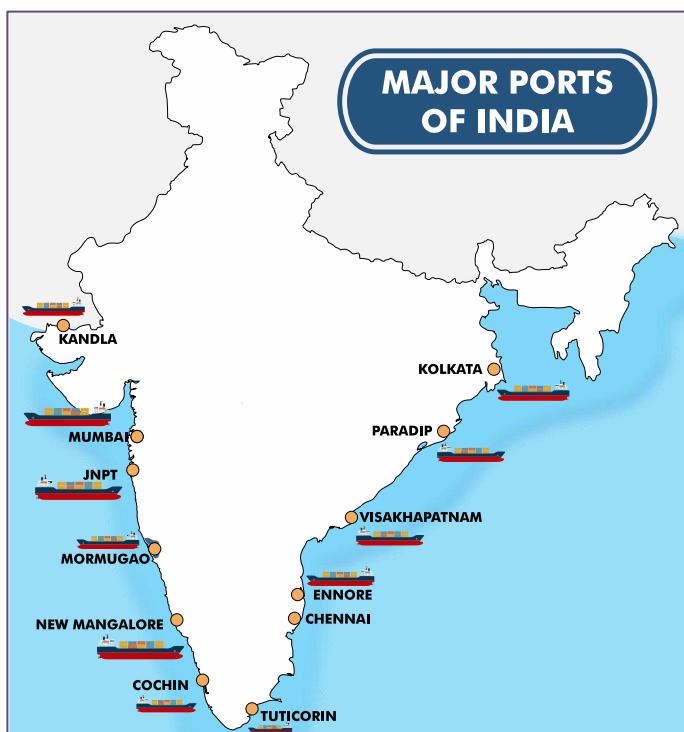
	<ul style="list-style-type: none"> ○ Declaring availability of port assets for port related activities and services. ○ Developing infrastructure facilities such as setting up new ports, jetties. ○ Providing exemption or remission from payment of any charges on any goods or vessels. 	<ul style="list-style-type: none"> ● Power to execute works and provide appliances. ● Power with respect to landing places and bathing ghat. ● Power of Board to order sea-going vessels to use docks, wharves, etc
Fixing of rates	<ul style="list-style-type: none"> ● Board or committees appointed by the Board will determine rates for assets and services available at ports. ● Such fixing of rates will not be with retrospective effect. 	<ul style="list-style-type: none"> ● Currently, the Tariff Authority for Major Ports, established under the 1963 Act, fixes the scale of rates for assets and services available at ports.
Financial powers of the Board	<ul style="list-style-type: none"> ● Board may raise loans from any scheduled bank or financial institution within India, or any financial institution outside India. ● However, for loans above 50% of its capital reserves, the Board will require prior sanction of the central government. 	<ul style="list-style-type: none"> ● Board had to seek prior sanction of the central government to raise any loan.
Adjudicatory Board	<ul style="list-style-type: none"> ● It provides for the constitution of an Adjudicatory Board by the central government. 	<ul style="list-style-type: none"> ● Under this Tariff Authority for Major Ports were constituted for this role.
Penalties	<ul style="list-style-type: none"> ● Any person contravening any provision of the Bill or any rules or regulations will be punished with a fine of up to one lakh rupees. 	<ul style="list-style-type: none"> ● There were various penalties for contravening provisions of the Act.
Public Private Partnership (PPP) projects	<ul style="list-style-type: none"> ● Bill defines PPP projects as projects taken up through a concession contract by the Board. ● For such projects, the Board may fix the tariff for the initial bidding purposes. 	
Corporate Social Responsibility	<ul style="list-style-type: none"> ● Board may use its funds for providing social benefits. This includes development of infrastructure in areas such as education, health, housing, and skill development. 	

Significance of the Bill

- Bill is aimed at **reorienting the governance model in central ports to landlord port model** in line with the successful global practice.
- To promote the expansion of port infrastructure and facilitate trade and commerce, **Bill aims at decentralizing decision making and to infuse professionalism** in governance of major ports.
- It will **impart faster and transparent decision making** benefiting the stakeholders and better project execution capability.
- It will also help in **bringing transparency in operations** of Major Ports.
- It is **more compact in comparison to the Major Port Trusts Act, 1963** as the number of sections has been reduced to 76 from 134 by eliminating overlapping and obsolete Sections.

About Landlord port model

- In this model, publicly governed port authority acts as a regulatory body and as landlord while private companies carry out port operations—mainly cargo-handling activities.
- Here, the port authority maintains ownership of the port while the **infrastructure is leased to private firms** that provide and maintain their own superstructure and install own equipment to handle cargo.
- In return, the **landlord port gets a share of the revenue** from the private entity.



3.10. ROAD SAFETY

Why in news?

World Bank released report titled 'Traffic Crash Injuries and Disabilities: The Burden on Indian Society'.

Causes of increasing road accidents

- **Increasing congestion of vehicles and traffic on roads:** Due to factors like increasing urbanisation, economic growth coupled with lack of proportionate increase in capacity of roads.
- **Poor enforcement of laws:** India's traffic laws are stricter than those of other countries but these laws are not enforced. **India's enforcement of laws on speeding and drunk driving are rated 3 and 4 out of 10, respectively,** compared to 8 and 9 in China. Also, India has a paucity of traffic police.
- **Poor city planning:** On many roads there are no traffic-calming measures such as speed humps before intersections or median barriers. Roads should be made not just for use by four-wheelers but also for two-wheelers and pedestrians.
- **Inadequate driver training:** In 2018, in 26% of all road accidents, drivers who were in an accident did not have a valid license or were driving with a learner's license. Moreover, poor licensing mechanism means licences are not a sign that the driver is qualified.
- **Improper road engineering:** Road infrastructure in India suffers from poor design quality, poor visibility leading to higher chances of accidents. Presence of Potholes on roads, Poor lighting on highways, lack of necessary road signs etc. increase the vulnerability.
- **Needs coordination between different stakeholders:** In a federal set up much depends on efforts of States to mobilise data on road accidents.
 - World Health Organisation (WHO) recommends countries to have a national urban maximum speed limit of 50 km/hour. But some states like Uttar Pradesh fall below this bracket with a 40 km/hour limit while those in Andhra Pradesh and Maharashtra can go up to 65 km/hour

Key highlights of the report

Road Accidents related Deaths in India



- Accounts for about **4.5 lakh road crashes per annum**, in which 1.5 lakh people die.
- India tops the world in road crash deaths (WHO, 2018).
- India has 1% of the world's vehicles but accounts for 11% of all road accident deaths and 6% of total road crashes.

Global deaths



- Globally, road crashes kill **1.35 million people and injure 50 million people every year**.
- Road Traffic Injuries was the **eighth leading cause of death**.
- **Road Crash Fatality Rate** was three times higher in low-income countries compared to high-income countries.

Vulnerable Road Users (VRUs):



- **Poor, especially male road-users** of working age constitute the category of VRUs.
- **VRUs bear a disproportionately large burden of road crashes** and account for more than half of all road crash deaths and serious injuries in the country.

Gender Specific Impact



- Women in the families of victims **bore extra burden**, often taking up extra work, assuming greater responsibilities, and performing caregiving activities.
- About **50% of women were severely affected by the decline in their household income** after a crash.

Economic cost



- **Estimated crash cost is 3.14 per cent of gross domestic product (GDP)**.
- **According to Ministry of Road Transport and Highways:**
- Socio-economic cost of Road Crashes is equivalent to **0.77% of the GDP**.
- **76.2% of people** who are killed in road crashes are in their prime working-age, **18-45 years**.

Social Impact



- **Imposes a severe financial burden and push entire (non-poor) households** into poverty and the already poor into debt.
- Every road accident death causes **depletion of nearly seven months' household income in poor families**.

- **Other reasons include**, lack of precautions by road users such as Not wearing helmets, Triple-riding, Over speeding, Drunk driving etc.

Steps taken to improve road safety in India

- **National road safety policy 2010:** Policy outlines various measures such as, raising awareness about Road Safety; establishing a Road Safety Information Database; built in safety features at the stage of design, manufacture; strengthen the system of driver licensing and training etc.
- **National Road safety Council** constituted as apex body to take policy decisions in matters of road safety.
- India signed **Brasilia Declaration on Road Safety (2015)** which commits to reduce road accident and fatality by half.
- **Bharatmala Pariyojana** that focuses on optimizing efficiency of freight and passenger movement across the country by bridging **critical infrastructure gap** through effective interventions.
- **Dedicated Freight Corridor Project:** The Indian Railways' quadrilateral linking Delhi, Mumbai, Chennai and Howrah, known as Golden Quadrilateral; will decongest already saturated road network & promote shifting of freight transport to more rail transport.
- Passing of **Motor Vehicle (Amendment) Act, 2019.** (see box)

Suggestions to enhance road safety include

- **National road safety plan** by Bureau of Police Research and Development suggests the following:
 - **dedicated and separate agency for strict enforcement of the traffic violations across India**, especially on National Highways.
 - Proposed **National Highways Road Safety Police**, state highway road safety police for strict enforcement on national highways.
 - **Use of Artificial Intelligence:** Use of Intelligent Transportation System (ITS) and Artificial Intelligence techniques to communicate, monitor, operate and manage the highways in a sensible and organized way etc.
- **S. Sunder committee 2007 on road safety** highlighted the need for scientific study of road infrastructure, which includes effective road engineering solutions at the design stage, rectification of accident hot spots etc.
- **Safe system approach** of World Health Organisation recognised that people' role in road safety cannot be eliminated and rather the policy approach should be shifted towards education and awareness for all the strata of society.
- **Modernise the vehicle technology** such as collision-avoidance systems, (semi-)autonomous vehicles, stability control, improved road-vehicle interaction, automatic braking systems and air cushion technology and speed limiters on fleet vehicles.

Motor Vehicle (Amendment) Act, 2019

The act has amended the Motor Vehicles Act, 1988 to provide for road safety. Some of its key provisions are-

- **Compensation for road accident victims to ensure** cashless treatment of road accident victims during golden hour (time period of up to one hour following a traumatic injury).
- **Compulsory insurance** covering all road users in India by constituting a **Motor Vehicle Accident Fund**.
- It sets up a **National Road Safety Board** that will advise government on road design and motor vehicle safety.
- **Good samaritans:** Act defines a good samaritan as a person who renders emergency medical or non-medical assistance to a victim at the scene of an accident. Such a person **will not be liable for any civil or criminal action** for any injury to or death of an accident victim.
- **Offences and penalties:** Act increases penalties for several offences under the Act. For example, the maximum penalty for driving under the influence of alcohol or drugs has been increased from Rs. 2,000 to Rs. 10,000.
- **Recall of Vehicles:** Act allows central govt. to order for recall of motor vehicles if a defect in vehicle may cause damage to the environment, or the driver or other road users.



SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Economics at our open test online platform for testing your understanding and recalling of the concepts.



4. SECURITY

4.1. DEFENSE MODERNIZATION

Why in News?

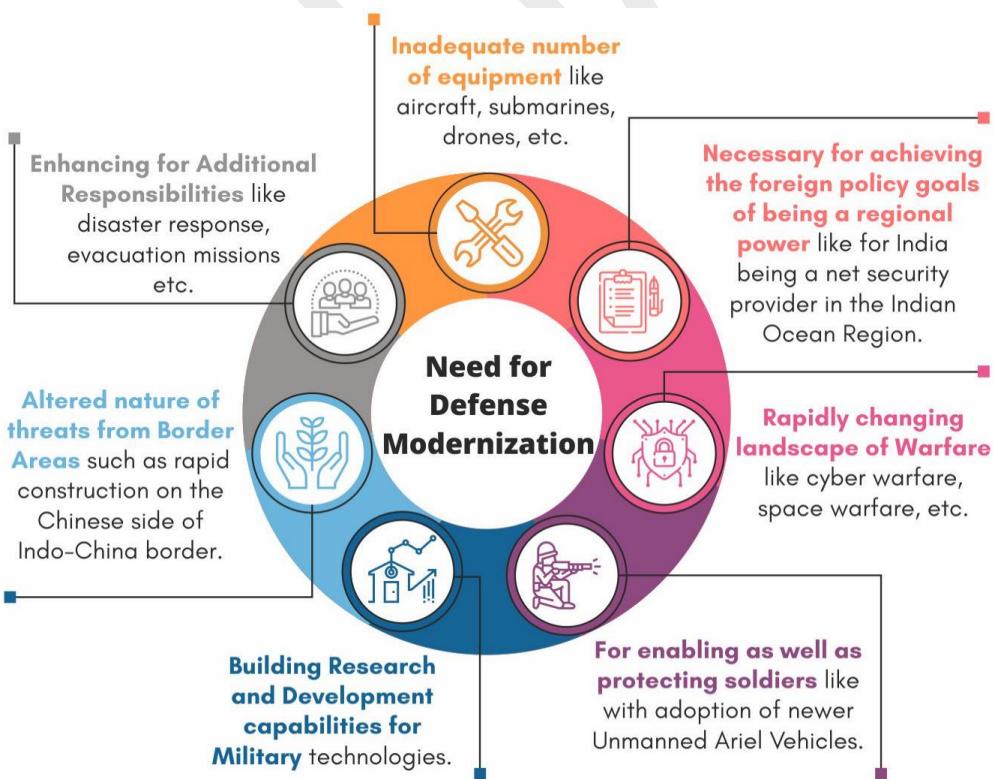
The 15th Finance Commission has recommended constitution of a dedicated non-lapsable Modernisation Fund for Defence and Internal Security (MFDIS).

More about the Fund

- The primary aim of the Fund is to **bridge the gap between projected budgetary requirements and allocation** for defence and internal security.
- The indicative size of the **MFDIS for 2021-26 is about ₹2.5 lakh crore**.
- However, the **unutilised amount from the normal budgetary allocations** to the Ministry of Defence (MoD) and the Ministry of Home Affairs (MHA) for capital expenditure **shall not be part of the Fund**.
- In its action-taken report, the government said that it has “in-principle” accepted the **creation of the fund in the Public Account of India**. The sources of funding and modalities will be examined by them in due course.
 - The Commission has recommended four specific sources of **incremental funding which include transfers from the Consolidated Fund of India, disinvestment proceeds of defence public sector undertakings (DPSUs), proceeds from the monetization of surplus defence land, and proceeds of receipts from defence land** likely to be transferred to them and for public projects in future.
- As per the Commission, the proceeds will be utilized for **capital investment for modernisation of defence services, capital investment for the Central Armed Police Forces (CAPF) and modernisation of State police forces**.
 - The Fund would also allocate ₹1,000 crore per annum for the welfare of families of the defence and CAPF personnel who sacrifice their lives in frontline duties.

What are the steps that have been taken?

- **For defence production and indigenization:**
 - **Draft Defence Production and Export Policy 2020** with an aim to double India's defence production in five years.
 - **Defence Acquisition Procedure, 2020** aims to empower Indian domestic industry through 'Make in India' projects with the ultimate aim of turning India into a global manufacturing hub.
 - **SRIJAN Portal:** It is a 'one stop shop' online portal that provides access to the vendors to take up items that can be taken up for indigenization.
 - **Encouraging Defence Entrepreneurship:** Organization of initiatives like Defense India Startup Challenge for creation of functional prototypes of products/technologies relevant for national security.
 - Creation of **Naval Innovation and Indigenisation Organisation (NIIO)** to put in place dedicated structures for the end users to interact with academia and industry.



- **For improving military organization:**
 - **Chief of Defence Staff (CDS)** was created to provide “effective leadership at the top level” to the three wings of the armed forces. This is addition to creation of **new Department of Military Affairs** for better management of military resources and procurement.
 - **Creation of Integrated Battle Groups:** IBGs are brigade-sized, agile, self-sufficient combat formations, which can swiftly launch strikes against adversary in case of hostilities.
 - **Theatre commands with tr-service capabilities:** The armed forces are envisaged to be reorganized in multiple Theatre commands in which all the three services will operate in a regionally integrated manner.
- **Other efforts towards Modernization:**
 - **Integrated Air Defence Weapon System (IADWS):** US has approved the sale of an IADWS to India. It will create a multi-layered missile shield over the National Capital Territory (NCT) of Delhi.
 - **Defence Testing Infrastructure Scheme:** Setting up of Defence Testing Infrastructure will provide easy access and meet the testing needs of the domestic defence industry.

What are the challenges that remain?

- **Large time taken for the decision-making process:** Experts have highlighted that despite multiple avenues available for procurement and development, production and acquisition contracts take close to **7 to 9 years for finalization before the production starts.**
 - This creates a mismatch between needs of the armed forces and availability of equipment. Also, elongated timelines lead to creation of a **lag between the manufactured technology and the state-of-the-art technology.**
- **Limited Public Sector Manufacturing Capacity and Capability:** The public sector manufacturing capacity with agencies like Ordnance Factories, DRDO, HAL etc. are limited and overburdened and is marred with several issues.
 - For example, program to indigenously manufacture a fleet of modern battle tanks, christened as future ready combat vehicle, is also not moving forward due to procedural delays.
- **Absence of a concrete Defense Industrial Base:** Participation of the private sector in Defense manufacturing has been limited. The primary reason for this can be attributed to absence of communication platforms between industry and defense.
 - Although efforts are being made in the form of creation of Defense Industrial Corridors (DIC) such as Tamil Nadu DIC, private sector participation in Defense production is still minuscule.
- **Absence of discourse on nature of future warfare:** Although several threats have been emerging like increasing cyberattacks, China’s tilt towards hybrid warfare through informational superiority etc., clear plan or strategy for future development of such capabilities has not been created.

Way Forward

- **Change in ideology from being the major importer to major exporter:** Change in ideology would indirectly streamline the acquisition and production procedures. This will also necessitate partnership with private sector to contribute and complete the development-design-produce-export cycle.
- **Providing handholding to private sector:** The Indian defence industry is currently nascent and would require handholding in the form of guaranteed procurement, joint development etc.
- **Development of Industry-defence-academia linkage:** Modernization of defence forces is directly dependent on research. As a result, it becomes important that country’s research capabilities are tapped by engaging the academia and taking them forward via industrial and defence production channels.
- **Looking at defence modernization in an integrated manner:** Defense modernization cannot happen in a silo, but has to happen in conjunction with infrastructural modernization, growing human resource capabilities of the country etc. Therefore, defense modernization should be looked in integration with overall modernization.
 - For example, shipbuilding industry and developed ports play a key role in development of naval systems like submarines.

5. ENVIRONMENT

5.1. NATIONAL MARINE TURTLE ACTION PLAN 2021-26

Why in News?

Ministry of Environment Forest and Climate Change (MoEF&CC) had released National Marine Turtle Action Plan.

About Marine Turtle Action Plan

- It aims to conserve marine turtles and their habitats for maintaining a healthy marine ecosystem.
- **Goal is to**
 - **Conserve Species**, their habitat and reduce negative impacts on survival of marine turtles.
 - **Improve the understanding** of marine turtles and their habitats, through a coordinated mechanism.
 - **Promote Awareness** and Education on conservation of marine turtles and their habitats.
 - **Enhance livelihoods of coastal communities** through promoting sustainable ecotourism.
 - **Increase national, regional and international cooperation** on marine turtle conservation.
- Various **objectives and activities for fulfillment of National Marine Turtle Action Plan:**

Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtle MOU)

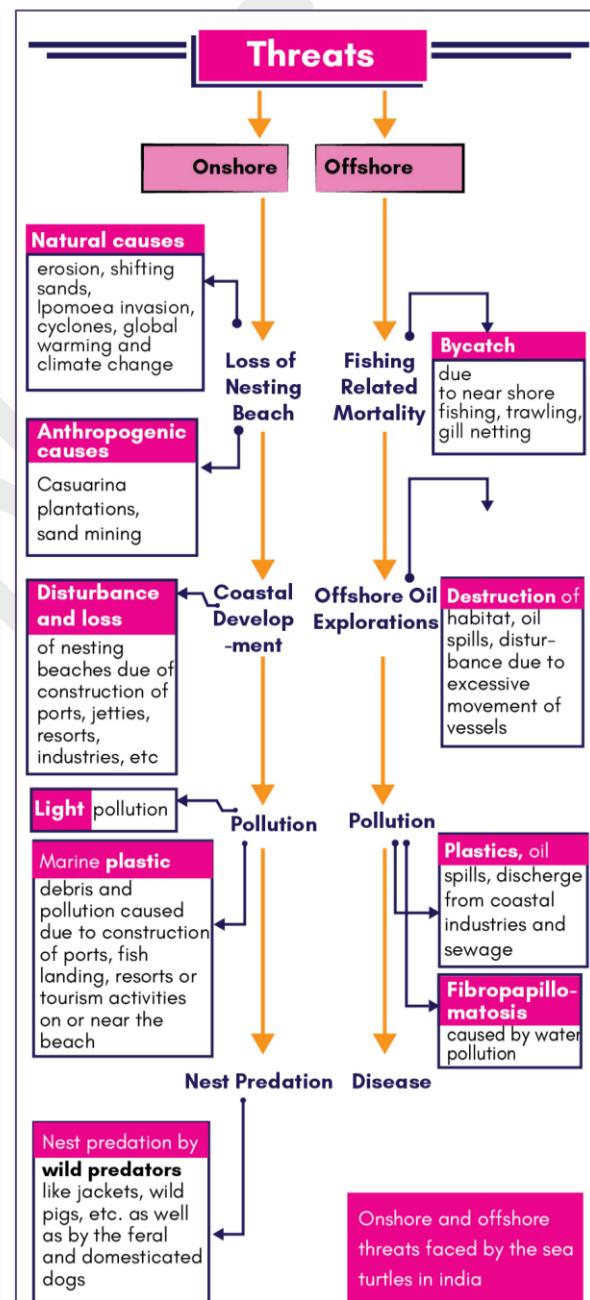
- India, being a signatory of the IOSEA Marine Turtles MOU, launched 'National Marine Turtle Action Plan (2021-2026).
- Aim of the IOSEA agreement is **to maintain and recover marine turtle populations** by promoting cooperation among Governments and other organizations that share this common objective.
- **Six species of marine turtles are covered by IOSEA:** the Loggerhead (Vulnerable), Olive ridley (Vulnerable), Green (Endangered), Hawksbill(Critically Endangered), Leatherback (Vulnerable) and Flatback (Data Deficient).
 - All of them are found to migrate and nest within the IOSEA region.
- **MOU applies to the waters and coastal States of the Indian Ocean and South-East Asia and adjacent seas**, extending eastwards to the Torres Strait. This agreement area is considered to cover 44 Range States.
- **For implementation purposes, the area is divided into four sub-regions:** South-East Asia (plus Australia, China, Japan, Republic of Korea and United States), Northern Indian Ocean, Northwestern Indian Ocean, and Western Indian Ocean.

Objective	Programs and Activities
Reduce direct and indirect causes of marine turtle mortality	<ul style="list-style-type: none">• Identify and document the threats to marine turtle populations and their habitats.• Determine and apply best practice approaches to minimising those threats to marine turtle populations and their habitats.
Protect, conserve and rehabilitate marine turtle habitats	<ul style="list-style-type: none">• Establish necessary measures to protect and conserve marine turtle habitat.<ul style="list-style-type: none">○ Identify areas of critical habitat such as migratory corridors, nesting beaches, inter-nesting and feeding areas.○ Designate and manage protected/ conservation areas, sanctuaries or temporary exclusion zones in areas of critical habitat.○ Develop incentives for adequate protection of areas of critical habitat outside protected areas.○ Undertake assessments of the environmental impact of marine and coastal development and other human activities.○ Strengthen the application of existing bans on the use of poisonous chemicals and explosives.○ Mainstream the turtles and their habitats conservation into the production sectors.• Rehabilitate degraded marine turtle habitats<ul style="list-style-type: none">○ Re-vegetate, where appropriate, frontal dunes at nesting beaches, with indigenous flora.○ Remove casuarinas from the important nesting beaches.○ Enhance recovery of degraded coral reefs, mangroves and seagrass habitats.
Improve understanding of marine turtle ecology and populations through research, monitoring and information exchange	<ul style="list-style-type: none">• Conduct studies on marine turtles and their habitats targeted to their conservation and management.• Conduct collaborative research and monitoring.• Analyse data to support mitigation of threats and to assess and improve conservation practices.• Exchange at regular intervals scientific and technical information and expertise among nations, scientific institutions, nongovernmental and international organisations, in order to develop and implement best practice.

Increase public awareness and enhance public participation in conservation activities	<ul style="list-style-type: none"> Establish public education, awareness and information programmes such as: <ul style="list-style-type: none"> Develop and conduct focused education and awareness programmes for target groups. Declaration of National Marine Turtle Day. Organise special events related to marine turtle conservation and biology. Develop alternative livelihood opportunities for local communities to encourage their active participation in conservation efforts. Involve stakeholders, and local communities in particular, in planning and implementation of conservation and management measures.
Enhance national, regional and international cooperation	<ul style="list-style-type: none"> Enhance mechanisms for cooperation and promote information exchange Strengthen and improve enforcement of conservation legislation.

Marine Turtles in India

- Five species of sea turtles are found in Indian waters.** These are the Olive ridley (*Lepidochelys olivacea*), Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricata*), Leatherback (*Dermochelys coriacea*) and Loggerhead (*Caretta caretta*).
 - India is **home to the largest known nesting population of olive ridley turtles**. Except Loggerhead turtles, the remaining four species nest along the Indian coastline and islands of India.
- Importance of Marine Turtles**
 - Marine turtles are considered flagship species in various marine habitats such as coral reefs, sea grass meadows etc.
 - They play an important role in **shaping the behavior and life history traits of prey species and predators** that is critical for the sustainability of fisheries in the region.
 - Marine turtles **play a variety of ecological roles like controlling prey populations, supporting coastal vegetation** through their hatchlings etc.
 - Marine turtle presence is an **indicator of healthy marine ecosystems** and provides a source of revenue for local communities through tourism.
- Measures adopted for their protection**
 - These five species of sea turtles are **protected under Schedule I of the Wildlife (Protection) Act, 1972**.
 - Also, MoEF&CC had included marine turtles as **one of the 22 species for taking up focused conservation program** under the centrally sponsored scheme- **Development of Wildlife Habitats**.
 - India has identified all its **important sea turtle nesting habitats** as '**Important Coastal and Marine Biodiversity Areas**' of India and included in the Coastal Regulation Zone (CRZ) -1.



Important Marine Turtle Habitat in India

Turtle	Habitat	
Olive Ridley	Odisha	<ul style="list-style-type: none"> Rushikulya and Gahirmatha river (Kandhamal and Ganjam) Devi River (Jagatsinghpur, Puri)
	Andaman & Nicobar Islands	<ul style="list-style-type: none"> Bahua, Muhincohn and Kiyang beaches (Little Nicobar Island) Cuthbert Bay, (Middle Andamans)

	Lakshdweep Islands	<ul style="list-style-type: none"> Suhelilisland
	Andhra Pradesh	<ul style="list-style-type: none"> Godavari River Mouth Kapasukkudi (Bahuda river mouth) Srikakulam Beaches along Krishna River and Penneru river mouth
	Puducherry	<ul style="list-style-type: none"> Nallavadu, Pannithittu, Narambi and Moorthikuppam villages (Puducherry) Beaches around Arasalar River
	Tamil Nadu	<ul style="list-style-type: none"> Gulf of Mannar Biosphere Reserve Chennai coast
	Gujarat	<ul style="list-style-type: none"> Western Saurashtra coast (Junagadh, Jamnagar and Porbandar)
	Maharashtra	<ul style="list-style-type: none"> Sindhudurg Coasts (Raigad and Ratnagiri)
	Goa	<ul style="list-style-type: none"> Galgibaga beach (South Goa)
Leatherback	Andaman & Nicobar Islands	<ul style="list-style-type: none"> Galathea bay, Indira point, Hingloin, Alexandria, Dagmar, and Renhong beaches (Great Nicobar Island) – Largest nesting Ground in India. Bahua, Muhincohn and Kiyang beaches (Little Nicobar Island) West Bay, Jackson Creek beaches (Little Andaman Island) Cuthbert Bay, (Middle Andamans)
Hawksbill	Andaman & Nicobar Islands	<ul style="list-style-type: none"> Bahua, Muhincohn and Kiyang beaches (Little Nicobar Island) Cuthbert Bay, (Middle Andamans) South Reef Island, (Middle Andamans)
	Lakshdweep Islands	<ul style="list-style-type: none"> Suhelilisland
Green	Andaman & Nicobar Islands	<ul style="list-style-type: none"> Bahua, Muhincohn and Kiyang beaches (Little Nicobar Island) Cuthbert Bay, (Middle Andamans)
	Lakshdweep Islands	<ul style="list-style-type: none"> Lagoons of Lakshdweep Islands (Agatti, Kadmat, Kavaratti and other islands). Suhelilisland
	Tamil Nadu	<ul style="list-style-type: none"> Gulf of Mannar Biosphere Reserve
	Gujarat	<ul style="list-style-type: none"> Western Saurashtra coast (Junagadh, Jamnagar and Porbandar)
	Maharashtra	<ul style="list-style-type: none"> Sindhudurg Coasts (Raigad and Ratnagiri)

Related News

- Recently, Ministry of Environment Forest and Climate Change released **Marine Mega Fauna Stranding Guidelines**.
 - It is estimated that between **9,000-10,000 cetaceans are bycaught annually across India in mechanised vessels**.
- Objective is **to improve coordination between various independent Government and civil society** responding to Marine megafauna stranding, research and management issues, support, share data and thus promote inter-sectoral coordination.
- Guidelines also provide guidance for the **management of marine megafauna stranded on the shore or entrapped in shallow waters, bays** and potentially unable to return to the sea.
- Steps are provided for handling**
 - live/dead stranding on the beach
 - bycatch or entangled animals at sea
 - stranded/entangled animals on the board of vessel/boat
- Management actions include**
 - Establishment of National Stranding Centre:** to maintain the national level knowledge management system on marine animals stranding and their bycatch, facilitate the permission process, facilitate funding and grant applications, and carry out annual meetings to assess the functioning of State-wise centres
 - Establishment of State Stranding Centres:** to maintain the State level database on marine animals stranding and their bycatch, and to coordinate with all local stranding networks.
 - Establishment of Local Stranding Networks/Volunteer Networks/Stranding Coordinators**
 - Establishment of Rapid Response Team:** in order to take immediate action in case of stranding of live marine megafauna from the Local Stranding Networks.
 - Creation of National database:** Marine megafauna would consist of all information from the State Stranding Centres.
 - Dolphin/Whale/Dugong/Turtles/Whale shark entanglement**

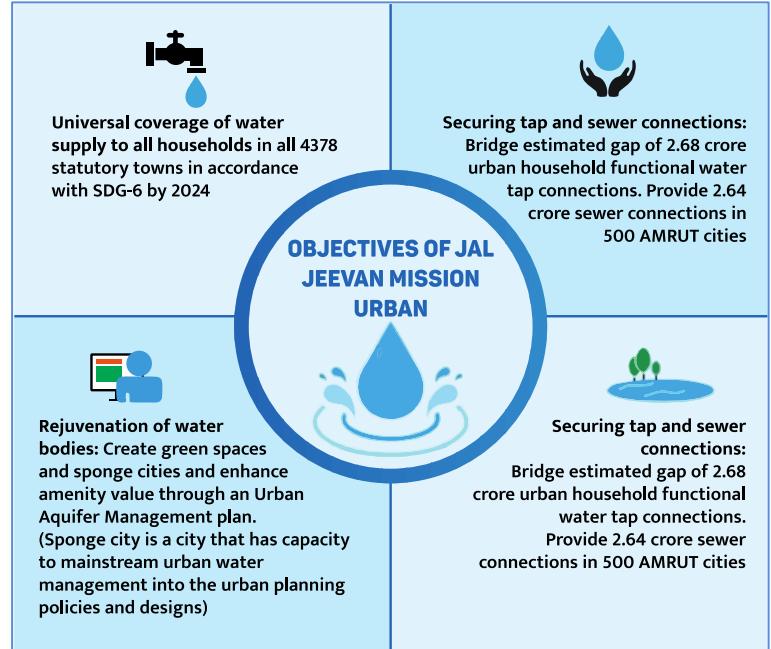
5.2. JAL JEEVAN MISSION URBAN

Why in news?

Jal Jeevan Mission (Urban) was announced by the Ministry of Housing and Urban Affairs in Union Budget 2021-22.

Salient features of Jal Jeevan Mission (Urban)

- Funding:** 100% central funding for Union Territories, 90% for North Eastern and Hill States, 50% for cities with less than 1 lakh population, one third for cities with 1 lakh to 10 lakh population and 25% for cities with million plus population.
- Outcome based Funding:** Funding will be in three tranches of 20:40:40. Third instalment onwards will be released based on outcomes achieved and credible exclusion.
- Promoting PPP Model:** Mandatory for cities having millions plus population to take up PPP projects worth minimum of 10% of their total project fund allocation.
- To leverage latest global technologies** a Technology Sub-Mission for water.
- To spread Mass Awareness,** Information, Education and Communication (IEC) campaign.
- Pey Jal Survekshan** survey will be conducted in 10 cities to ascertain equitable distribution of water, reuse of wastewater and mapping of water bodies with respect to quantity and quality of water through a challenge process.
 - Based on the learnings, it will be **extended to all the AMRUT cities**.
 - Focus on strengthening urban local bodies** by reducing non-revenue water to below 20%, promoting dual piping systems etc.
 - ✓ Raising funds through issuance of municipal bonds. Non-revenue water is the difference between the volume of water put into a water distribution system and the volume that is billed to customers.



Jal Jeevan Mission (JJM) (Rural)

- JJM was launched in 2019, Department of Drinking Water and Sanitation under the Jal Shakti Mantralaya.
- It aims at providing supply of 55 litres of water per person per day to **every rural household (Har Ghar Nal Se Jal)** through Functional Household Tap Connection (FHTC) by 2024.
 - FHTC means a tap connection to a rural household for providing drinking water in adequate **quantity** of prescribed **quality** on regular basis.
 - About **3.2 crore of rural households have been provided with FTWC since the launch of the Mission**, covering around 34 per cent of the targeted households (65.5 million) in rural India.
- Challenges/limitations of JJM (R)**
 - Lack of convergence** with other related schemes for water management like Atal Bhujal Yojana and National Aquifer Mapping and Management Programme.
 - Inadequate focus on water quality** - An assessment by the department found that as many as 56,788 rural households in 18 states have water contaminated with fluoride, arsenic, iron, salinity, nitrate and heavy metals.
 - Lack of in-village infrastructure**, lack of capacity of local communities and poor operation and maintenance.

Need for the Mission

- Large uncovered population:** In urban India, 40.9 per cent households have piped water connections. 48.6 per cent rural households and 28 per cent urban households are without access to an improved source of drinking water throughout the year.
- Water Scarcity:** According to NITI Aayog, currently, **600 million Indians face high to extreme water stress and about two lakh people die every year** due to inadequate access to safe water. Also, number of waterbodies is declining rapidly, e.g., in 1960s Bangalore had 262 lakes and now, only 10 hold water.

- Increasing demand:** Central Ground Water Board (CGWB) estimates that nearly a **fifth of the urban local bodies are already facing a water crisis** due to excessive extraction, failed monsoons, and unplanned development. By 2030, country's water demand is projected to be twice the available supply.
- Poor water quality:** Report by Ministry of Consumer Affairs, Food and Public Distribution identified that **quality of piped drinking water in major cities in India often failed to comply with the standards for Drinking Water as set by the Bureau of Indian Standards.**
- Falling ground water level:** Groundwater level in India has **declined by 61 per cent between 2007 and 2017**, according to Central ground water board.
- Water borne diseases:** Annually about **37.7 million Indians are affected by waterborne diseases**, 1.5 million children die of diarrhoea and 73 million working days are lost leading to an economic burden of \$600 million a year.
- Other issues** include low water use efficiency, leakages, inappropriate water tariff, less focus on recharge of local water bodies in city planning etc.
 - In 2019, Chennai hit day zero of water as all its main reservoirs ran dry, forcing the government to truck in drinking water. Day zero is the day when a city's taps dry out and people have to stand in line to collect a daily quota of water.



5.3. HEAVY METAL WATER POLLUTION

Why in news?

Recent study shows **significant reduction of heavy metal pollution** during COVID-19 pandemic in the Ganga water.

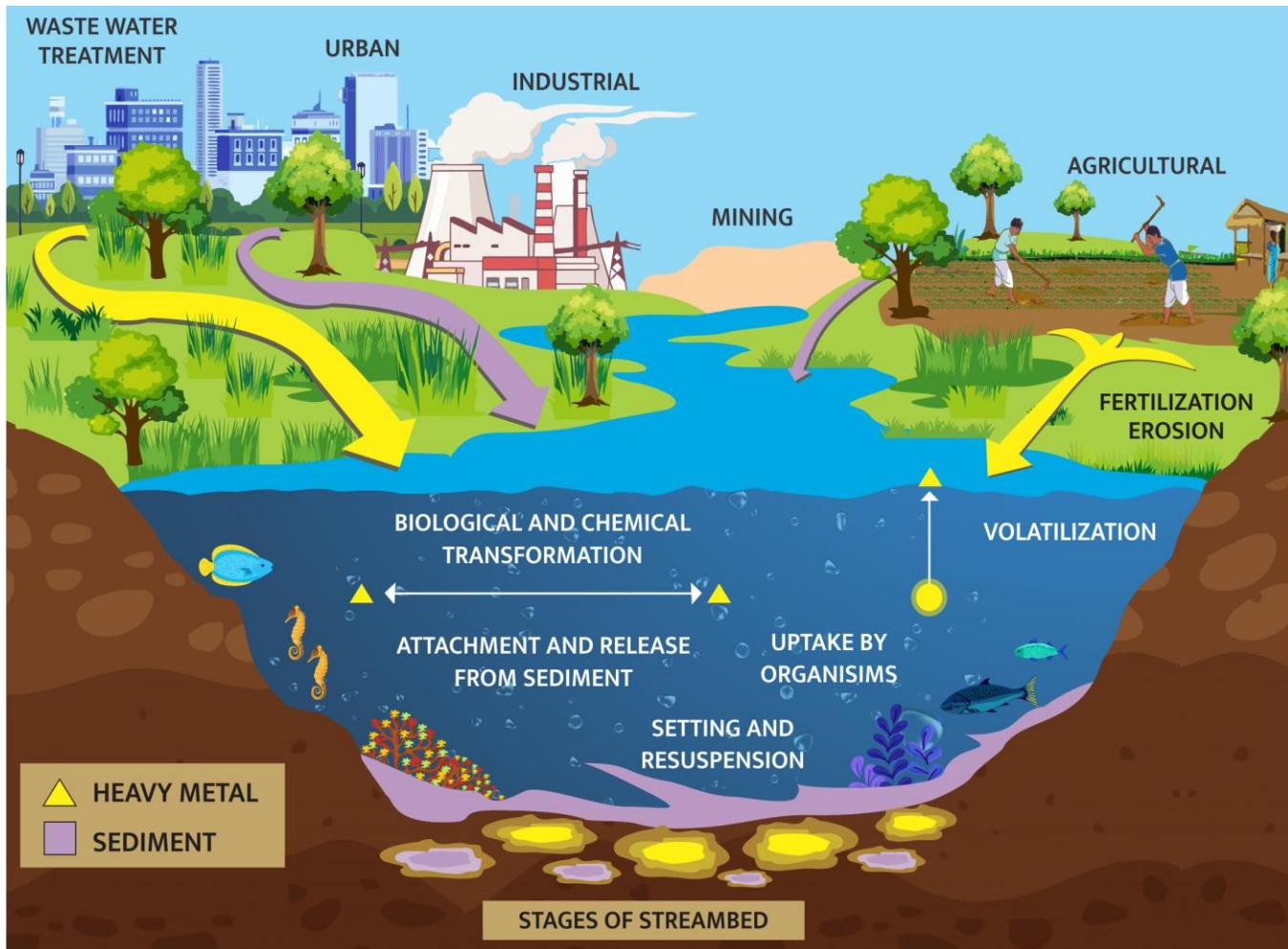
More about news

- According to study, **reduction in industrial wastewater can substantially reduce heavy metal pollution in Ganga water.**
- It is estimated that **industrial wastewater contributes nearly 20% of the total volume of wastewater generated in the Ganga basin.**
- In lockdown, the effluent discharge from various industries was negligible** while inputs from agricultural runoff and domestic sewage remained almost the same.

About Heavy Metal Water Pollution in India

- Heavy metal refers to any metallic chemical element** that has a relatively high density and is toxic or poisonous at low concentrations. Examples include mercury (Hg), cadmium (Cd), arsenic (As)
 - Density of more than 5 g/cm³** is a commonly used criterion.
 - Anthropogenic Source are:** Industrial & Domestic Waste, Agricultural and Livestock, Transport Emissions
 - Natural sources are:** Volcanic activity, metal evaporation from soil and water, soil erosion, geological weathering etc.

- It is found that two-thirds of water quality stations on major rivers have presence of one or more heavy metal beyond limits specified by the Bureau of Indian Standards.
 - Lead, cadmium, nickel, chromium and copper** contamination were more common **in non-monsoon periods.**
 - While **iron, lead, chromium and copper** exceeded 'tolerance limits' **in monsoon periods.**
- Sources of pollution:**
 - Natural sources of metal pollution** in water are seepage from rocks into water, volcanic activity, forest fires, storm water runoff from urbanised areas etc.
 - Anthropogenic sources** are mining, milling, plating, industrial and domestic wastewater effluents, sanitary landfill, agricultural runoff and fossil fuel combustion etc.
- These metals have **bio toxic effects to the human beings** when consumed above the bio recommended limits.



Sources and health effects of hazardous metals

Metal	Sources	Health effects
Chromium (Cr)	Mining, industrial coolants, chromium salts manufacturing, leather tanning	Lung cancer, nasal ulcer and hypersensitivity reactions, Chromium VI can cause damage to DNA
Lead (Pb)	lead acid batteries, E-waste, coal-based thermal power plants, Paint, Pesticide, Batteries, Crystal Glass Preparation.	Inhibition of the synthesis of haemoglobin; dysfunctions in the kidneys, damage to the central and peripheral nervous systems,
Mercury (Hg)	Chlor-alkali plants, thermal power plants, fluorescent lamps, hospital waste (thermometers, barometers), electrical appliances	Minamata disease , damage to organs the brain and kidneys,
Arsenic (As)	Geogenic/natural processes, smelting operations, thermal power plants, fuel combustion	Black foot disease , cancer and skin lesions
Cadmium (Cd)	Zinc smelting, waste batteries, e-waste, paint sludge, incinerations and fuel combustion	Itai-Itai , cadmium pneumonitis, renal dysfunction, tubular proteinuria

Copper (Cu)	Mining, electroplating, smelting operations	Irritation of the nose, mouth and eyes, headaches, stomach aches, vomiting and diarrhea
Nickel (Ni)	Stainless Steel Manufacturing Units, thermal power plants, battery Industry	Allergy, cardiovascular and kidney diseases, lung fibrosis, lung and nasal cancer
Barium	computers in the front panel of a CRT, e- waste	brain swelling, muscle weakness, damage to the heart, liver, and spleen.
Beryllium	E-waste, coal burning	lung cancer, skin disease, poor wound healing and wartlike bumps
Fluorides	coal-fired power plants and other industrial sources, community water fluoridation	Dental and skeletal fluorosis
Nitrates	runoff or seepage from fertilized agricultural, municipal and industrial waste urban drainage and decaying plant debris	Blue baby syndrome (methemoglobinemia) which reduces oxygen level in blood

5.4. NANDA DEVI GLACIER

Why in News?

Recently, a portion of the Nanda Devi glacier broke off near Joshimath in Uttarakhand's Chamoli district, and caused an avalanche in the Alaknanda river system (Dhauliganga, Rishi Ganga and Alaknanda rivers).

More on News

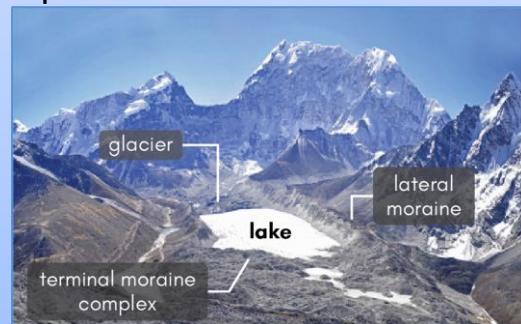
- While **scientists are still investigating the cause of the floods**, early findings reveal that a major rock/ice avalanche detached itself from a north facing slope northeast of Trisul Peak in the Nanda Devi mountain.
- A study by scientists at the Indian Institute of Science (IISc), Bengaluru, also **points to the role of subglacial lakes**.
 - Subglacial lakes commonly develop and create channels below glaciers. Water can flow through these channels in enough quantities as to inundate a valley – even if the glacier doesn't break
- Also, **another study ruled out the possibility of a glacier lake outburst flood** as well.

About Nanda Devi Glacier

- Glacier dwells on the Nanda Devi peak** which is the second-highest mountain in the country after Kanchenjunga.
- Nanda Devi group of glaciers fall within the upper Rishi Ganga catchment**, central Himalaya, covering 690 sq km.
 - Nanda Devi Group of Glaciers refers to the **cluster of glaciers namely Bethartoli, Kururntoli, Nanda Devi North, Nanda Devi South, Nandakna, Raunth Bank, Dakshini Rishi Bank, Trishul**.
- It is a **part of the Garhwal Himalayas** and is located in Chamoli district of Uttarakhand, between the Rishiganga valley on the west and the Goriganga valley on the east.
- The glacier is **located within the Nanda Devi Sanctuary** and drains west into the Rishiganga.

About Glacial lake outburst flood (GLOF)

- A glacier is a **large, perennial accumulation of crystalline ice, snow, rock, sediment, and often liquid water** that originates on land and moves down slope under the influence of its own weight and gravity.
- GLOF occurs from unstable natural dam** formed from glacier retreat.
 - When glacier retreats it leaves behind **large impression in ground** filling it with water and lake is formed, this is known as moraine which can be impounded by pile of debris & ice.
- If the boundaries of these lakes are breached, it **can lead to large amounts of water rushing down to nearby streams and rivers**, gathering momentum on the way by picking up sediments, rocks and other material, and resulting in flooding downstream.
- GLOFs are generally triggered by **an avalanche in the area, construction, anthropological activities, earthquakes, rapid slope movement** into the lake etc.



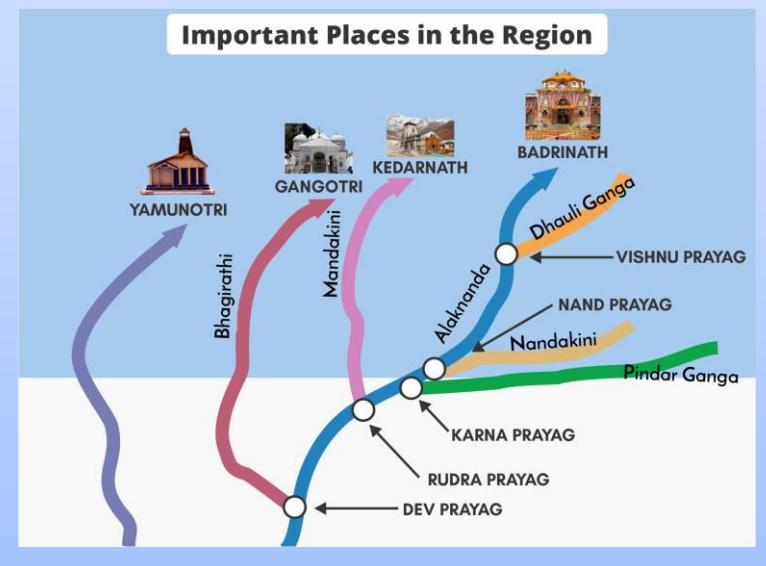
- The melted water of the Nanda Devi glacier **forms several streams and rivers**. The water first flows into the Rishiganga river which later joins Dhauliganga river. Dhauliganga later merges into Alaknanda river at Vishnuprayag.
- A recent study found that about **26 sq km of the glaciated area of the Nanda Devi region was lost in last 37 years**.

Threats to Glaciers

- Climate Change:** It is causing increase in size and number of glacial lakes. Also, Himalayan glaciers are retreating at rates ranging from 10 to 60 metres per year and many small glaciers have already disappeared.
- Ecosystem degradation:** Rapid demographic and economic growth have increased the demand for natural resources leading to significant land use and land cover change (LULCC), habitat fragmentation, etc.
- Rapid Infrastructure development:** Building of roads, buildings, mining for minerals, Hydro power projects etc is being done at an unprecedented pace in this ecologically fragile region.
- Air pollution:** Many major cities in and near Hindu Kush Himalayan (HKH) region have annual average PM2.5 concentrations almost 10 times higher than WHO guidelines. In addition to negative health impacts, this also adds to glacier melt.

Nanda Devi Biosphere Reserve

- It includes as core areas the **Nanda Devi and Valley of Flowers National Parks**, which are one World Heritage site.
- Together they encompass a unique **transition zone between the mountain ranges of the Zanskar and Great Himalaya**.
- Biosphere Reserve includes** reserve forests, evam soyam (civil) forests, panchayat (community) forests, agricultural land, **grassy slopes, alpine meadows (bugiyals) and snow-covered areas**.
- Several important mammal species find refuge in the area such as the **snow leopard, Himalayan black bear , brown bear, musk deer and bharal/blue sheep**.
- Local communities living here mainly belong to two **ethnic groups, the Indo-Mongoloid (Bhotia) and Indo-Aryan**.



Suggestions for Sustainable development in Himalayan Region

Hindu Kush Himalaya (HKH) Assessment has highlighted following suggestions:

- Policy approaches must become more holistic and multidimensional**—incorporating globally recognized mountain priorities, promoting transboundary cooperation, and encouraging development of mountain specific responses.
- Improved understanding of cryospheric change and its drivers** will help reduce the risk of high-mountain hazards.
- To mitigate air pollution and its severe socio-economic impacts, **investment in clean technologies and infrastructure is essential**.
- Local-level autonomous responses to climate variability and extreme events** must be systematically studied, documented, and validated.
- To achieve prosperity in 2080, it is important to **consider two potential pathways for the HKH**— large-scale sustainable development investment with regional cooperation, and bottom-up investment with local and national cooperation.

The Hindu Kush Himalaya (HKH) Assessment

- It is assessment, by International Centre for Integrated Mountain Development (ICIMOD), comprising of important scientific research on the social, economic, and environmental pillars of sustainable mountain development.
- ICIMOD is a regional intergovernmental learning and knowledge sharing centre** serving the eight regional member countries of the HKH – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and is based in Kathmandu, Nepal

- **Governments of the HKH countries need to prioritize use of locally available energy resources.** A regional mechanism should be established to strengthen regional energy trade and cooperation.
- **To better monitor and model cryospheric change and to assess spatial patterns and trends,** researchers urgently need expanded observation networks and data-sharing agreements across the extended HKH region.

5.5. INDIA ENERGY OUTLOOK 2021

Why in News?

India Energy Outlook 2021 was released by International Energy Agency (IEA).

About India Energy Outlook 2021

- It explores the opportunities and challenges ahead for India as it seeks to ensure reliable, affordable and sustainable energy to a growing population.
- Report examines pathways out of the crisis that emerged from the COVID-19 pandemic, as well as longer-term trends, exploring how India's energy sector might evolve to 2040 under a range of scenarios.
- **Key Highlights of the report**

About IEA

- Paris-based IEA currently has 30 members, and was created as a response to the oil crisis of 1973-74. It advises its member countries on issues related to energy security and economic development.
- In 2017, India had joined as an associate member.
- IEA publishes World Energy Outlook, Oil Market Reports etc.
- Recently, India inked MoU with IEA for global energy security, sustainability.
- Partnership will lead to exchange of knowledge and would be a stepping stone towards India becoming a full member of IEA.

Key Trends	<ul style="list-style-type: none"> • India is world's third-largest energy consuming country. Energy use has doubled since 2000, with 80% demand still being met by coal, oil and solid biomass. • On a per capita basis, India's energy use and emissions are less than half the world average. • India will see largest increase in energy demand of any country by 2040. • India's growing energy needs will make it more reliant on fossil fuel imports as its domestic oil and gas production has been stagnant for years. • Despite a new policy for hydrocarbons exploration and production, domestic production of natural gas has been lower than projected in 2015. • Subsidy burden on petrol and diesel has been slashed to zero on backs of subsidy reforms and low crude prices. Focus of subsidy is now shifted to LPG to meet clean cooking access objectives. • India currently devotes nearly 3% of its GDP to energy investment, and an increasing share of this investment is going into clean energy. • India has the potential to become a world leader in battery storage. • 6% share of natural gas in India's current energy mix is among the lowest in the world. • Electricity access has been achieved much more quickly than projected. Over the last decade, India has provided electricity to nearly 50 million new users every year.
Solar-Powered revolution	<ul style="list-style-type: none"> • Progress on renewables deployment has been immense since 2015, especially in solar. In 2019, India added nearly 5 times as much solar capacity as it did in 2015. • Solar power is set to match coal's share in power generation mix within two decades. Presently solar accounts for less than 4% of India's electricity generation. • Positives: innovative regulatory approaches that encourage pairing solar with other generation technologies, and with storage, to offer "round the clock" supply. • Challenges: Delayed payments to generators, land acquisition, and regulatory and contract uncertainty
Set to outperform Paris Agreement targets	<ul style="list-style-type: none"> • Intended Nationally Determined Contribution (INDC): By 2030, India's share of non-fossil fuel in total electricity generation capacity will reach 60% against the target of 40%. • Similarly the emission intensity of the economy would be reduced by 40% against the goal of by 33%-35% by 2030 from 2005 level.
Coal and oil related projections	<p>Coal</p> <ul style="list-style-type: none"> • India is the world's 2nd largest coal market and holds the world's 5th largest coal reserves. • Coal demand would rise by over a third by 2040, with share of imports shrinking to below 30%. • Coal's hold over India's power sector is loosening, with industry accounting for most of increase in coal demand upto 2040. <p>Oil</p> <ul style="list-style-type: none"> • Net dependence on imported oil will rise above 90% by 2040, up from 75% today.

	<ul style="list-style-type: none"> Share of coal in the energy mix has not really changed since 2015. The tremendous growth in renewables has tempered growth in coal capacity , but not prevented it Rise in installed coal-fired capacity (58 GW) was in fact higher than that of solar and wind (49 GW) over 2015-19 period. 	<ul style="list-style-type: none"> Import of fossil fuels would triple during the period with crude oil as the largest component. India's oil demand rise by 2040 will be the largest for any country.
Challenges faced	<ul style="list-style-type: none"> COVID-19 might cause reduction in India's energy demand which would put India's fight against energy poverty at risk, as lower-income households are forced to fall back on more polluting and inefficient sources of energy. 50% rise in emission of carbon dioxide by 2040 making India the 2nd largest emitter. Although per capita emission will remain well below global average. Continued reliance on imported fuels creates vulnerabilities to price cycles and volatility. Energy security hazards could arise in India's domestic market, notably in the electricity sector in the absence of improvements to the financial health of many electricity distribution companies. 	
Recommendations	<ul style="list-style-type: none"> Transform industrial sector through more widespread electrification, material and energy efficiency, technologies such as CCUS, and a switch to progressively lower-carbon fuels. Transport sector needs electrification, efficiency and fuel switching and shifting more freight onto India's soon-to-be-electrified railways. A long-term vision for gas economy needs to incorporate a growing role for biogases and low-carbon hydrogen, for which India has large potential. Key to reform power sector includes improving the cost-reflectiveness of tariffs, the efficiency of billing and collection and reducing technical and commercial losses. 	

5.6. GEOTHERMAL ENERGY

Why in News?

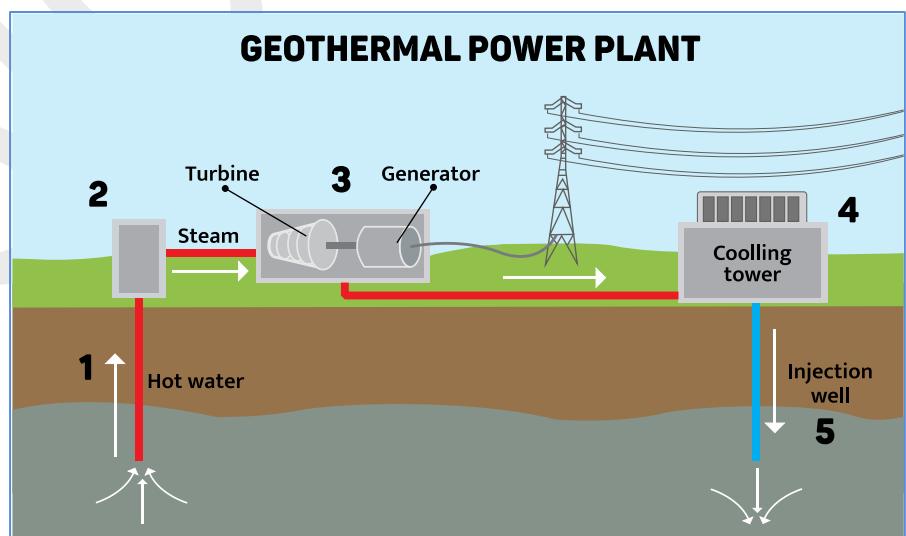
An agreement for establishing **India's first-ever geothermal field development project** in Leh has been signed.

More on news

- The power project known as **Geothermal Field Development Project** will be established at **Puga village of eastern Ladakh**. Puga has been identified as the hotspot of geothermal energy in the country (potential of more than 100 mw of geothermal energies.)
- It is to be developed by ONGC Energy, Ladakh Autonomous Hill Development Council, and Power Department of UT Ladakh.

What is Geothermal Energy?

- Geothermal energy is the thermal energy generated and **stored inside the Earth's crust**. Geothermal power is the electricity generated from the heat source within the earth's crust.
- This geothermal energy **originates from the geological processes** during formation of the planet, radioactive decay of minerals, and from solar energy absorbed at the surface.
- Geothermal energy is converted into electricity in following ways.



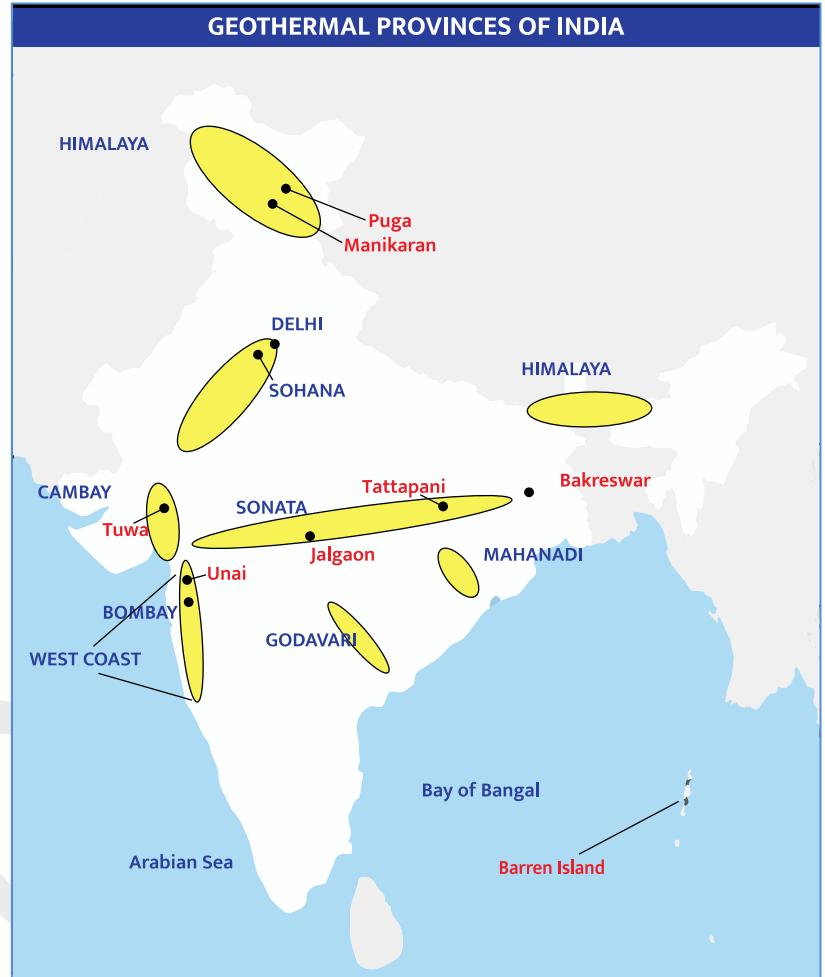
Dry steam plants	Flash steam plants	Binary cycle plants
Hot steam is piped directly from geothermal reservoirs into generators in the power plant. The steam spins turbines, which generate electricity.	Hot water is brought up through a well. Some of the water turns to steam, which drives the turbines. When the steam cools it condenses back into water and is returned to the ground.	These operate on water at relatively lower temperatures . These plants use the heat from the hot water to boil a liquid that boils at a lower temperature than water. When the fluid is heated it turns to steam and spins the turbines.

Geothermal energy in India

- GSI (Geological Survey of India) has identified 350 geothermal energy locations in the country which have a potential of 10000 MW GE power.
- **There are seven geothermal provinces in India:** Himalayas - Ladakh, Manikaran, Tapoban; Sohana - Haryana, Rajasthan; West coast – Maharashtra; Cambay – Khambet; Son-Narmada-Tapi (SONATA) - Tatapani, Anhoni-Samoni; Godavari – Manuguru; Mahanadi – Bakreshwar. (see map)

Uses of Geothermal energy (GE)

- **For houses:** To heat/cool down temperature in house during winter/hot seasons.
- **For Farms:** used by farmers to **heat their greenhouses**. This makes it possible to grow tropical plants such as citrus trees in the middle of the winter.
 - Geothermal energy is necessary in fish farms. Tropical fish and other aquatic animals need warm water to survive and geothermal energy system is a suitable way to provide it.
- **For Industries:** It can be used in the process of extracting precious metals from ore.
- **For Infrastructure:** It is a great source for preventing sidewalks and roads from freezing in winter. Ex. Netherlands has started to use geothermal energy to keep bike roads from icing in the colder seasons.



Advantages of Using Geothermal energy

- **Low carbon footprint:** Pollution associated with GE, is relatively minimal when compared to fossil fuels.
- **Renewable in nature:** The constant flow of heat from the Earth makes it inexhaustible and limitless.
- **Stable and Reliable:** GE does not fluctuate and the resource is always available to be tapped into, unlike with wind or solar energy.
- **Fulfill need of remote locations:** It is a site-specific renewable source of energy, specifically suitable for catering to the energy needs of remote/interior localities.
- **High Efficiency:** Geothermal heat pump systems use 25% to 50% less electricity than conventional systems for heating or cooling, and require less space for hardware as opposed to conventional systems.
- **Minimal Maintenance:** Since geothermal systems have only few movable parts therefore the life span is relatively high.
- **By-products:** Mineral by-products from hot springs like silica, borax, cesium etc. may be exploited.

Disadvantages of Geothermal energy

- **High Investment Costs:** The cost of drilling wells to geothermal reservoir is very expensive. Added to that is the cost of heating, and cooling system installation and the cost goes even higher.
- **Location specific:** Geothermal plants must be installed in locations that have access to energy, which ensures that certain regions cannot take advantage of this benefit.
- **Environmental Concerns about Greenhouse Emissions:** The gases stored under Earth's surface are released into the atmosphere during digging. While these gases are also released into the atmosphere naturally, the rate increases near geothermal plants.

- **Surface instability and Earthquakes:** Geothermal energy runs the risk of triggering earthquakes as geothermal power plant construction involves drilling hot rock that contains trapped water or steam in its pore spaces.
- **Sustainability issues:** Though most geothermal reservoirs are permanent; they can be depleted if the water is extracted faster than it can replenish itself.

Government initiative to promote Geothermal Energy

- **Draft Indian geothermal energy development framework released by Ministry of New & Renewable Energy.**
Key goals include:
 - Deployment of 1,000 MW (thermal) and 20 MW (electric) Geothermal Energy Capacity in the initial phase till 2022 and 10,000 MW (thermal) & 100 MW (elect) by 2030.
 - International collaboration to Harness 10,000 MW (10 GW) of geothermal energy by 2030 through active international collaboration with countries such as the US, Philippines, Mexico and New Zealand.
- **Draft National Policy on Geo-Thermal Energy** which envisions to establish India as a global leader in Geo-thermal power by deployment of Geo-thermal energy capacity of 1000 MW in the initial phase till 2022.
 - It proposes to **assess the potential of geothermal resources in country** and promoting R&D projects of Power production and Geo-exchange Pumps.

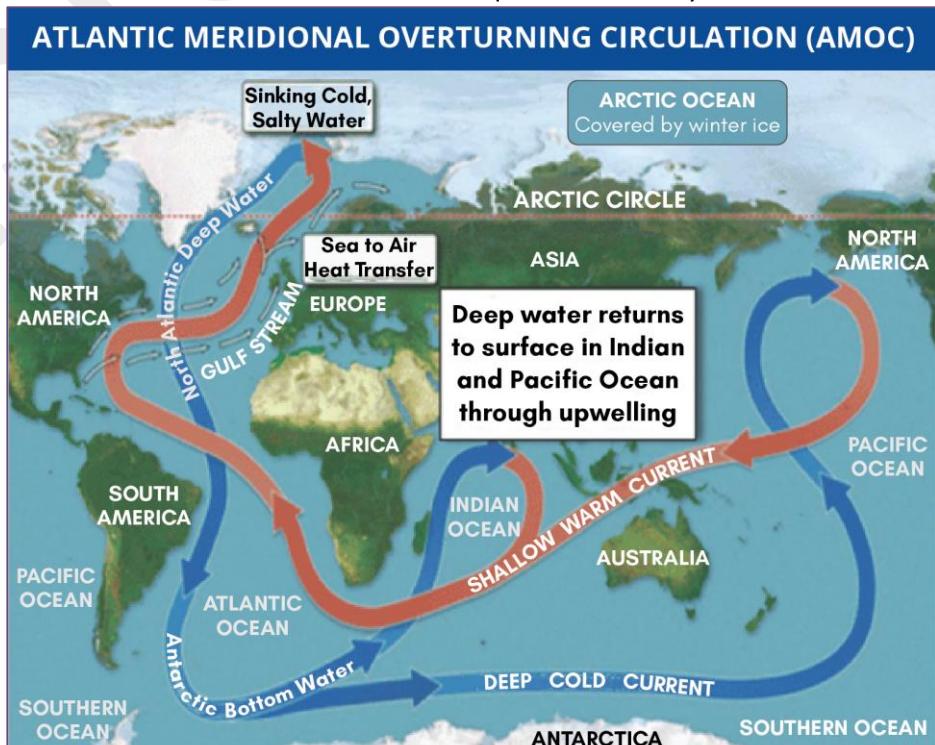
5.7. ATLANTIC MERIDIONAL OVERTURNING CIRCULATION (AMOC)

Why in News?

Recent data suggests that **Gulf Stream – also known as the Atlantic Meridional Overturning Circulation (AMOC)** is at its weakest in more than a millennium, and climate breakdown is the probable cause.

About Atlantic Meridional Overturning Circulation (AMOC)

- It is a large system of ocean currents carrying warm surface water from the equator up north, and sending cold, low-salinity deep water back down south.
- It works like a giant conveyor belt and is driven by differences in temperature and salt content – the water's density.
 - The ocean conveyor gets its **start in the Norwegian Sea**, where warm water from the Gulf Stream heats the atmosphere in the cold northern latitudes.
 - ✓ Low temperature and a high salt content make the water cooler and denser, causing it to sink to the bottom of the ocean.
 - As more warm water is transported north, **the cooler water sinks and moves south to make room for the incoming warm water**. This cold bottom water flows south of the equator all the way down to Antarctica.
 - Eventually, the **cold bottom waters returns to the surface** through mixing and wind-driven upwelling, continuing the conveyor belt that encircles the globe.
 - ✓ Upwelling is a process in which deep, cold water rises toward the surface.
- It plays a vital role in redistributing heat and energy throughout earth as the warm water it carries releases heat into the atmosphere, and in absorbing and storing atmospheric carbon.



- AMOC influences the climate of the east coast of North America and the west coast of Europe.
- It brings warm and mild weather to Europe.
- **Impact of weakened AMOC**
 - It would raise sea levels on the east coast of the US, increase the number and severity of storms hitting Britain, more intense winters and an increase in damaging heatwaves and droughts across Europe.
 - It may cause more storms or a drier Sahel in Africa due to the downward shift of the tropical rain belt.

Indian ocean and AMOC

- Recent studies have found that rising temperatures in the Indian Ocean can help boost the AMOC and delay slow down.
- Warming in the Indian Ocean generates additional precipitation, which, in turn, draws more air from other parts of the world, including the Atlantic.
- The higher level of precipitation in the Indian Ocean will reduce precipitation in the Atlantic and increase salinity in the waters.
- This saline water in the Atlantic, as it comes north via AMOC, will get cold much quicker than usual and sink faster, acting as a jump start for AMOC, intensifying the circulation.



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प्रारंभिक एवं मुख्य परीक्षा 2022

इनोवेटिव क्लासरूम प्रोग्राम

लाइव / ऑनलाइन कक्षाएं भी उपलब्ध

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मीलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉपुलर व्हाइट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन

- सीसैट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसैट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

DELHI **23 March | 1:30 PM | 21 Jan | 5 PM**

LUCKNOW **5 APRIL**

JAIPUR **17 MARCH | 4 PM**

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6. SOCIAL ISSUES

6.1. TWO-CHILD POLICY

Why in news?

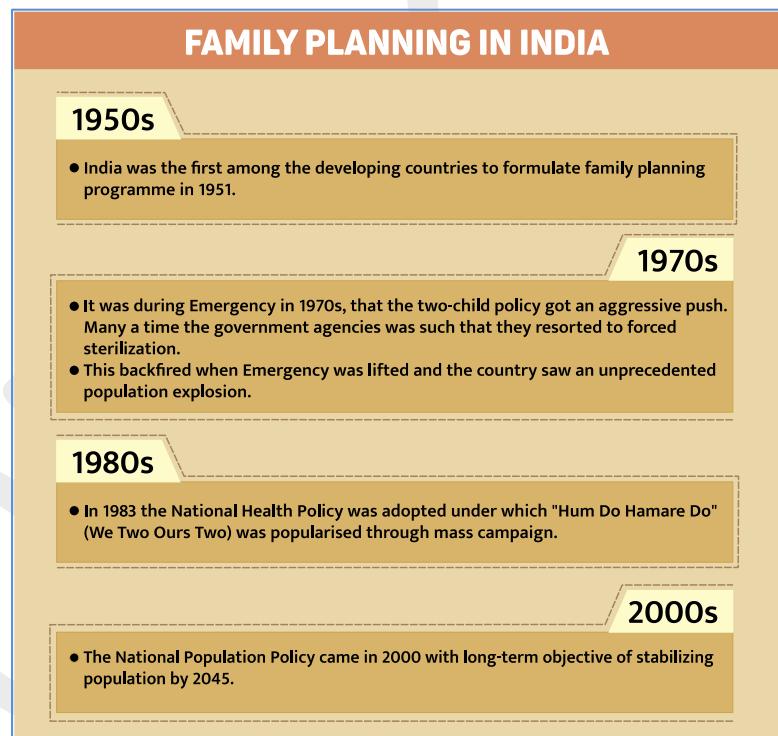
Recently, 3 candidates from the Municipal Corporations of Gujarat were disqualified under the two-child policy in place in the state for candidates.

More about news

- In 2005, Gujarat amended the Gujarat Local Authorities Act to “**prevent a person having more than two children to be a member of panchayat**, or the councillor of a municipality or municipal corporation”.
- The rationale behind the two-child policy was said to be the need to “**order and stabilise**” the growing population of the country, beginning with elected representatives, who should lead by example.

About two-child policy in India

- Presently, India has **no national policy** mandating specific number of children.
- The **Family Welfare Programme in India is voluntary in nature**. It enables couples to decide the size of their family and adopt the family planning methods best suited to them according to their choice without any compulsion.
- **In December 2020, a PIL was filed in the Supreme Court** seeking denial of access to government jobs, subsidies, right to vote, to property and to free shelter to those with more than two children.
 - However, **Ministry of Health and Family welfare has refused to implement** such a legally enforceable two-child policy.
- **Several states**, including Assam, Maharashtra, Odisha, Rajasthan, Telangana and Andhra Pradesh, already **have some form of the two-child norm in place** for those running for elected government posts or government jobs.



Why there is a need to have such two-child policy?

- **Health consequences:** Mortality rates of mothers increase as the number of children increases. Some experts believe that having pregnancies too close together doesn't give the mother time to recover after losing nutrients such as iron and foliate after pregnancy and breastfeeding. This is called maternal depletion syndrome.
- **Limited resources:** India is a young country with over 60% of the Indian population under the age of 35 years. Therefore, even if couples decide to have only one or two children, India's population will continue to increase until 2051. This would put huge burden on India's natural resources limiting economic growth.
- **High standard of life:** Less number of children results in judicious use of family resources. Such families have more resources at their disposal for spending on health and education of children.
- **Lack of awareness:** Poor or illiterate section of society may not understand the benefits of small number of children. In this predicament, legal enforcement of two child policy may be needed for putting a cap on population stabilization.

What are the Negative Consequences of having such two-child policy?

- **Domestic experience not encouraging:** After the 1991 census, several states prohibited those who had more than two children from holding any panchayat post.

- Instead of better family planning, this had unintended consequences like **men deserting or divorcing wives if they became pregnant a third time**, men abandoning or disowning their third child, sex-selective and unsafe abortions etc.
- **International experience not encouraging:** Any coercion to have a certain number of children is counter-productive and leads to demographic distortions.
 - For example: China's one-child policy led to sex-selective abortions and an ageing population with a fast-declining workforce. The skewed sex ratio also led to increased trafficking of women and forced prostitution.
- **Replacement rate is almost achieved:** The fertility rate across Indian states has fallen without coercive measures as family incomes increased and women were educated.
 - According to the **National Health Family Survey-5 (NFHS-5)**, **women have fewer than two children**, on average. Therefore, India does not need to go in for coercive family planning strategies at this point.
 - Also, **there are communities where the TFR is below replacement level**. For example, Parsis are considered to be on the verge of extinction due to very low TFR. National policy for two-child would have dampening effect on the number of these communities.
- **Contravention of violation international laws:** India became a signatory to the **International Conference on Population and Development Declaration in 1994**. Thus, India is committed to honour the individual right of the couples to decide freely the number of children they want to have.
 - These measures would be **contrary to the constitutional Right to Education (Article 21A, Article 45 and 51A) and Right to Life (Article 21)**.
- **Exclusion from benefits:** Such a policy takes away the basic rights of citizens like contesting election and voting. These policies also result in denial of merit.
 - **Moreover, such a policy reinforcing the inequality** and results in exclusion of marginalized from welfare service.

Way ahead

- **Increase legal age of marriage:** This would delay the age of first child birth and more maturity among couple may enable them to make informed decision regarding desirable number of children they should have.
 - Government is pondering to increase the legal age of marriage of women to 21 years. This would be a positive step for stabilizing the population growth also.
- **Increase the education level of girl child:** Longer period of girl child in school would delay the early pregnancy. It would also empower them to have control over decision on number of children they want.
 - Moreover, good education would **pave the way for effective participation of women in the workforce**. This would further empower them to have control on their reproductive rights.
- **Involve community leadership:** Community leaders including religious leaders, generally, have high reputations. Hence, they could be involved for raising awareness about socio-economic and health benefits of having less number of children.
- **Change the priority under family planning budget:** Currently, family planning programmes account for about 4% of the National Health Mission budget majority of which goes for incentives to families and service providers for sterilization.
 - The budget for family planning should focus on **reducing social and cultural taboos in using contraception, and behaviour change communication, especially for men**.

Related information

- **Fertility:** It means the actual bearing of children during a woman's reproductive period i.e. roughly from 15 to 45, a period of 30 years.
- **Fertility rate:** It refers to the number of live births during a year per 1,000 female populations aged 15-49 years at the midpoint of the same year.
- **Total Fertility Rate (TFR):** The number of children that would be born per woman, assuming no female mortality at childbearing age and the age-specific fertility rates of a specified country and reference period.
- **Replacement level fertility:** It refers to TFR at 2.1 which is the level of fertility at which a population exactly replaces itself from one generation to the next.

6.2. PROTECTION OF CHILDREN FROM SEXUAL OFFENCES (POCSO) ACT, 2012

Why in news?

Recently, the single-judge bench of the Bombay High Court (HC) set aside charges of sexual assault under POCSO Act against a man accused of molesting a 12 year old girl child.

More about the news

- The Bombay HC absolved an accused from the charges under POCSO Act and instead **chose to apply Section 354 of the IPC**.
- The High Court judge held that mere groping **without “skin-to-skin contact” cannot be termed as sexual assault under the POCSO Act**.
- The phrase **“skin-to-skin contact” is not mentioned under the POCSO Act**.
- The **Supreme Court has stayed the order** as it was “likely to set a dangerous precedent”.

About POCSO Act, 2012

- It is a comprehensive law for the **protection of children** (under the age of 18) from the offences of **sexual assault, sexual harassment and pornography**.
 - **UN Convention on the Rights of the Child, 1989 (ratified by India in 1992)** requires sexual exploitation and sexual abuse to be addressed as heinous crimes.
- It incorporates **child-friendly mechanisms at every stage of the judicial process** which include reporting, recording of evidence, investigation and speedy trial of offences **through designated Special Courts**.
- It also mandates that the **investigation in the cases is to be completed in two months and trial in 6 months**. For this purpose **Fast Track Special Courts (FTSCs)** are established.
- It also **punishes criminals who are in positions of trust of authority** like public servants, staff of educational institutions, police etc.
- It **does not explicitly recognizes grooming**. However, experts say that section 11 of the Act can be interpreted to recognize and criminalise. Grooming involves acts of establishing relationship with a child so as to facilitate sexual contact with the child. Section 67(b) of the Information Technology Act criminalizes grooming.
- In 2019 the Act was amended to includes following provisions
 - **Increases the minimum punishment** (including death penalty) for penetrative sexual assault, aggravated penetrative sexual assault.
 - **Assault resulting in death of child, and assault committed during a natural calamity**, or in any similar situations of violence are covered as **Aggravated penetrative sexual assault**.
 - **Defines child pornography** as any visual depiction of sexually explicit conduct involving a child including photograph, video, digital or computergenerated image indistinguishable from an actual child.
 - **Storage of pornographic material:** Includes two other offences (i) failing to destroy, or delete, or report pornographic material involving a child (ii) transmitting, displaying, distributing such material except for the purpose of reporting it.

Related information

POCSO Rules, 2020

- **Mandatory police verification of staff** in any institution housing children or coming in regular contact with children like schools, care homes, sports academies etc.
- **State Governments to formulate a child protection policy** to be adopted by all institutions, organizations, or any other agency working with, or coming in contact with children
- **Central Government and State Governments shall**
 - **Provide periodic training** (like sensitization workshops etc.) to all persons, coming in contact with the children, to sensitize them about child safety and protection.
 - **Prepare age-appropriate educational material** and curriculum for children, informing them about personal safety, emotional and mental wellbeing, reporting mechanisms including Childline helpline services (toll free number-1098) etc.
- **Capacity building for police personnel and forensic experts** for building their capacities in their respective roles on a regular basis
- Any person who has received any pornographic material involving a child or any information regarding such **pornographic material shall report the contents**.

Section 354 IPC vs. POCSO Act, 2012

Specifics	Section 354 IPC	POCSO
Age of the victim	Punishment for the offence irrespective of any age of the victim	For the protection of children
Gender of the victim	• Female	• Gender neutral
Definition of sexual assault	• Definition is generic • It makes it a crime to use force against a woman, or even threaten to use force, if the intention is to 'outrage her modesty' .	• The Act for the first time, defines " penetrative sexual assault ", " sexual assault " and " sexual harassment " • Acts of " sexual assault " are explicitly mentioned such as touching various private parts or doing any other act which involves physical contact without penetration .
Burden of proof	Lies on the prosecution. The accused is ' deemed to be innocent until proven guilty '	Lies on the accused. The accused is ' deemed to be guilty until proven innocent '
Punishment	Minimum 1 year this may extend to five years along with a fine.	Minimum 3 Years this may extend to 5 years, in addition to a fine.

Impact of POCSO

Law has not been able to produce expected deterrence. Proportion of child victim in rape cases has increased. Higher numbers of bails are granted for crimes committed under POCSO vis-à-vis other crimes. Conviction rate in POCSO cases in 2016 (the latest year for which data is available) was only 28.2%. 89% of the cases of child sexual abuse were awaiting justice at the end of 2019.

Worrying stats on sexual violence against children

CHART 1 Share of child rape victims has gone up

■ % share of rape victims up 18 years among total rape victims

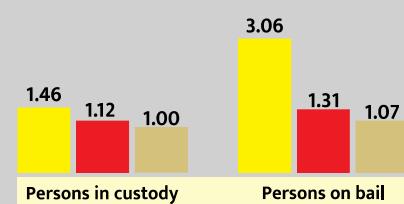


CHART 2 Bails are more common in POCSO

Ratio at the end of year & beginning of year (2015)

■ POC defense related crimes ■ All crimes against children

■ Total Cognizable IPC Crimes



Challenges in implementing POCSO Act

- **Proving the age of the child:** The POCSO Act is silent on what documents are to be considered for determining the age of the child victim. Hence, only the birth certificate, the school certificate or the matriculation certificate is considered as the proof (as they are mentioned as a proof under the Juvenile Justice Rules).
 - However, **children who are only able to produce other legal documents** (such as a passport) have to **undergo a bone ossification test**.
 - This test can give a rough estimate of the age of the child at best. This creates a hurdle in delivery of justice.
- **Police system:** Police fall under the jurisdiction of the states. It suffers from various issues like shortage of human resource (including skilled human resource), politicization, overburdened with work. As a result, many a time the victim has to face challenges like refusal by police to file the FIR, interrogation in an insensitive way etc.

- **Forensic samples:** Due to poor training they may not collect forensic samples with due diligence. Further, such samples often end up getting contaminated, or putrefied due to improper storage.
- **Overburdened judiciary:** At present, special courts set up under the law deal with other kinds of criminal and civil cases as well. Moreover, frequent adjournments reduce the chances of the victim being able to recollect the facts of the incident accurately.
- **Interim compensation:** The child victim is entitled to interim compensation to meet their immediate needs. However, it is necessary for all stakeholders to understand that interim compensation should not be restrictively interpreted to mean only his or her medical needs. It includes every need of the child necessary for rehabilitation.
- **Public Prosecutor:** Generally, defense lawyers in POCSO cases are specialised, but the same did not hold true for the public prosecutors, leading to a "mismatch".
- **National and State Commissions for the Protection of Child Rights:** They are required to monitor and evaluate the implementation of the Act in addition to generating public awareness. However, their functioning and evaluation procedure is not open to public scrutiny.

Way ahead

- **Assessment of the impact:** There needs to be a nationwide assessment of the impact POCSO Act had since its inception. This would pave the way for bringing the required changes in the system.
- **Police reform:** Police is the first interface between the victim and the judiciary. Therefore, effective functioning and sensitivity in police is a prerequisite in dealing with cases of Child sex abuse.
- **Overhaul of the criminal justice delivery system:** The courts set up under this law deal must exclusively deal with child sexual abuse matters. Also, there is a need for audit of funds requirement, practices and procedures of the 60specialat courts, set up under this law.
 - There is a need for **60pecialization of the judges, prosecutors and police officers** who deal with such cases.
 - **Train and sensitise all the judicial, government and medical officials** who deal with such matters as well as effectively ensure privacy of the victims.
 - **Bringing changes in evidence law, methods of investigation** and strengthening of the **forensics department** of the government to keep pace with the changes in the nature of child sexual abuse crimes.
 - **Emerging nature of crimes** also need to be looked at, as there are difficulties associated with reporting and investigation of these new types of offences.
 - **Improve the compensation** and set up a support system as many victims have to forego their education due to several reasons.
- **Awareness:** Awareness among children and parents need to be enhanced.

6.3. WATER SANITATION AND HYGIENE (WASH)

Why in news?

Recently, researchers from the Center for Disease Dynamics, Economics and Policy (CDDEP) US, have estimated the **cost of ensuring Water Sanitation and Hygiene (WASH) and taking related steps for infection prevention and control in India.**

More about news

- This study was a part of a larger **project to determine the cost-effectiveness of WASH interventions** to reduce healthcare-associated infections among mother and neonates across the Indian healthcare system.
- According to study,
 - Improving WASH across the public healthcare facilities in India and maintaining this for a year would **cost \$354 million in capital costs and \$289 million in recurrent expenses.**
 - ✓ **Most costly interventions were providing clean water, linen reprocessing and sanitation.**
 - ✓ **The least expensive interventions were hand hygiene, medical device reprocessing and environmental surface cleaning.**
 - **Inadequacies in proving WASH and lack of infection prevention and control** can lead to healthcare associated infections.

- ✓ **Causative agents of healthcare associated infections** included Pathogens like *Acinetobacter baumannii*, *Enterococcus faecalis*, *Escherichia coli*, *Salmonella typhi*, *Streptococcus pneumoniae* etc which can develop resistance to antibiotics.
- ✓ Common healthcare associated infections include **central-line-associated bloodstream infections, catheter-associated urinary tract infections, surgical site infections** and ventilator-associated pneumonia

About Water Sanitation and Hygiene (WASH)

- WASH is a collective term for Water, Sanitation and Hygiene relating to
 - **Access to safe drinking water**
 - **Improved sanitation facilities**
 - **Maintaining basic level of hygiene.**
- **WHO has adopted WASH Strategy, 2018-25**
 - **Vision:** To substantially improve health through the safe management of water, sanitation and hygiene services in all settings.
 - **Role of the WHO:** Being a technical agency, the WHO does not directly implement WASH infrastructure projects. In fact it focuses on its roles of
 - ✓ Generating and disseminating **standards and guidelines**
 - ✓ **Strengthening health sector capacities** in providing WASH support
 - ✓ **Public health oversight** through surveillance and regulation,
 - ✓ Promoting the **generation of evidence**
 - ✓ **Empowering countries** through technical cooperation to strengthen national systems and institutions etc.
- The UN General Assembly in 2010 had adopted a resolution for **progressive realization of the human rights to safe drinking-water and sanitation**.
- **India & WASH**
 - Inadequate WASH services in India's health facilities, contributes to the high neonatal mortality rate.
 - In India's schools, recent reports also showed that **22% did not have appropriate toilets for girls, 58% of preschools had no toilet at all and 56% of preschools** had no water on the premises.

Related information

UNICEF strategy for Water, Sanitation and Hygiene 2016-2030

- The purpose of this strategy is to guide **UNICEF's organization-wide contribution to achieving SDG 6 by 2030**.
- It is designed to **inform and support UNICEF's core planning and strategy processes**, and to guide the implementation of its programmes.

UN Sanitation and Hygiene Fund (SHF)

- SHF was launched in 2020 by the UN and is hosted by the UN Office for Project Services.
- Its purpose is to provide accelerated funding to countries with the **heaviest burden of diseases stemming from lack of sanitation services** and have the least ability to respond to them.
- It also aims to raise **\$2 billion over the next five years for these countries**.

WASH and INDIA	
Steps taken by India	Description
1. Jal Jeevan Mission	<ul style="list-style-type: none"> • Launched in 2019 to provide every rural household with water supply by 2024.
2. Swachh Bharat Mission (SBM)	<ul style="list-style-type: none"> • On October 2, 2019, all the villages in the 36 States and Union Territories of India were declared open defecation-free (ODF). • In 2020, the centre launched SBM 2.0 which aims at ODF plus by focusing on sustainability of the ODF.
3. 100-day campaign for 100% coverage	<ul style="list-style-type: none"> • Launched by the Ministry of Jal Shakti on Gandhi Jayanti in 2020. • Aimed at providing potable piped water supply for drinking and cooking purposes and tap water for hand washing and in toilets in every school, anganwadi and ashramshala or residential tribal school in 100 days.
4. Namami Gange program	<ul style="list-style-type: none"> • Holistic program on cleaning the Ganga. • It entails setting up biodiversity centers, crematoriums and toilets along the river banks to reduce pollution in the river.
5. Awareness campaign on benefits of hand washing	<ul style="list-style-type: none"> • Upon the onset of COVID-19 pandemic government through various measures like call tunes, is promoting awareness about benefits of frequent hand washing.

Importance of WASH

- **WASH & Health**
 - WASH is a **prerequisite to prevent infections** like cholera, diarrhea (the third leading cause of childhood mortality in India), and neglected tropical diseases (NTDs). Prevention of infection helps in
 - ✓ **Reducing Anti-Microbial Resistance (AMR)** as well as Saving antibiotics and other drugs for future needs
 - ✓ **Saves health expenditures**
 - ✓ **Improve nutritional outcomes**
 - ✓ **Improves school attendance** thereby enhancing dignity
 - ✓ Create **resilient communities** living in healthy environments
- **WASH & SDG**
 - WASH is an important component of the **Sustainable Development Goals (SDGs), 2030**
 - **SDG3:** Good health and well-being
 - ✓ Combating water-borne diseases (3.3)
 - ✓ Reducing death and illness from unsafe water, unsafe sanitation, and lack of hygiene (3.9)
 - **SDG 6:** Ensuring availability and sustainable management of water sanitation for all.
- **According to the 2020 analysis by the World Resources Institute,**
 - Securing water for communities across the world by 2030 could cost **just over 1% of global GDP**.
 - **It would take India 3.2% of the GDP** to deliver sustainable water management by 2030 to deliver sustainable water management.

WHO STRATEGIC FRAMEWORK ON WASH		
STRATEGIC APPROACHES	RESULTS AREAS	PRINCIPLES
<ul style="list-style-type: none"> • Develop and disseminate norms, tools, standards • Empower countries through technical cooperation • Monitoring and research to inform policies and programmes • Promote integration of WASH with other programmes • Respond to emerging issues 	<ul style="list-style-type: none"> • Integration of WASH with other health programmes • Drinking-water quality and safety • WASH in health facilities • WASH monitoring and evidence (JMP, GLASS, GEMI, Burden of Disease) • Sanitation and wastewater • Emerging issues (e.g. climate change, AMR) 	<ul style="list-style-type: none"> • Prioritize actions with highest public health benefit • Align with Sustainable Development Goals • Employ highest quality science and a full range of practical experience • Strengthen health capacities in promoting safe WASH • Stimulate sustainable change • Engage with partners/positively influence partnerships • Promote a contextual, incremental improvement approach • Capitalize on existing policy frameworks that promote WASH and stipulate national target setting



Challenges in ensuring WASH

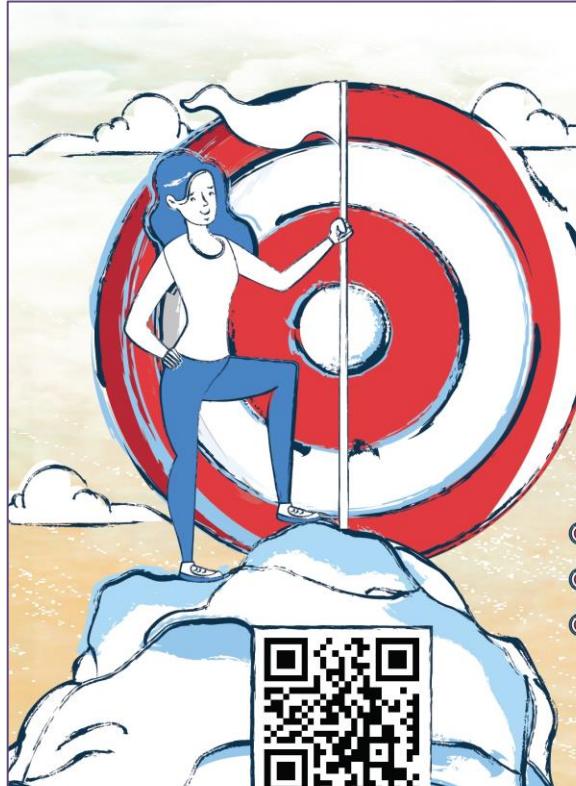
- **Access to clean water:** In India over 120 million households lack access to clean water near their homes, the highest in the world (the UN-Water). Also, in rural India, close to 90% households do not have piped connections
- **Most of the Indian rivers are contaminated** due to industrial pollutants. For example, each day, approximately 500 million litres of wastewater from industrial sources is dumped into the Ganga.
- **Even ground water is also contaminated** in many parts of the country. For example the presence of arsenic in the eastern belt in the Ganga-Brahmaputra region.
- **Unsafe tap water:** In 2019, the Bureau of Indian Standards (BIS) ranked various cities based on tap water quality. In 13 cities all tested samples failed to meet the BIS norms for piped drinking water.
- **Gap in Sanitation and Hygiene:** The National Statistical Office (NSO), in November 2019, titled “Drinking water, sanitation, hygiene and housing conditions in India”, contradicts the Swachh Bharat data on open defecation free status. The report claimed that
 - about **28.7% of rural households** across India still **lacked access to any form of latrines**.
 - **3.5% of those who have access to latrines, don't use it** (it reflects the behavioural issue).

Way ahead

- **Water:** Following steps would help enhancing the access to safe drinking water
 - **Regulatory measure:** It is mandatory for bottled water manufacturers to meet quality standards by the BIS standard. However, compliance with quality standards is voluntary for the public agencies which supply and distribute piped water. This shortcoming needs to be rectified.
 - **Sensitisation, for judicious use of water and prevention of water bodies from pollution** is the need of the hour.

- **Infrastructure for storage** of water must be developed properly to ensure that people have access to safe water across the country.
- **Sanitation and hygiene:** Traditional approaches to behavioural change on hygiene have been limited to educational messages via awareness campaigns. Such an approach does not necessarily lead to sustained behaviour change.
 - **Multiple factors-** emotions, habits, settings, infrastructure, poverty, attitude, and lack of will- **prevent the conversion of hygiene-related knowledge into practice** and practice into a habit.
 - Programmes on hygiene need to **appreciate the interplay between these factors and design an integrated approach** rather than addressing it in isolation. Door-to-door campaigns, community meetings, emotional messaging, pledge, prayers, could be great platforms to promote the benefits of handwashing.

 SMART QUIZ	<p>You can scan this QR code to practice the Smart Quiz of Social Issues & Social Schemes at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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7. SCIENCE AND TECHNOLOGY

7.1. NATIONAL STRATEGY ON BLOCKCHAIN

Why in News?

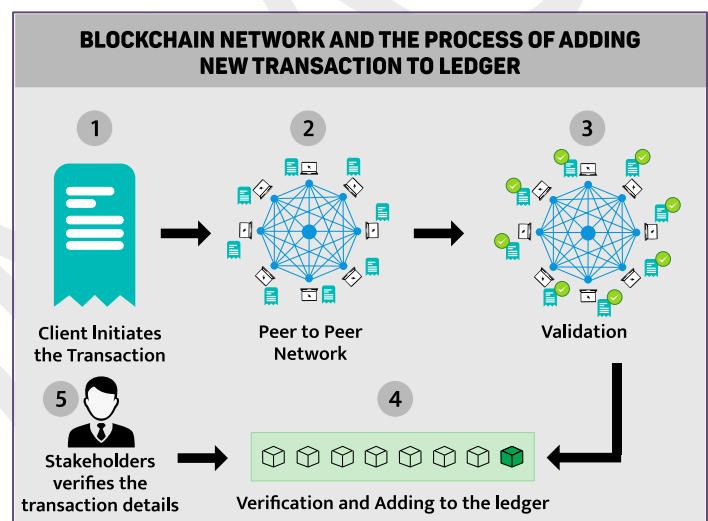
Ministry of Electronics and Information and Technology (MeitY) has released drafted National Strategy on Blockchain

What is blockchain?

- A blockchain is essentially a **digital ledger of transactions (DLT)** that is **duplicated and distributed across the entire network of computer systems** on the blockchain.
 - Blockchain is a specific type of DLT in which **blocks are linearly connected to each other**. (This may not be the case in other types of DLT.)
 - Thus, **all blockchains are DLT; however, all DLT platforms are not blockchains.**

What is blockchain?	
A Database	A list of records / transaction, like a ledger, that keeps growing as more entries are added;
Which is Distributed	Copies of the entire database are stored on multiple computers on a network, syncing within minutes / seconds;
Adjustable Transparent	Records stored in the database may be made visible to relevant stakeholder without risk of alteration;
Highly Secure and Immutable	Malicious actors (hackers) can no longer just attack one computer and change any records;
	The mathematical algorithms make it impossible to changes / delete any data once recorded and accepted

- Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger.
- Copy of each transaction along with its hash is stored in the ledger** shared across all participants of the network.
- Blockchains create trust by acting as a shared database**, distributed across vast peer-to-peer networks that have no single point of failure and no single source of truth, implying that no individual entity can own a blockchain network, and no single entity can modify the data stored on it unilaterally without the consensus of its peers.
- Blockchain can be used in Permissioned and Permission less models.**
 - Most of the first generation blockchains are permissionless such as Bitcoin and Ethereum. Permissionless blockchain systems are highly transparent, as everyone can see all the transactions on the ledger.
 - Permissioned model has applications in various domains such as healthcare, cyber security, Governance, media, logistics & hospitality, education, legal, energy, smart cities and so on.
- Salient properties of the Blockchain technology are **user anonymity, cryptography based security, immutability (i.e., an entry cannot be changed without recreating it), shared read & write, accountability, transparency and distributed ownership.**



Potential Blockchain Applications	
<ul style="list-style-type: none"> Transfer of Land Records (Property Record Management); Digital Certificates Management (Education, Death, Birth, agreements, etc); Pharmaceutical supply chain; e-Notary Service (Blockchain enabled e-Sign Solution); Farm Insurance; Identity management; Power distribution; 	<ul style="list-style-type: none"> Duty payments; Agriculture and other supply chains; eVoting; Electronic Health Record Management; Digital Evidence Management System; Public Service Delivery; IoT Device Management and Security; Vehicle lifecycle management; Chit fund operations administration; Microfinance for Self-Help Groups (SHG)

- Blockchain was first introduced in the design and development of cryptocurrency, **Bitcoin in 2009 allegedly by a Japanese entrepreneur named Satoshi Nakamoto.**

Importance of Blockchain Technology

- Blockchain can bring value addition in e-Governance:** Improves Transparency & Accountability, Building Trust with Citizens, speed up transactions, Protecting Sensitive Data and Reducing Costs & Improving Efficiency.
- No Middlemen in Transaction:** In blockchain technology, there is no chance for any kind of mediators or intermediaries in any transactions such as for digital payments.
- Protect businesses from fraud:** Blockchain is open-source ledger which is why it is very easy to identify if a fraud has taken place since every transaction is recorded on them.
- Blockchain Business Value:** The World Economic Forum (WEF) anticipates that **10% of the global GDP will be stored on blockchain by 2025** and lists blockchain as one of 7 technologies that are anticipated to revolutionize various aspects of our lives.

Challenges to the adoption of Blockchain Technology identified

- Technological Challenges**
 - Performance:** Replication of data on each node as well as calculations associated with encryption-decryption and hashing at every node large computational capacity. This may lead to performance issues.
 - Scalability:** Variable requirements for processing power, network bandwidth, block size, Consensus etc. affect their scalability.
 - Storage:** Data stored in the Blockchain becomes perpetual. Also, such data is replicated at all the nodes in the network. This demands a heavy resource in terms of storage.
 - Transaction details and interoperability:** In order to get the benefit of interoperability across similar applications, transaction standardization for certain classes of applications has to be evolved.
- Legal & implementational Challenges**
 - Privacy & Regulation:** Decentralized storage on every node creates privacy challenges. The state of regulations and compliance for Blockchain applications is still ambiguous.
 - ✓ **Right to be Forgotten** is a prevailing feature of the Draft Personal Data Protection Bill, 2019. Blockchain where data cannot be deleted, and history of data is always accessible contradicts this principle.
 - Digital Signatures:** It is a core part of Blockchain networks and application.

SWOT Analysis of Blockchain Technology			
Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Distributed resilience and control Decentralized network Open source Security and modern cryptography Asset provenance Native asset creation Dynamic and fluid value exchange 	<ul style="list-style-type: none"> Lack of ledger interoperability Customer unfamiliarity and poor user experience Lack of intraledger and interledger governance Lack of hardened/tested technology Limitation of smart contract code programming model Wallet and key management Poor tooling and poor developer user experience Skills scarcity and cost Immature scalability Lack of trust in new technology suppliers 	<ul style="list-style-type: none"> Reduced transaction costs Business process acceleration and efficiency Reduced fraud Reduced systemic risk Monetary democratization New business-model enablement Application rationalization and redundancy 	<ul style="list-style-type: none"> Legal jurisdictional barriers Politics and hostile nation-state actors Technology failures Institutional adoption barriers Divergent blockchains Ledger conflicts/competition Poor governance

Right to be Forgotten (RTF)

- It refers to the ability of individuals to limit, de-link, delete, or correct the disclosure of personal information on the internet that is misleading, embarrassing, irrelevant, or outdated.
- Such disclosure, may or may not be a consequence of unlawful processing by the data fiduciary.
- Europe's General Data Protection Regulation (GDPR) include the "right to be forgotten."

- ✓ Currently there exist no details in the Information Technology Act, 2000 on transactions involving immovable property, wills and negotiable instruments. Thus, this provision excludes the applicability of the technology for such activities.
- **Localization:** Data redundancies are stored across all nodes on a blockchain network. Thus, the technology may hit a hurdle with data localization requirements.
- **Skillset and Awareness:** Many projects which have started implementing Blockchain based applications are confronted with a resource crunch of the skilled manpower.

Key recommendations by National Strategy on Blockchain

This document provides an insight on the strategies for metamorphosing Indian Blockchain ecosystem to make India as one of the leading countries in terms of harnessing the benefits of this emerging technology by focusing on Technological and Administrative aspects.

- **Need for National Level Blockchain Framework (NLBF):** NLBF can aid in scaling deployments for developed applications, creating shared infrastructure and also enable cross domain application development.
 - **Government does not create any framework for the time being** and allows the ecosystem to evolve freely with the active support of the government.
 - In order to plan and implement NLBF, a multi-institutional Centre of Excellence is proposed.
- **Integration of important National Level Services to Blockchain** such as eSign, ePramaan, DigiLocker etc.
- **Focus on research** in the domains of standards & interoperability, scalability & performance, consensus mechanisms, security & privacy, key management, secure smart contracts and detection of vulnerabilities in Blockchain Technology based solutions is required for sustainability.
- **Consultancy services can be offered** in architecting the Blockchain based applications as different ministries / departments are showing interest in adopting Blockchain Technology.
- **Capacity building in Blockchain Technology** need to be promoted by conducting short term courses or bootcamps.
- **Regulatory aspects & Polices also need to be focused** along with Infrastructure, Research, Technology Stack, Testing & Certification and Capacity Building.
- **Explore the potential of Blockchain Technology** in the proposed public digital platforms in various **sectors like Agriculture, Health, Energy etc., for more security.**

Global Efforts

- **European Blockchain Partnership (EBP)**, aims to use blockchain and distributed ledger technologies and develop a trusted, secure and resilient **European Blockchain Services Infrastructure (EBSI)** which will meet the highest standards in terms of privacy, cybersecurity, interoperability, regulation in applying policies etc.
- **Keyless Signature Infrastructure (KSI)** is a Blockchain technology designed in Estonia to prove the authenticity of the electronic data (records) mathematically.
- **United Arab Emirates has “Smart Dubai” initiative**, which aims to become the “first city fully powered by Blockchain by 2021,” and enhance everything from health care, education etc.

Efforts in India

- MeitY has supported a multi-institutional project titled **Distributed Centre of Excellence in Blockchain Technology** with Centre for Development of Advanced Computing (c-DAC), Institute for Development and Research in Banking Technology (IDRBT) and Veermata Jijabai Technological Institute (VJTI) as executing agencies.
- **Centre of Excellence (CoE) in Blockchain technology was established by NIC** in association with NICSI. Its objectives include accelerating adoption & deployment of Blockchain technology in Government.
- **NITI Aayog has recognized Blockchain as a promising Technology** enabling features such as decentralization, transparency and accountability.
- **Reserve Bank of India (RBI)** is exploring on applying Blockchain Technology in banking domain.

7.2. HUMANS IN SPACE POLICY

Why in news?

The Department of Space has put up for public consultation, the draft "Humans in Space Policy for India -- 2021" and guidelines and procedures for its implementation.

About the policy

- Applicability:** The guidelines are applicable to activities presently postulated under Indian human space program (IHSP) and for those activities which shall be defined and carried out in future in conjunction with IHSP.
- Aim:** It envisages undertaking demonstration of human spaceflight to LEO (low-earth orbit) in the short-term and lay the foundation for a sustained exploration in the long run that will enable presence in LEO and beyond.

Significance of the policy

- Leveraging the existing experience:** Demonstrating human space flight capability will leverage the expertise of ISRO, national research institutions, academia, industry and other organisations in various technological elements such as development of human rated launch vehicle, environmental control and life support system, crew escape system among others.
- Technological innovation, advancement, and scientific discovery** for enabling sustained presence of humans in low earth orbit and beyond e.g. Regenerative life support systems, development of Rendezvous and docking systems, Inflatable habitats, extravehicular activity suits etc.
- Industrial competitiveness:** Policy framework will unlock the space sector by facilitating the participation of non-traditional players/private sector in undertaking space activities through a handholding approach and a transparent regulatory framework.
- Employment generation:** A sustained focus as envisaged in the draft policy, will enable newer job creation in the domain and attract talent pool. This would also encourage new industries, create high technology jobs, enable socio-economic growth and further enhance India's stature and role in space.
 - According to the ISRO chief, the Gaganyaan mission would create 15,000 new employment opportunities, 13,000 of them in private industry.

Indian Human Spaceflight Programme(IHSP)

- IHSP was initiated in 2007 by the Indian Space Research Organisation (ISRO) to develop the technology needed to launch crewed orbital spacecraft into Low Earth orbit.
 - Under it, first unmanned mission is planned in December 2021. Second unmanned flight is planned in 2022-23, followed by human spaceflight demonstration (**Gaganyaan**).
- Gaganyaan has been designed to carry **three Indian astronauts to the low earth orbit** (an orbit of 300-400 km) for a period of five to seven days.
- It will take off on a **GSLV Mk III** which is capable of launching four-tonne satellites in the **Geosynchronous Transfer Orbit (GTO)**.
 - GSLV MkIII is configured as a three stage vehicle: Two solid strap-on motors; One liquid core stage and a high thrust cryogenic (mixture of liquid oxygen and liquid hydrogen) upper stage.
- Gaganyaan National Advisory Council** has been created with members from different institutions and industries to deliberates on various aspects of the mission.
- Gaganyaan includes** a Space Capsule Recovery Experiment (SRE-2007), Crew module Atmospheric Reentry Experiment (CARE-2014), GSLV Mk-III (2014), Reusable Launch Vehicle Technology Demonstrator (RLV-TD), Crew Escape System and Pad Abort Test.

MANNED MISSIONS

VOSTOK 1 MISSION
(USSR, 1961) Launched on April 12,1961, Vostok 1 spacecraft took Yuri Gagarin, a cosmonaut from Soviet Union, into space, making him the **world's first human in space**



MERCURY MISSION
(US, 1961) Alan Shepard was the **first American** in space when Freedom-7 spacecraft took off from Florida on May 5, 1961

SHENZHOU 5 PROGRAMME
(China, 2003) Shenzhou mission put **first Chinese citizen** Yang Liwei into orbit on October 15, 2003

INDIAN'S TRYST WITH SPACE
Rakesh Sharma (in pic), a former IAF pilot, who flew aboard Russian Soyuz T-11 on April 2, 1984. Sharma is the only **Indian citizen to travel in space**



- Enhance public involvement in human space programmes** through outreach activities ensuring continuity in information dissemination with respect to opportunities and benefits of human space programme.
- Inspiring youth:** Human space flight will provide that inspiration to the youth and also the public in general.
- Fulfilling ISROs long term objective:** As ISRO is also planning a space station of its own, the policy will lay the foundation for a sustained exploration in the long run. It will support ISRO to undertake capacity building measures — collaborations, infrastructure development, modernisation, technology development etc.

- **Fostering Partnerships and Cooperation:** International cooperation will be a tool for taking up projects of mutual interest to enhance knowledge in diversified domains, to add scientific value and accelerate the programme. Participation of national research institutions, academia and industry in international human programmes is also envisaged with Department of Space and ISRO acting as focal points.

Way ahead

To overcome the challenges of human spaceflight, a steady and continuous upward progression toward greater societal, scientific and technological development is required.

- **Leveraging private sector:** ISRO is leveraging the capability of private sector for various inputs required for developing the spacecraft. It should expand its collaboration with private sector for developing the infrastructures also.
- **Expanding International collaboration:** Other than Russia, US and France had also offered training support to astronauts for Gaganyaan. Collaborating with more countries would provide better choices.
- **Doing away with the bureaucratic hassles:** Cryogenic Engine development was delayed for decades due to bureaucratic hassles. Priority should be given to ensure that required research and development (R&D) is carried out seamlessly.
- **Capacity building:** ISRO is imparting basic knowledge on Space Technology, Space Science and Space Applications to the 10th std. students (through its programme like 'Yuvika'). Similar programmes should be carried out for imparting specialized knowledge in the field.

Challenges in Human Space exploration

- **Financial:** These missions require exorbitantly huge investment as they are highly technology intensive. For instance, initial cost of Gaganyaan was projected to be Rs. 12,000 crore.
- **Technological challenges:**
 - **Mastering of complex reentry and recovery technology:** Unlike other spacecrafts, manned spacecrafts need to comeback safely. While reentering the Earth's atmosphere, the spacecraft needs to withstand very high temperature and also ensure a precise speed and angle.
- **Private Sector Participation:** New Space entrepreneurship has emerged in India with many start-ups which seek value in exploring end-to-end services in the Business-to-Business and Business-to-Consumer segments using new space. However, these startups have yet to take off in the absence of regulatory clarity.
- **Space Debris:** Of known and tracked space junk, 70 percent is in low-Earth orbit, which puts the assets and missions in danger.
- **Training of astronauts:** Astronauts have to live in zero gravity, bear almost 10 times more radiation than what people are subjected to on Earth.
 - Awareness of celestial objects in the path of a rocket/satellites, and communication is also a major challenge.

Types of Space Orbits

- **Low Earth Orbit:** It is normally at an **altitude of less than 1000 km but could be as low as 160 km above Earth**. LEO satellites do not always have to follow a particular path around Earth in the same way – their plane can be tilted. Thus, there are more available routes for satellites in LEO. LEO is a very **commonly used orbit for satellite imaging**, as being near the surface allows it to take images of higher resolution.
 - It is also the orbit **used for the International Space Station (ISS)**. Satellites in this orbit travel at a speed of around 7.8 km per second; and takes approximately 90 minutes to circle Earth, (**ISS travels around Earth about 16 times a day**).
- **Geostationary orbits:** Satellites in geostationary orbit (GEO) circle Earth above the equator from west to east following Earth's rotation at an **altitude of 35,786 km** by travelling at exactly the same rate as Earth. This makes satellites in GEO appear to be 'stationary' over a fixed position. GEO is used by satellites that need to stay constantly above one particular place over Earth, such as **telecommunication satellites**.
- **Medium Earth orbit (MEO):** Medium Earth orbit comprises a wide range of orbits anywhere between LEO and GEO. It is similar to LEO in that it also does not need to take specific paths around Earth, and it is used by a variety of satellites with many different applications. It is very commonly used by navigation satellites, like the European Galileo system.
- **Polar orbit and Sun-synchronous orbit (SSO):** Satellites in polar orbits **usually travel past Earth from north to south** rather than from west to east, passing roughly over Earth's poles. Polar orbits are a type of low Earth orbit, as they are at **low altitudes between 200 to 1000 km**.
 - **Sun-synchronous orbit (SSO)** is a particular kind of polar orbit. Satellites in SSO, travelling over the polar regions, are synchronous with the Sun. This means that the satellite always visits the same spot at the same local time. Image series by these satellites are used to investigate how weather patterns emerge, to help predict weather or storms; monitoring emergencies like forest fires or flooding; etc.

- **Transfer orbits and geostationary transfer orbit (GTO):** Transfer orbits are a special kind of orbit used to get satellites from one orbit to another. Often, the satellites are instead placed on a transfer orbit: an orbit where, by using relatively little energy from built-in motors, the satellite or spacecraft can move from one orbit to another.
 - Geostationary Transfer Orbits are characterized by a low perigee (altitude of a few hundreds of kilometres) and a high apogee (altitude typically identical to that of geostationary satellites).
- **Lagrange points:** Lagrange points, or L-points, allow for orbits that are much, much farther away (over a million kilometres) and do not orbit Earth directly. These are specific points far out in space where the gravitational fields of Earth and the Sun combine in such a way that spacecraft that orbit them remain stable and can thus be ‘anchored’ relative to Earth.

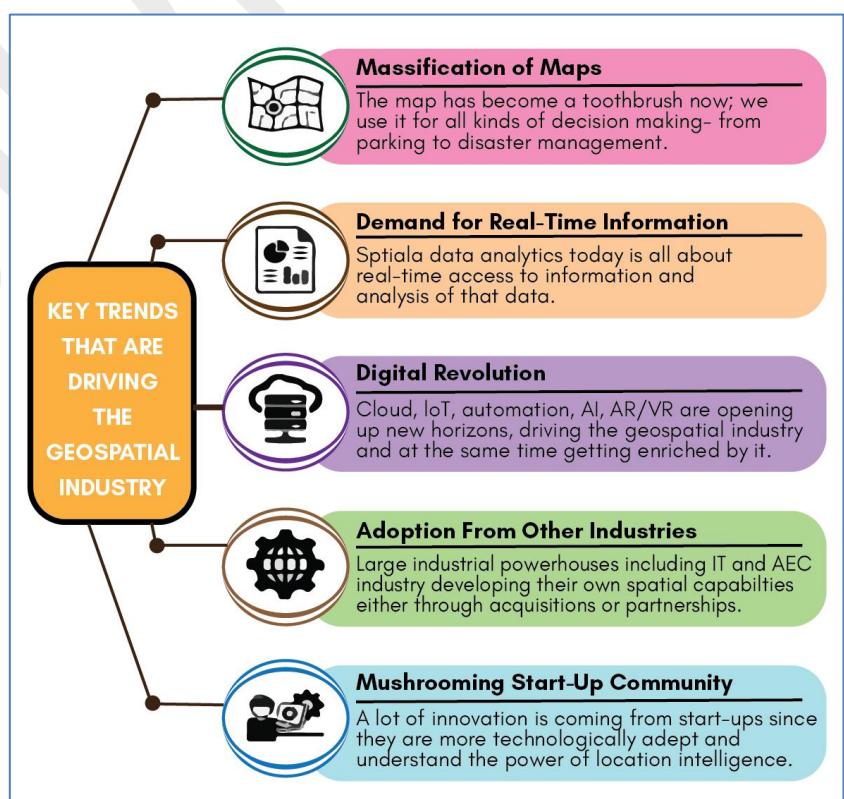
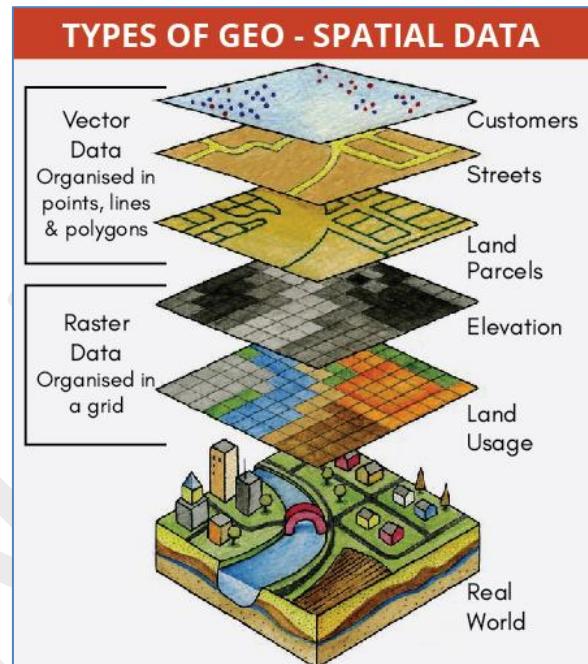
7.3. GEO SPATIAL DATA

Why in news?

Recently, the Ministry of Science and Technology released **new guidelines for the Geo-Spatial Sector** in India, liberalising the policies governing the acquisition and production of geo-spatial data.

About Geo-Spatial Data

- Geospatial data (also known as “**spatial data**”) is used to describe data about objects, events, or phenomena (man-made or natural) that have a location on the surface of the earth. At present, **80% of any data has a geo spatial component**.
 - Examples include the location of a road, an earthquake event, malnutrition among children, or dynamic like a moving vehicle or pedestrian, the spread of an infectious disease etc.
- The two main types of geospatial data are vector data and raster data.
 - **Vector Data:** It uses geometric shapes to show the location and shape of geographic features. Points, lines and polygons can represent things like cities, roads and waterways. Vector data is scalable, has small file sizes and ideal for depicting boundaries.
 - **Raster Data:** It represents data through a digital image such a scanned map or photograph. It also includes aerial and satellite imagery. Raster data uses a cell-based format called stair-stepping to record data as pixels or grids with an image. Spatial analysis depends heavily on raster datasets.
- **Geospatial technology** is used to collect, analyse and store geographic information. It uses software to map geographic locations while analysing the impact of human activity.
 - Various forms of geospatial technology includes Geographic Information System (GIS), Global Positioning System(GPS), remote sensing, geofencing etc.



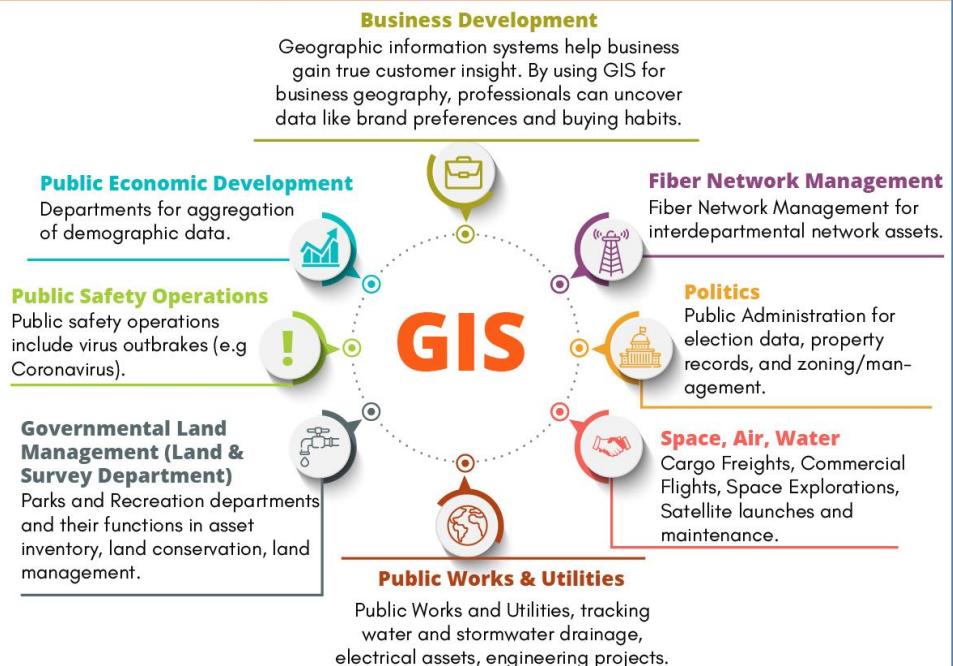
Major provisions of the guidelines

- Coverage:** The new guidelines will apply to geospatial data, maps, products, solutions and services offered by government agencies, autonomous bodies, academic and research institutions, private organizations, non-governmental organizations and individuals.
- Approval:** There shall be no requirement for prior approval, security clearance, license or any other restrictions on the collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of geospatial data and maps within the territory of India. Self-certification will be used to convey adherence to these guidelines.
- Processing:** Individuals, companies, organizations, and government agencies, shall be free to process the acquired geospatial data, build applications and develop solutions in relation to such data and use such data products, applications, solutions, etc. by way of selling, distributing, sharing, swapping, disseminating, publishing, deprecating and destructing.
- Negative List:** There will also be a negative list of sensitive attributes that would require regulation (for instance defence or security-related data) before anyone can acquire and/or use such attributable data.

Significance of liberalising and deregulating the sector

- Increasing participation and competitiveness:** The sector so far is dominated by the Indian government as well as government-run agencies such as the Survey of India.
 - There are strict restrictions on the collection, storage, use, sale, dissemination of geo-spatial data and mapping under the current regime.
 - By liberalising the system, the government will ensure more players in the field, competitiveness of Indian companies in the global market, and more accurate availability of data.
- Spur domestic innovation:** The existing regime imposed significant restrictions on the mapping industry, requiring Indian companies to seek licences and follow a cumbersome system of pre-approvals and permissions.
 - This has subjected start-ups in India to red tape, hindering Indian innovation in map technologies for decades. Liberalisation and deregulation of the mapping industry will promote domestic innovation and enable Indian companies to build scalable solutions.
- Increasing employment avenues:** The reforms will unlock tremendous opportunities for our country's start-ups, private sector, public sector and research institutions. This will also generate employment and accelerate economic growth.
- Investment opportunities and exports:** Currently, India relies heavily on foreign resources for mapping technologies and services. Increased investment in the sector will result in democratisation of existing data sets, indigenisation and also increase in export of data to foreign companies and countries, which in turn will boost the economy.
- Increased accessibility:** New guidelines will enable sharing, collaboration and easy access to data without any constraints. This would unlock tremendous opportunities for applications of GIS in sectors like agriculture, mining, water, urban utilities, public safety and infrastructure which already rely heavily on geospatial infrastructure.

Use of Geospatial Data in other industries



- For instance, maps and accurate geospatial data are useful in projects such as linkages of rivers, creation of industrial corridors, and deployment of smart power systems etc.
Also, it will play a significant role in the SVAMITWA scheme to map rural lands.
- **Resource Management:** Locally available and locally relevant maps and geospatial data would also help in improved planning and management of resources and better serve the specific needs of the Indian population.
- **Supporting emerging government initiatives:** Emerging vibrant initiatives such as Digital India, Smart Cities, eCommerce, autonomous drones, delivery, logistics and urban transport require a leap forward in mapping with greater depth, resolution and precision.

7.4. NASA'S MARS 2020 PERSEVERANCE ROVER MISSION

Why in news?

National Aeronautics and Space Administration's (NASA) Perseverance Rover successfully touched down on Mars.

About NASA's Mars 2020 Perseverance Rover mission

- Mars 2020 Perseverance Rover mission is **part of NASA's Mars Exploration Program**, a long-term effort of robotic exploration of the Red Planet-Mars.
 - It was launched in July 2020.
 - Mission seeks signs of ancient life and collect samples of rock and regolith (broken rock and soil) for possible return to Earth.
- Perseverance rover will begin its two-year-long **investigation in Jezero Crater to assess the geology and past climate** of the Red planet.
 - The crater had its own river delta and was filled with water nearly 3.5 billion years ago.
 - Perseverance is also ferrying a **helicopter named Ingenuity**, the first aircraft to attempt powered, controlled flight on another planet.
 - It also includes **most advanced astrobiology laboratory** sent to Mars till date.
- Perseverance is intended to be the **first part of a robotic sample return mission from Mars**.

Why is Mars being explored?

- It is believed that **four billion years ago environments on Venus, Earth and Mars were habitable**.
- Mars had a **thick atmosphere**, which enabled the **stability of water on the surface of Mars**, hence there is a real possibility that microscopic life evolved on Mars.
- Mars is only about **one-half the diameter of Earth**, but both planets have **roughly the same amount of dry land surface area**.
- Mars has **volcanoes (Olympus Mons)**, canyons (**Valles Marineris**), and **impact basins** much like the ones on the Earth.
- Mars is seen as **only planet that humans can visit or inhabit** in the long term.
 - Mars is comparatively **hospitable in terms of temperature**, with an approximate range between 20 degrees C at the Equator to minus 125 degrees C at the poles.
 - **Venus and Mercury have extreme temperatures** the average temperature is greater than 400 degree C, or hotter than a cooking oven.
 - ✓ However, Astronomers recently discovered **compelling evidence pointing to life floating in the clouds of Venus**.
 - **All planets in the outer solar system** are made of gas that **does not have silicates or rocks** and are **very cold**.

Other missions to Mars

Till now **6 countries US, Russia, China, the EU, India and UAE** are successful to reach the Martian orbit.

- **NASA**
 - Viking spacecraft
 - Odyssey spacecraft
 - Curiosity rover
 - Insight
 - Reconnaissance Orbiter
 - MAVEN
 - Phoenix
- **EU**
 - Mars Express
 - ExoMars Trace Gas Orbiter (along with Russia)
 - Beagle 2
- **India: Mangalyaan**
- **UAE: Hope Mission**
- **China: Tianwen-1**
- **Russia: Fobos-Grunt**

Comparison of Mars, Earth & Venus	
Parameter	Description
Atmosphere (composition)	<ul style="list-style-type: none"> • Atmosphere of Mars has abundance of CO₂ (95.32%). • Atmosphere of Earth has abundance of Nitrogen (77%). • Atmosphere of Venus has abundance of CO₂ (96%).
Atmospheric pressure	<ul style="list-style-type: none"> • Venus > Earth > Mars
Gravity	<ul style="list-style-type: none"> • Earth (9.81 m/s²)> Venus (8.87 m/s²) > Mars (3.711 m/s²)
Length of Day	<ul style="list-style-type: none"> • Venus > Mars > Earth • Note: Length of the day of Earth (24 hours) & Mars (24 hours, 37 minutes) is nearly same.
Length of Year	<ul style="list-style-type: none"> • Mars > Earth > Venus
Tilt of Axis	<ul style="list-style-type: none"> • Venus > Mars > Earth • Note: Tilt of axis of Earth (23.45 degrees) & Mars (25 degrees) is nearly same.
Satellites	<ul style="list-style-type: none"> • Mars: 2 (Phobos and Deimos) • Earth: 1 (Moon) • Venus: No moons

7.5. GENETICALLY MODIFIED (GM) FOOD CROPS

Why in News?

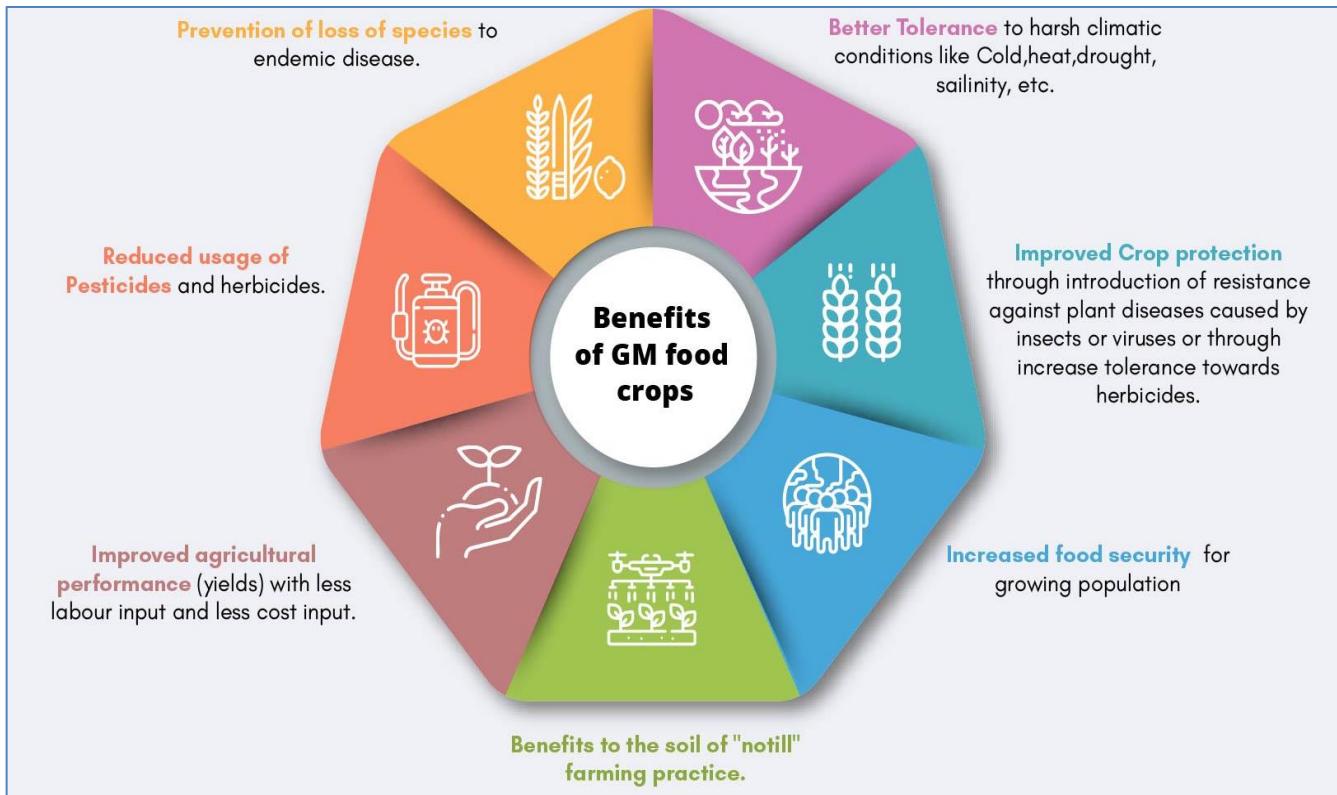
Food Safety and Standards Authority (FSSAI) said that from March 1, imported consignments of some of the major food crops will need to be accompanied with the “non-GM cum GM free certificate”.

More in News

- The food safety authority also stated that the **tolerance limit for “adventitious presence” of GMOs at 1% will be permissible** in these imported food crops consignments.
 - **Adventitious presence refers to unintentional or incidental presence** of trace amounts of GM material in non-GM crops.
 - **Many countries have set thresholds for labeling of “adventitious presence”** of approved GM material in non-GM crops, which **ranges from 0.9-5 per cent**.
- In 2018, Centre for Science and Environment (CSE) analysed 65 food products —30 manufactured in India and 35 imported from other countries — that are likely to contain genetically modified (GM) crops. Around 32% of the products were found with GM ingredients.

What are Genetically Modified (GM) Food crops?

- According to WHO, genetically modified organisms (GMOs) are organisms in which the genetic material (DNA) has been altered in a way that **does not occur naturally by mating and/or natural recombination**. Foods produced from or using GM organisms are referred to as GM foods.
 - For example, a GM crop can contain a gene that has been artificially inserted instead of the plant acquiring it through pollination.
- Globally **GM crops were commercially introduced in 1996**. Since then, their use has grown rapidly. Crops such as corn, cotton, and soybean have been engineered to resist insect pests and herbicides and are now planted widely in many parts of the world.
- Bt cotton is the only genetically modified (GM) crop that has been approved for commercial cultivation (in 2002)** by the Government of India.
 - **GM mustard Dhara Mustard Hybrid 11 (DMH 11)** developed by Delhi University is pending for commercial release as GEAC has advised to generate complete safety assessment data on environmental bio-safety, especially effects on beneficial insect species.
 - **Genetic Engineering Appraisal Committee (GEAC), has allowed biosafety research field trials of two new transgenic varieties of indigenously developed Bt Brinjal** – namely Janak and BSS-793, containing Bt Cry1Fa1 gene (Event 142) – **in eight states** during 2020-23 only after taking no-objection certificate (NOC) from states concerned and confirmation of availability of isolated stretch of land for this purpose.
 - These indigenous transgenic varieties of brinjal hybrids have been **developed by the National Institute for Plant Biotechnology, Indian Council of Agricultural Research (ICAR)**.



Issues with GM crops

- Concern for human health:** Gene transfer from GM foods to cells of the body or to bacteria in the gastrointestinal tract will be a matter of concern if the transferred genetic material adversely affects human health. This would be particularly relevant if antibiotic resistant genes, used as markers when creating GMOs, were to be transferred.
- Environmental risks:** There are concerns that the introduction of GM crops might lead to a reduction in biodiversity (the variety of plants and animals in the wild), particularly in areas where a crop originated, and a wide range of natural genetic variation is found.
 - The environmental safety aspects of GM crops vary considerably according to local conditions.
- Developing resistance:** There is potential for pests to evolve resistance to the toxins produced by GM crops.
- Monoculture:** There is desperation among farmers as introduction of Bt cotton has slowly led to the non-availability of traditional varieties of cotton leading to monoculture.
- Unintended Economic Consequences:** Private companies will claim ownership of the organisms they create and not share them at a reasonable cost with the public.

Regulation of GMO levels in imported consumables

- It was initially with Genetic Engineering Appraisal Committee (GEAC) under the Union environment ministry.
- Its role in this was diluted with the enactment of the **Food Safety and Standards Act, 2006** and **FSSAI** was asked to take over approvals of imported goods.

Regulatory Procedure involved in the development and approval of GM crops in India

- The rules governing the handling of genetically modified organisms (GMOs) and products thereof **were notified in 1989 under Environment Protection Act 1986 and guidelines issued later**.
- Two government agencies, the **Ministry of Environment and Forests (MoEF)** and the **Department of Biotechnology (DBT)**, Ministry of Science and Technology, are responsible for implementation of the regulations.
- There are **basically 6 authorities to handle different aspects of the regulation**.
 - These are Recombinant DNA Advisory Committee, Institutional Bio Safety Committee, Review Committee on Genetic Manipulation, Genetic Engineering Approval Committee (GEAC), State Biotechnology Coordination Committee and District level Committee.
- A series of guidelines for safety assessment procedures to be followed** at various stages of development of GMOs i.e. research, confined field trials, food safety assessment, and environmental risk assessment have been adopted under Rules, 1989 from time to time.

- GEAC shall have powers to revoke approvals in case of:
 - Any new information on harmful effects of GMOs.
 - GMOs cause such damage to the environment as could not be envisaged when approval was given.
 - Non-compliance of any conditions stipulated by GEAC.

Way forward

- **Focus on GM technology:** National policy on GM crops to define the exact areas where GM is required by the country and where the government will encourage public and private investment in GM technology.
- **Grievance redressal of all stakeholders:** All the grievances of farmers and the public must be resolved before allowing GM mustard by putting the safety documents online and addressing the associated concerns.
- **Legal measure:** There should be a liability clause, that is, if something goes wrong the liability should be fixed statutorily like in case of US law, liability is huge in case the GM tech effects the regular varieties of crops. It will ensure that case of non-accountability, in case of pink bollworm pest attack on BT cotton, does not repeat itself in case of other GM crops.
- **Stringent Regulation:** With advances in biotechnology, there is an urgent need for stringent regulation or scrutiny in the sector to ensure cultivation and sale of environmentally safe agro products.
 - The FSSAI must identify all GM products being sold in the market and prosecute companies and traders responsible.

Global regulation of GM food

- Codex Alimentarius Commission (Codex), a joint FAO/WHO intergovernmental body, is responsible for developing the standards, codes of practice, guidelines and recommendations that constitute the Codex Alimentarius, meaning the international food code.
- Codex principles do not have a binding effect on national legislation, but are referred to specifically in the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization (SPS Agreement), and WTO Members are encouraged to harmonize national standards with Codex standards.
- Cartagena Protocol on Biosafety, an environmental treaty legally binding for its Parties which took effect in 2003, regulates transboundary movements of Living Modified Organisms (LMOs). GM foods are within the scope of the Protocol only if they contain LMOs that are capable of transferring or replicating genetic material.

7.6. NATIONAL HYDROGEN ENERGY MISSION

Why in news?

Recently, the National Hydrogen Energy Mission was formally announced in the Union budget for 2020-21.

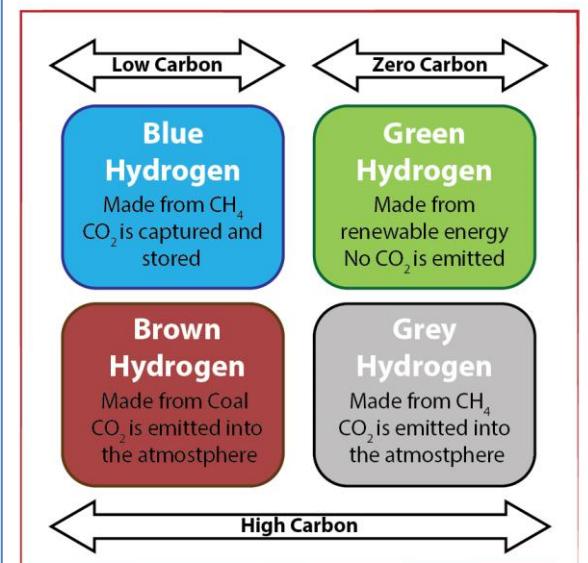
About the mission

- The mission emphasizes on generating hydrogen from green power resources (known as green hydrogen) and enabling its commercial use.
- Major activities envisaged under the mission include:
 - creating volumes and infrastructure;
 - demonstrations in niche applications (including for transport, industry);
 - goal-oriented Research & Development;
 - facilitative policy support; and
 - putting in place a robust framework for standards and regulations for hydrogen technologies.

Benefits of using Green Hydrogen Energy

- **Clean source of energy:** Hydrogen is about two to three times as efficient as burning petrol. It can decarbonize a range of sectors including iron and steel, chemicals, and transportation and help India in achieving its emission goals under the Paris Agreement.
- **Potential to transform transportation:** Transportation sector contributes a third of all greenhouse gas emissions. Hydrogen can be used for both fuel cell and internal combustion engines and is being seen as a direct replacement of fossil fuels. Hydrogen fuel cell cars have a near zero carbon footprint.

Types of Hydrogen

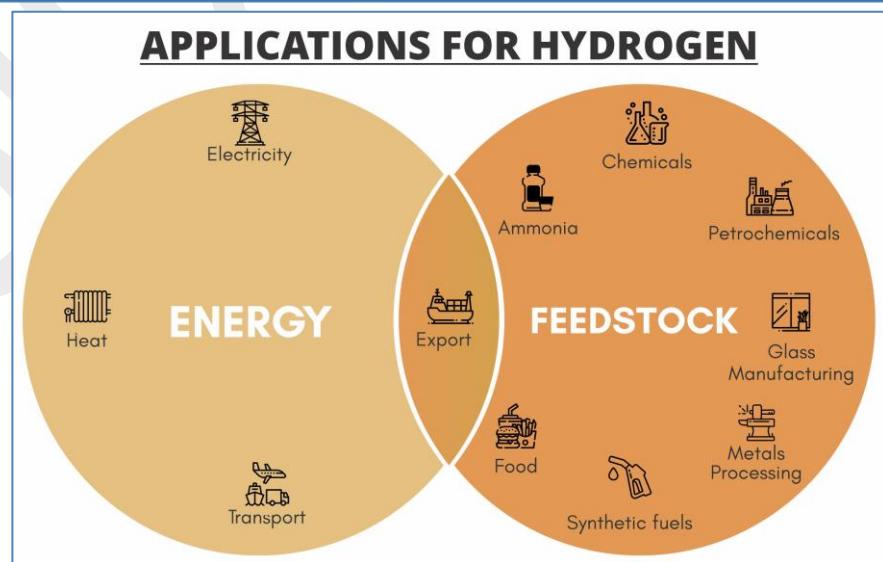
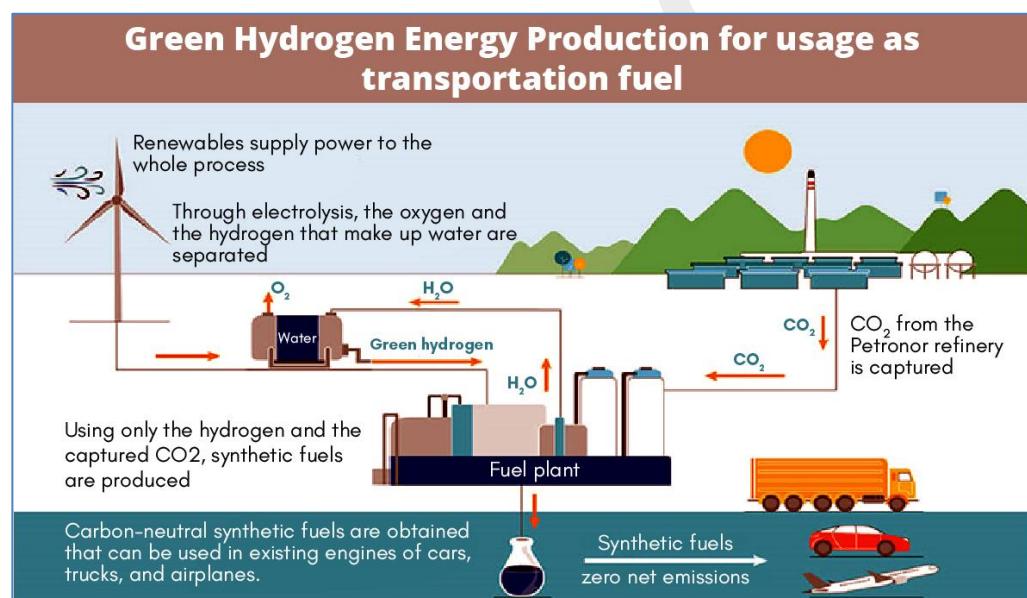
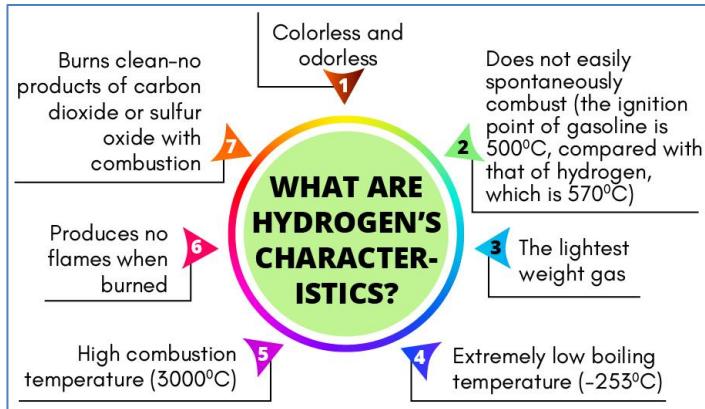


- Channelizing renewable energy:** Renewable energy that cannot be stored or used by the grid can be channeled to produce hydrogen. Hydrogen can act as an energy storage option, which would be essential to meet intermittencies (of renewable energy) in the future.
- Hydrogen FCEV (Fuel cell electric vehicles) are better in comparison to Battery electric vehicles:** Hydrogen FCEV enables a refueling time of just five minutes, compared to 30-45 minutes charging for a BEV (Battery electric vehicles). Also, consumers get about five times better energy storage per unit volume and weight, which frees up a lot of space for other things, while allowing the rider to go farther.

o This also has the potential to reduce India's demand for rare earth minerals that are used in the manufacturing of batteries for electric vehicles.

- Effective for sectors that cannot be electrified:** Hydrogen vehicles can be especially effective in long-haul trucking and other hard-to-electrify sectors such as shipping and long-haul air travel. Using heavy batteries in these applications would be counterproductive, especially for countries such as India, where the electricity grid is predominantly coal-fired.
- Investment opportunities:** Several leading organizations are exploring technologies which can convert bio and plastic waste into hydrogen, thereby providing a huge scope for investment in this technology which can combat India's twin problems of waste management and energy security.

- Reducing India's Current Account Deficit (CAD):** India imports 85% of its oil and 53% of its gas demand. India spent \$101.4 billion on crude imports in FY20. Green hydrogen has the potential to reduce import dependency on fossil fuels and thus CAD.
- Addressing uncertainty:** Hydrogen finds special resonance in India, given the uncertainty in global energy markets. A case in point being the spike in crude oil prices impacting India, with fuel retailing at record highs. With India's attempt to secure climate leadership, it can leverage its growing clean energy capacity for a green hydrogen push.



Challenges

- **Process of extracting green hydrogen is energy-intensive:** Hydrogen is not found freely as it exists only combined with other elements and has to be extracted from naturally occurring compounds like water.
- **High Cost-** Hydrogen is an energy carrier, not a source of energy. Hydrogen fuel must be transformed into electricity by a fuel cell stack before it can be used to power a car or truck. The technology used in production and use of hydrogen like carbon capture and storage (CCS) and hydrogen fuel cell **technology are at nascent stage** and are expensive which in turn increases the cost of production of hydrogen. Furthermore, **the maintenance costs for fuel cells post-completion** of a plant can be costly.
- **High R&D requirement:** The commercial usage of hydrogen as a fuel and in industries requires mammoth investment in R&D of such technology and infrastructure for production, storage, transportation and demand creation for hydrogen.
- **Multiple regulatory authorities:** Ministry of Road Transport and Highways regulates vehicle's fuel carrier specification, MNRE regulates renewable energy sources, Petroleum and Natural Gas Regulatory Board regulates pipelines and Petroleum and Explosives Safety Organisation regulates explosive substances, storage and fuel station's specifications. The commercial use will require coordination among the various ministries and regulators.
- **Issues in transporting hydrogen:** Hydrogen in gaseous form is highly inflammable. To ship liquid hydrogen, it needs to be chilled to -253°C. Compared to other gases (or fuels), hydrogen lacks smell, which makes any leak detection almost impossible thus increasing the potential dangers.

Other pilot initiatives

- Delhi became the first Indian city to operate buses running on **hydrogen spiked compressed natural gas (H-CNG)**; 18 per cent hydrogen in CNG is produced directly from natural gas, without resorting to conventional blending.
- **NTPC Ltd is operating a pilot to run 10 hydrogen fuel cell-based electric buses** and fuel cell electric cars in Leh and Delhi, and is considering setting up a **green hydrogen production facility in Andhra Pradesh**.
- **IOC** is also planning to set up a **dedicated unit to produce hydrogen** to run buses at its R&D centre in Faridabad.
- As a supporting regulatory framework, the **Ministry of Road Transport and Highways** issued a notification **proposing amendments to the Central Motor Vehicles Rules**, 1989, to include safety evaluation standards for hydrogen fuel cell-based vehicles.

Way forward

- India has a huge edge in green hydrogen production owing to its favorable geographic conditions and presence of abundant natural elements.
- With appropriate capacity addition to renewable power generation, storage and transmission, producing green hydrogen in India can become cost effective which will not only guarantee energy security, but also ensure gradually self-sufficiency.



SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Science & Technology at our open test online platform for testing your understanding and recalling of the concepts.



8. CULTURE

8.1. ANCIENT BUDDHIST MONASTERY

Why in news?

900 years old Ancient Buddhist monastery was recently unearthed by Archaeological Survey of India (ASI) in Sitagarhi Hills, Hazaribagh district of Jharkhand.

More about Findings

- It is a 10th century structure resembling a small 'Buddha Vihar' (Buddhist shrine-cum-monastery).
- Discoveries around the site
 - Four statues of deity Tara in 'Varad Mudra' (gesture of hand showing dispensing of boons)
 - Six statues of the Buddha in 'Bhumisparsha Mudra' (gesture of hand showing five fingers of right hand towards the earth symbolising the Buddha's enlightenment).
 - Discovery of the statue of deity Taara shows that the **region was an important centre of Vajrayana sect of Buddhism (Tantric Buddhism)**.
 - ✓ Nagri script (a previous version of Devnagri script) on a Tara statue was found.
 - Sculpture similar to Shaivite deity Maheswari (with a coiled crown and chakra) indicates **cultural assimilation in the area**.
- Monastery is **on the old route to Varanasi, from Sarnath** (where the Buddha gave his **first sermon**).
- Some findings at excavation site **represents about Pala period**, but **need to be confirmed** with scientific dating of structures.

About Buddhist Monasteries

- Monasteries were **permanent shelters built for supporters, monks and nuns of Buddhism**.

VARIOUS MUDRAS RELATED TO BUDDHA



Bhumisparsha Mudra

- Buddha sitting with right hand touching the earth, palm facing inward and left hand in his lap
- Symbolises Maravijaya
- Earth as witness to the truth of his words
- Related only to Buddha



Varada Mudra

- The left or right arm is extended the way down, with the palm of the open hand facing outwards.
- It indicates charity, compassion or granting wishes.
- This Mudra signifies five perfections: Generosity, Morality, Patience, Effort and Meditative Concentration, through the five extended fingers.
- Used by God, Goddesses and Kings



Anjali Mudra

- Both hands close to the chest, palms and fingers joined against each other vertically.
- Symbol of respect, greetings, and salutation
- This is for Bodhisattvas (devotees), who aim and prepare to attain perfect knowledge



Vitarka Mudra

- The tips of the thumb and index finger touch each other, forming a circle
 - The circle maintains the constant flow of energy, as there is no beginning or end, only perfection.
- It indicates teaching and discussion or intellectual debate
- Used by ascetics, monks in discourse



Abhaya Mudra

- Palm of the right hand faces outwards and the fingers are upright and joined
- It indicates fearlessness
- This gesture was shown by Buddha immediately after attaining enlightenment.
- Gods, Goddess and Buddha in this mudra



Kshepana Mudra

- Two hands together in gesture of pouring out and letting go
- Used as a means of draining negative energy and attracting positive energy



Uttarabodhi Mudra

- Two hands placed together with index finger together and other fingers intertwined.
- It means supreme enlightenment.
- This Mudra is known for charging one with energy and symbolises perfection.



Dhyana Mudra

- Both hands placed in lap with tips of thumb and fingers touch each other
- Indicates Meditation and is also called 'Samadhi' or 'Yoga'
- Mudra was used by Buddha during the final meditation under the bodhi tree.
- Related to Buddha, Monks and ascetics



Karana Mudra

- Hand is stretched out, either horizontally or vertically, with the palm forward.
- The thumb presses the folded two middle fingers but the index and little fingers are raised straight upwards.
- It indicates warding off evil, expelling demons and negative energy.



Dharmachakra Mudra

- This Mudra involves both hands, right hand is held at chest level with the palm facing outwards. A mystic circle is formed by joining the tips of the index finger and the thumb.
- The left hand is turned inward and the index finger and thumb of this hand join to touch the right hand's circle.
- It means 'Turning the Wheel of the Dharma or Law'
- This gesture used only by Buddha at first sermon in the Deer Park of Sarnath.



Vajra Mudra

- In this mudra, the erect forefinger of the left hand is held in the fist of the right hand.
- This mudra signifies the importance of knowledge or supreme wisdom.

- Monks and nuns **lived and meditated in these shelters**.
- In **northern India**, most of the **monasteries were of bricks**, while in **central India** they were **caves**. E.g. **Nalanda in Bihar and Bhimbetka in Madhya Pradesh**.
- Later, monasteries evolved in **complex structure consisting Vihara, Chaitya and Stupa**.
 - **Viharas were permanent shelters for monks**. Very often, the land on which the vihara was built was donated by a rich merchant or a landowner, or the king.
 - **Chaitya is an assembly hall that contained a stupa**.
 - ✓ Stupa is a **burial mound for the Buddha** and original stupas contained the Buddha's ashes.
 - ✓ **Later, stupas were emptied of these relics** and simply became symbols of the Buddha and the Buddhist ideology.
 - ✓ The stupa consists of a **cylindrical drum and a circular anda with a harmika and chhatra** on the top, also includes the **circumambulatory path and gateways**.
 - ✓ On the **railings and torans of the stupa events from the life of the Buddha**, the Jataka stories were depicted.
 - ✓ **Inscriptions on railings and pillars** of stupas record donations made for building and decorating them by kings, guilds etc.
 - Among large monasteries, **Nalanda was the first and the most extensive** monastery in ancient India built by **Kumargupta I**.
 - These stupa-monastery complexes were **located close to urban centres and along major trade and pilgrimage routes**
- Generally, these **monasteries were erected at places which were neither very near nor very far from any village or town**, away from noise and easily accessible to nearby towns
- In India, the period c. **200 BCE–300 CE** saw an **expansion in the number and scale of Buddhist monastic complexes** (known variously as sangharama, vihara, or lena).
 - **Central India Monasteries**: Bharhut, Sanchi, Satdhara, Sonari, Bhojpur etc all situated in Madhya Pradesh.
 - **North West monasteries**: Takht-i-Bahi in Pakistan and Guldara in Afghanistan are two important sites.
 - **Eastern Deccan monasteries**: Amaravati (Andhra Pradesh), Jaggayyapeta, and Nagarjunakonda.
 - ✓ **Amaravati was located next to Dhanyakataka**, capital of the later Satavahanas. The discovery of what may be an Ashokan inscription at this place suggests that the beginning of the monastic establishment may be dated to the Maurya period.
- Certain Buddhist monasteries achieved fame as educational centres. **Nalanda, Bihar** was one of the most renowned and celebrated of these. The literary references to Nalanda date to the 6th/5th century BCE and suggest the possibility that Ashoka may have established a vihara at this place.



About Pala dynasty and Buddhism

- **Pala dynasty ruled Bihar and Bengal** from the 8th to the 12th century.
 - Its founder was **Gopala** a local chieftain and other important rulers were **Dharmapala, Devapala, Mahendrapala and Mahipala I**.
- The Pala rulers were **great supporters and admirers of Buddhism**.
 - Under the Palas the **Vajrayana form** of Buddhism became a major intellectual and religious force.
 - They **made monasteries (viharas) and temples** in eastern India to promote Buddhism.
 - **Dharmapala**, the second Pala ruler, **founded the Vikramashila University** in Bihar and **revived Nalanda University**.
 - ✓ **Devapala granted five villages** for the maintenance of Nalanda monastery.
 - Other important Buddhist centers of learning were **Odantapura, Vikramashila, and Somapura Mahavihara**.

- ✓ Students and pilgrims throughout South East Asia came to these monasteries for education and religious purposes and returned with specimens of Pala Buddhist art.
 - Pala's sent missionaries and Buddhism was established in Tibet.
 - At Mahabodhi Temple at Bodhgaya, many of the sculptures in the temple are dated to the 8th century Pala Period.
 - A miniature terracotta image of a fasting Buddha, a six-foot-tall votive stupa and a black stone statue of Buddha in abhay mudra (fearless mode) from the Pala period reflect the ubiquity of Buddhism then.
 - It is said that last great phase of Buddhist art in India is attributed to the Pala period, with the collapse of the Pala dynasty in the 12th century, Indian Buddhism suffered setback and the Buddhist presence in India became negligible.
- Vajrayana Buddhism (Tantric Buddhism)**
- Vajrayana school developed as a result of royal courts sponsoring both Buddhism and Shaivism and said to be influenced by Hinduism.
 - The main deity is Tara (a lady) and based on Mahayana Buddhist philosophy.
 - Also, said that it borrows tenets from both Mahayana and Theravada Buddhism while adding an innovation of its own.
 - It involved combining Brahmanical (Veda based) rituals with Buddhist philosophies.
 - This school believes in Tantra's, Mantras and Yantras superiority to achieve Buddhahood without the difficulties.

8.2. AHOM KINGDOM

Why in news?

Prime Minister made visit to **Sivasagar's Jerenga Pothar in Assam**, which has historical significance related to Ahom Kingdom.

More on news

- Sivasagar (formerly known as Rangpur) was the seat of the powerful Ahom dynasty, who ruled Assam for six centuries (1228-1826).
- Jerenga Pothar in Sivasagar town is popularly connected to the valour of 17th century Ahom princess Joymoti (wife of the Ahom prince Gadapani).

About Ahom Kingdom

- Ahoms migrated to the Brahmaputra valley from present-day Myanmar.
- Ahom kingdom was founded by first Ahom king Chao Lung Sui-Kha-Pah in 13th-century.
 - Before his arrival the region was thickly forested and inhabited by local kings Sootias, Boharis, Kacharis and Bhuiyan's (landlord).
 - Sui-Kha-Pah was successful in assimilation of different communities and tribes.
 - He is widely referred to as the architect of "Bor Asom" or "greater Assam".
- During the 16th century, they annexed the kingdoms of the Chhutiyas (1523) and of Koch-Hajo (1581) and subjugated many other tribes.
- Ahom Dynasty governed the region for six centuries from 1228 CE till it was annexed by the British in 1826 CE, and coexisted with Delhi Sultanate (1206-1526 CE) and Mughals (1526-1857 CE).
- Kingdom laid the foundation for present day Assamese culture, tradition, art and architecture.
- Ahoms religion
 - The founders of the Ahom kingdom had their own language and followed their own religion.
 - ✓ Later during Rudra Simha's reign that the Ahoms officially adopted the Assamese religion and language, also with blend of traditional folk and Mughal influence.
 - ✓ Later Ahom rulers embraced Hinduism due to influence of Brahminism and became devout patrons of the Neo-Vaishnavite movement led by Shankardeva. However, did not completely give up traditional beliefs.

Ahom's Society

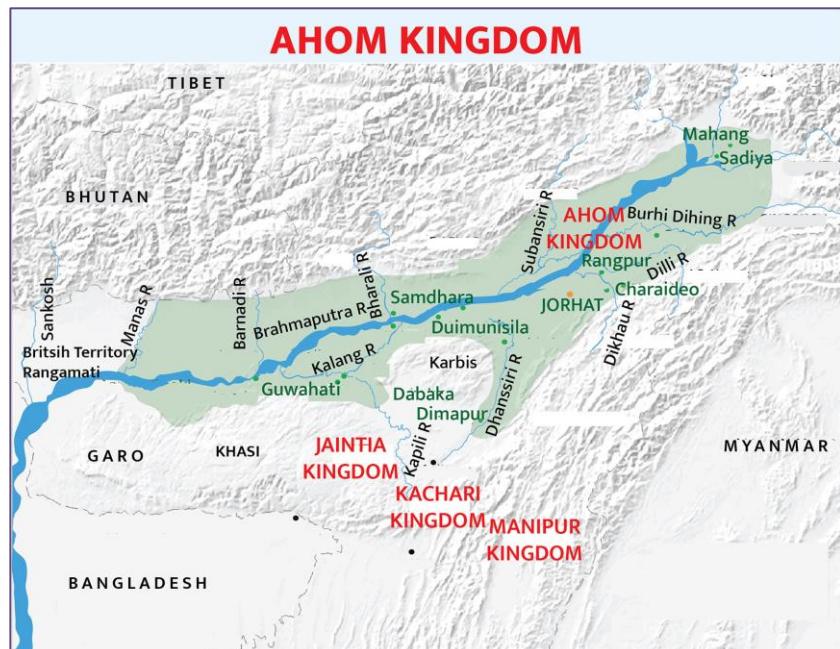
- Ahom society was divided into clans or khels who controlled several villages.
- Ahom state depended upon forced labour and those who forced to work for the state were called paik.
- Ahom kingdom had very few castes of artisans, so artisans in the Ahom areas came from the adjoining kingdoms. Ahom society used to give land grants to poets and scholars.
- The peasant was given land by his village community and even the king could not take it away without the community's consent.
- Almost all adult males served in the army during war, while at other times, they were engaged in building dams, irrigation systems and other public works.

- Ancestor worship was and still remains a very important part of the Ahom culture, which is reflected in the elaborate maidams (burial tombs) that the Ahoms built in the **sacred city of Charaideo**.

Ahom's Art and architecture

- Ahom style of architecture presents a unique blend of distinct architectural styles ranging from domes and arches inspired by **Mughal architecture** to great shikhara and mandapas of **Hindu architecture**.

- ✓ During the **early years**, Ahom architects **primarily used wood and bamboo** to construct their palaces and other important structures.
- ✓ Later started to use of **bricks and an organic cement made out of eggs, fish, molasses, pulses and lime**. **Gargaon Palace** was the first structure to be constructed using these materials
- ✓ Rudra Simha, Ahom king invited many skilled architects, painters, dancers and musicians from Bengal and other parts of India to his new capital of Rangpur, commissioning them to build a majestic city.
- ✓ Magnificent temples like **Shivdhol, Devidol and Vishnudol** on the banks of the **Sibsagar tank**, **Rang Ghar sports complex** are unique to the Ahoms.
- ✓ Another defining feature of Ahom architecture is **the excavation of large tanks**, most notably **Joysagar**, which is the **largest tank** to be excavated under the patronage of Rudra Simha in 1698.
- Ahom encouraged theatre and important **works of Sanskrit** were translated into the local language.
 - ✓ Historical works, known as **buranjis**, were also written first in the Ahom language and then in Assame.



8.3. GURUDWARA REFORM MOVEMENT

Why in news?

Recently, the **centenary of the Sri Nankana Sahib massacre** (popularly known as Saka Nankana Sahib) was marked. This agitation was a big leap in the Gurdwara Reform movement.

About Gurdwara Reform movement

- Gurdwara Reform movement/ Akali Movement was **Sikhs' long-drawn campaign between 1920 to 1925 for the liberation of their gurdwaras** or holy shrines from the preists (Mahants) who had asserted property rights over Gurdwaras.
 - It was an **offshoot of the Singh Sabha Movement** (1873).
- The properties of places of worship of Sikhs were **transferred and given over to the Udasi Mahants by Britishers**.
 - Mahants considered the Gurdwara as their fiefdom and **encouraged practices** such as idol worship, discrimination with Dalits, drinking etc. in **violation of the tenets of Sikhism**.
 - Sikhs claimed that **Gurdwaras were public property**, hence, the public could remove **mahanats** in case of their inability to conform to the wishes of people.
- People who agitated against such persons, were suppressed by the Government and the **result was Gurdwara Reform movement/ Akali Movement** in which Sikhs had to face imprisonment, suffer atrocity and death.
- **Events related to Gurdwara Reform Movement:**
 - **Formation of Shiromani Gurudwara Parbandhak Committee (SGPC):**
 - ✓ SGPC came to existence in November 1920, a month after Sikhs removed partial restrictions on Dalit rights inside Golden Temple in Amritsar.
 - ✓ It started **gurdwara reform movement** which was aimed at taking possession of historical Sikh Gurdwaras

- ✓ Shiromani Akali Dal (SAD) was also founded in December, 1920.
- Nankana Sahib Massacre:
 - ✓ In February 1921, a band of more than 100 Sikhs were brutally killed by Narayan Das the mahant of Nankana Sahib (the birthplace of Guru Nanak) and his army.
 - ✓ The news of this Holocaust shocked the country. To hail the non-violent resistance by Sikhs the Indian National Congress passed a resolution in Gaya session (December 1921).
 - ✓ SGPC formed its own probe team and asked Mahatma Gandhi to be part of it. SGPC passed a resolution and decided to support the non-cooperation movement being run by Mahatma Gandhi.
- Other campaigns like Guru Ka Bagh Morcha (1922), Jaito Morcha (1923) etc were also held which ultimately led to enactment of Gurdwara Act, 1925.
- Gurdwara Act, 1925: The British government finally passed the Gurdwaras Act in 1925, making SGPC a democratic body for better administration of Certain Sikh Gurdwaras.
 - ✓ This act enables SGPC to control all the Historical Gurdwaras as well as Gurdwaras under Section 87 of this act.

Sikh Gurdwara Parbandhak Committee (SGPC)

- It is an organization which manage the historical Sikh Gurdwaras of Punjab, Haryana, Himachal Pradesh and Chandigarh.
- Present composition: 140 elected members, 5 head ministers and 15 co-opted members. 20 seats are reserved for scheduled caste Sikhs.
- Tenure of the committee is 5 years.
- The three Sikh takhts in Punjab are directly controlled by SGPC.



SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Culture at our open test online platform for testing your understanding and recalling of the concepts.

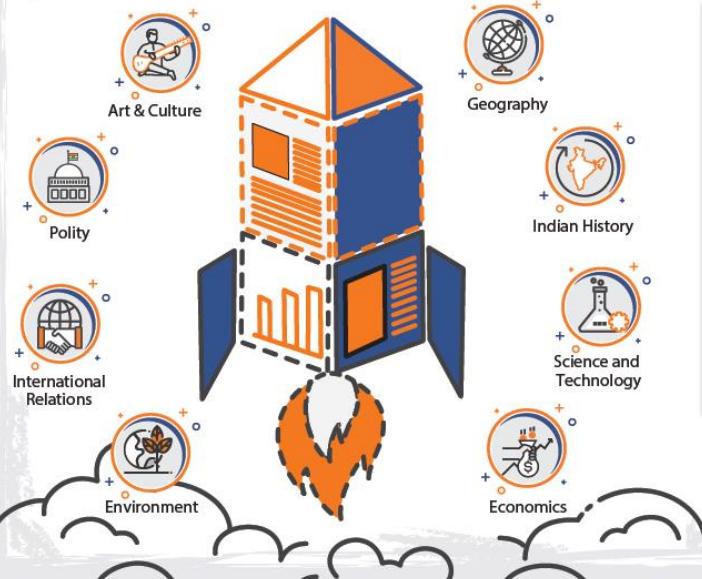


FAST TRACK COURSE 2021 GENERAL STUDIES PRELIMS



PURPOSE OF THIS COURSE

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COURSE BEGINS	TOTAL NO OF CLASSES
Admission Open	60

9. ETHICS

9.1. ROLE OF YOUTH IN NATION BUILDING

Introduction

India is a nation with large reserves of youth. This is because the median age of the country's population is 29 years. The demographic dividend has a great potential to contribute towards nation building, but realizing this potential requires overcoming prevalent challenges and creating an ecosystem to channelize this potential.

What is Nation Building?

In the broadest sense, nation building encompasses everything from development, well-being to security of all the citizens of the nation. It can be sub-divided into different but interdependent pillars:

- **Economic Prosperity:** Economic Growth serves as the marker for standard of living and availability of critical goods and services which enhances development.
- **Political stability:** Political stability at national, regional as well as local level is the barometer of robustness of the democratic processes of the nation. Democratic processes in turn strengthen the institutional capital and governmental stability in a nation.
- **Human Development:** Human development encompasses education as well the collective health of people among others. Development of citizens of a nation directly correlates to development of the nation itself.
- **Social cohesion:** Alongside the development of citizens as individual entities, building of a nation requires these entities to act in cohort in order to complement their energies. In that sense, social cohesion in a society plays a key role aligning individual energies.
- **Environmental Sustainability:** The citizens and the nation that they build does not operate in a vacuum but in the context of physical environment they inhabit. The sustainability of that environment has a direct bearing on all of nation's entities.

Why role of youth is central to Nation Building?

Most of the times, the youth of a nation is not the wealthiest or most powerful section of the society in the traditional sense. But they play a special role in development due to following reasons-

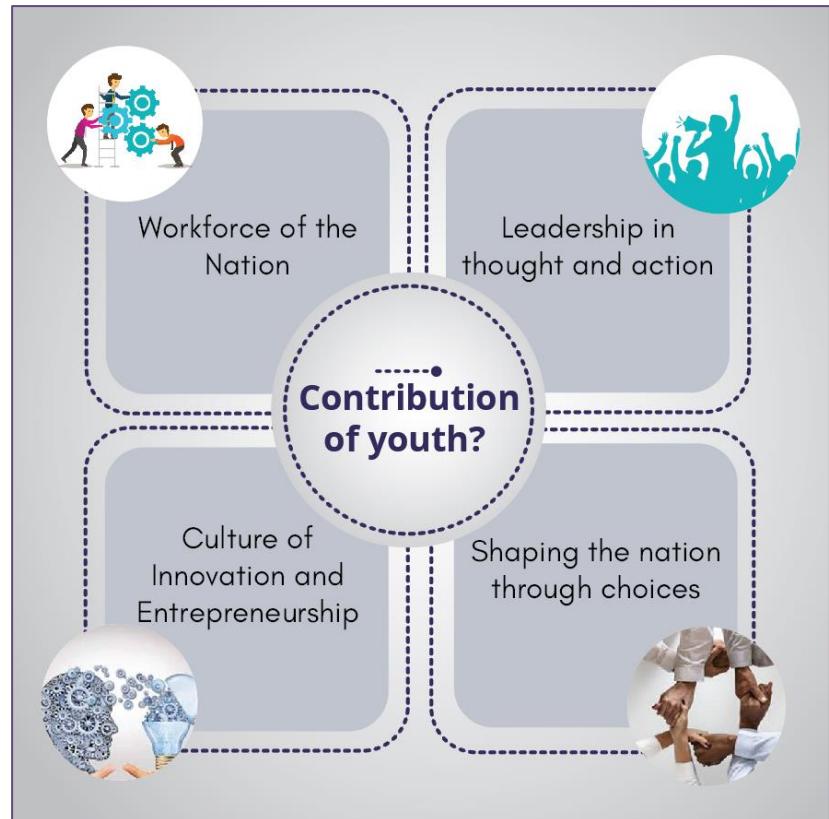
- **Energy and vitality that they bring:** The vitality of any activity or any organization at its core is majorly driven by youthful energy. From construction workers to IT professionals to entrepreneurs, all vital areas of growth and development are driven by young working population.
- **Torchbearer of change and reforms:** Youth bring with them new ideas, goals and processes to achieve them, thus acting as the driving force for reforms. For example, the emergence of gig economy which is driven by young people is bringing about positive disruption in work culture.
- **Present as well as future of the nation:** The capabilities that the young population has, the work that they do now will shape the economy and society of the present as the well as the future. For instance, the education level of today's youth will be directly correlated with Research and Development potential of tomorrow.
- **Provide direction to the nation:** The youth have dreams, hopes and passions. These emotions and ambitions collectively provide a direction to the nation. This direction overtime translates to a vision which acts as the driving force of the nation. For example, the dream for a corruption free society is driving actions like e-governance, Right to Information etc. which will ultimately culminate a more honest and vigilant society.

How can youth contribute to Nation Building?

Youth with them brings to the table all the ingredients for Nation Building, these ingredients can be shaped through following vocations-

- **Being the workforce of the nation:** Every individual who works, directly contributes to generation of goods and services which directly or indirectly builds the nation bit by bit. For instance, an agricultural labourer with his/her physical effort or an investment banker with his/her financial prowess, contribute to nation building.
 - Also, the youth as part of the workforce support both elderly and children, thus maintaining the social and economic stability in society.
- **Creating culture of innovation and entrepreneurship:** Young generation can create a vibrant entrepreneurial ecosystem which is committed to find solutions to the problems of the nation. For example, plethora of start-ups have sprung up to solve the issues related to agricultural marketing in India.

- Providing leadership in thought and action:** Youth can provide the leadership role in bureaucracy, industry, social service etc., but most importantly in politics. This is because participating in politics directly affects policies and debates over critical issues affecting the nation such as budgetary allocations, environmental regulations etc.
- Shaping the nation through their choices:** Youth act as decision makers in the society. By their choices they dictate not only the extent but also the direction of the nation's development. Their consumption patterns, lifestyle etc. shape the socio-economic spaces around them.
 - For instance, increasing awareness among youth about environmental degradation has encouraged development of ideas like circular economy.



What are the challenges that they face?

- Lacking pre-requisites of health and education:** The problem of poverty, malnutrition, poor enrolment in higher education have handicapped the potential of youth. These issues culminate to poor human resource development and consequently limits their contribution to nation building. For example, poor nutrition directly affects the productivity of labour which in turn threatens their financial security.
- Scarce skills and even more scarce opportunities:** Estimates suggest that close to 2.5% of the population is skilled, this creates a scenario of large scale unemployment and generation of poor quality of jobs. This results in creation of problems like disguised unemployment and degree creep.
 - Degree creep can be defined as a scenario where for an identical job, the qualification has risen merely due to competition. For example, if qualification for a job of welder increased from a diploma in engineering to masters in engineering, this would be called degree creep.
- Have to bear disproportionate risk:** Young people who aspire to become politicians, entrepreneurs, civil servants etc. have to bear a disproportionate risks due to large competition. The woes of these youth are compounded by the risk-averse culture prevailing in the society which penalizes the risk-taking behaviour.
 - For example, an individual who wishes to enter politics has to bear the hard work and risk of contesting in elections alongside securing his livelihood from an alternate source.
- Absence of a nurturing ecosystem:** Youth, in their endeavour of Nation Building need support in the form of an ecosystem which trains them and provides handholding. For example, there is no concrete training program or mechanism for youth wish to join the political system.

What can be done to overcome these challenges and encourage the youth to in Nation Building?

To ensure active participation of youth in national development, it needs to be collectively supported by the government, the private sector, the civil society and their parents. Following can be done to for this:

- Moving towards a healthier society:** The idea is to move from curative health to preventive health by focussing on wellness. Shifting the focus to wellness will directly affect the nutrition levels, disease burden and will have a compounded effect when healthier youth translates to better productivity.
- Strengthening the education systems:** This can be done by effective implementation of National Education Policy 2020 alongside augmenting the infrastructural, financial and human resources in the education sector.
- Providing education-skill development-industry-education linkage:** The transition from education skill development, skill development to industry or vice-versa needs to be seamless. This is necessary to ensure

skill levels of workforce matches the industrial demand, industry is enabled to undertake the task of skill development and also education-industry remain in continuous communication.

- **Generating more opportunities:** Youth need an avenue to showcase their skills and translate their potential. These opportunities can be created by encouraging entrepreneurship, providing conducive business climate among others.
- **Creating a supportive and vibrant culture:** The impressionable nature of youth makes it vital to provide them a supportive culture starting from their parents, teachers, schooling systems and up till the point they interact with society, market and government.
 - The ethos of this culture primarily rest on encouraging youth to contribute to the nation, providing them financial, institutional and emotional support and understanding that in building of the youth lies the essence of Nation Building.

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10. GOVERNMENT SCHEMES IN NEWS

10.1. KISAN CREDIT CARD SCHEME

Why in news?

The Central government is seeking to fix targets for allocation of Kisan credit cards to livestock and dairy farmers as banks are hesitant to do so.

Background

- The KCC Scheme was introduced in the year 1998 with the objectives of providing **adequate and timely credit to the farmers** for their agricultural operation.
- In 2018, it was extended to fisheries, livestock and dairy farmers

Objectives	Eligibility	Key Features
<ul style="list-style-type: none">• To provide adequate and timely credit for the comprehensive credit requirements of farmers under single window for their cultivation	<ul style="list-style-type: none">• All farmers-individuals/Joint borrowers who are owner cultivators.• Tenant farmers, Oral lessees and Share Croppers etc.• SHGs or Joint Liability Groups of farmers including tenant farmers, share croppers etc.,• Criteria For inland fisheries: Fishers, Fish Farmers (individual & groups/ partners/ share croppers/ tenant farmers), Self Help Groups, Joint Liability Groups and women groups.<ul style="list-style-type: none">○ The beneficiaries must own or lease any of the fisheries related activities such as pond, tank, open water bodies, raceway, hatchery, rearing unit, possess necessary license for fish farming and fishing related activities, and any other State specific fisheries and allied activities.• Criteria for Marine fisheries: Beneficiaries listed above, who own or lease registered fishing vessel/boat, possess necessary fishing license/permission for fishing in estuary and sea, fish farming/mariculture activities in estuaries and open sea and any other State specific fisheries and allied activities.• Dairy - Farmers and Dairy farmers having owned /rented/leased sheds.• Poultry and small ruminant - Farmers, poultry farmers of sheep/goats/pigs/poultry/ birds /rabbit and having owned/rented/leased sheds.	<ul style="list-style-type: none">• The loan disbursed under KCC is broad based and may be used as working capital and for short term credit requirements for cultivation of crops, post-harvest expenses, produce marketing loan, consumption requirement of farmer household etc.• The loans disbursed under KCC Scheme for notified crops are covered under Crop Insurance Scheme.• It provides facility of ATM enabled RuPay Card, one-time documentation, and any number of withdrawals within the limit.• Scheme covers risk of KCC holders against death or permanent disability resulting from accidents caused by external, violent and visible means.• Rate of Interest will be linked to Base Rate and is left to the discretion of the banks.• Interest Subvention/Incentive for prompt repayment as advised by Government of India and / or State Governments. The bankers will make the farmer s aware of this facility.

11. NEWS IN SHORT

11.1. GOVERNING COUNCIL MEETING OF NITI AAYOG

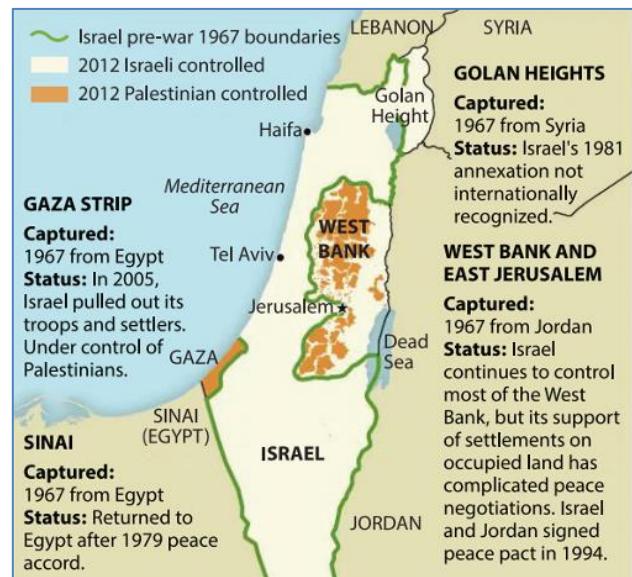
- Recently, sixth meeting of the Governing Council of NITI Aayog was held under the chairmanship of Prime Minister
- Council deliberated on several steps for making India a manufacturing powerhouse, such as reducing compliance burden, initiating reforms at the State level, improving logistics, promoting exports through district-level competition and creating jobs.
- About the Governing Council of NITI Aayog**
 - Composition of Governing Council:** Prime Minister of India, Chief Ministers of all the States and Union Territories with Legislature, Lt Governors of other UTs, Ex-Officio Members and Special Invitees.
 - Function:** Governing Council presents a platform to discuss inter-sectoral, inter-departmental and federal issues to accelerate the implementation of the national development agenda.
 - It is the premier body tasked with evolving a shared vision of national development priorities, sectors and strategies with the active involvement of States in shaping the development narrative. Including today, a total of Six meetings have been held so far.
- NITI Aayog has been mandated with **fostering Cooperative Federalism through structured support initiatives and mechanisms with the States** on a continuous basis, recognizing that strong States make a strong nation on the principles of '**SabkaSaath, Sabka Vikas, Sabka Vishwas**'.
- It seeks to **design and assist the implementation of strategic, long-term policy frameworks and programme initiatives**, while monitoring their progress and efficacy.

11.2. DEMOCRACY INDEX

- Index is released by **Economist Intelligence Unit (EIU)** giving insight into the current state of democracy worldwide for 167 countries.
- India slipped two places to 53rd position in 2020 Democracy Index** while Norway topped the index.
 - Decline in ranking was attributed to "democratic backsliding" by authorities and "crackdowns" on civil liberties.
- Out of 167 countries, Index classifies 23 countries as full democracies, 52 as flawed democracies, 35 as hybrid regimes and 57 as authoritarian regimes
- India has been classified as a 'flawed democracy'** along with countries US, France, Brazil etc.

11.3. ICC RULING OVER PALESTINIAN TERRITORIES

- International Criminal Court (ICC) ruled that its territorial jurisdiction extends to the **territories occupied by Israel since 1967, namely Gaza and the West Bank, including East Jerusalem**.
 - It paves the way for the **prosecution of Israeli and Palestinian Defence Forces and militant groups** for war crimes.
 - This ruling was a result of the **Palestinian Authority gaining formal membership of ICC in 2015**.
- Decision was welcomed by Palestinians and objected by US and Israel, as **Israel is not party to the Rome statute**, founding treaty of ICC.
 - India has not taken any stand as **India is not a member of the Rome Statute**.
- ICC is a **permanent international court** established to investigate, prosecute and try individuals accused of committing the most serious crimes, namely
 - crime of genocide,
 - crimes against humanity,
 - war crimes and
 - crime of aggression.
- ICC was formed by treaty called 'Rome Statute'** negotiated within UN, However, ICC is **not part of UN**.
 - Also, UN Security Council can refer certain situations to the Prosecutor of ICC.



11.4. UNITED NATIONS CAPITAL DEVELOPMENT FUND (UNCDF)

- Indian-origin Preeti Sinha has been appointed as Executive Secretary of UNCDF.

- UNCDF provides **public and private finance work** for the poor in the world's 46 least developed countries (LDCs).
- It was **established by the UN General Assembly** in 1966.
- Its mandate is to “**assist developing countries in development of their economies by supplementing existing sources** of capital assistance by means of grants and loans”.
 - Mandate was modified in 1973 to **serve first and foremost but not exclusively the LDCs**.

11.5. NATIONAL COAL INDEX (NCI)

- **Ministry of Coal** has started **Commercial Auction of coal mines on revenue share basis using NCI**.
 - NCI has been rolled out on 4th June 2020
- NCI is a price index which **reflects the change of price level of coal** on a particular month relative to the fixed base year.
 - The **base year for the NCI is FY 2017-18**.
- NCI is composed of a set of **5 sub-indices: 3 for Non-Coking Coal and 2 for Coking Coal**.
 - As per the grade of coal pertaining to a mine, the appropriate sub-index (Coking and Non-coking) is used to arrive at the revenue share.
 - **Coking coal** is a grade of coal that can be used to produce good-quality coke, one of the key inputs for the production of steel.
 - **Non-coking coals** have higher ash content and does not have any caking properties. It is mainly used as thermal coal for power generation.
- **Prices of coal from all the sales channels of coal, including import**, as existing today are **taken into account** for compiling the NCI.
- The **amount of revenue share** per tonne of coal produced from auctioned blocks would be arrived at **using the NCI by means of defined formula**.

11.6. MAHATMA GANDHI NATIONAL FELLOWSHIP (MGNF)

- MGNF is a **Certificate Program in Public Policy and Management offered by IIMs**. It has been designed at the initiative of Ministry of Skill Development and Entrepreneurship (MSDE).
 - MGNF, first launched as a pilot, is **now expanding to all districts in the country**.
- MGNF fellows **will understand overall skill ecosystem** along with being **attached to District Skill Committees (DSCs)** and help them **manage the skill development planning at district level** through formulating District Skill Development Plans (DSDPs).
- MGNF is **in line with objectives of SANKALP programme of MSDE to strengthen the district skill administration and DSCs**.

11.7. NEPTUNE DECLARATION ON SEAFARER WELLBEING AND CREW CHANGE

- It is a **declaration released by the global maritime industry** recently.
- It primarily focuses on **recognising seafarers as key workers** by all governments worldwide.
- As the frontline workers of the maritime industry **carrying 90% of global trade**, seafarers play a vital role in ensuring the global flow of goods that the world depends on.

11.8. SAGARIKA

- It is **India's first full-fledged international cruise terminal** being set up at **Cochin Port in Kerala**.
 - Kochi has emerged as a major cruise destination in recent years.
- It will bring personnel of customs, Bureau of Immigration and CISF under one roof, thus speeding up paperwork.
- Earlier centre has relaxed cabotage restrictions for **cruise vessels** to transport Indians from one port to another port in the country on foreign cruise vessels transiting through the country's waters.

11.9. SUB-MISSION ON SEEDS AND PLANTING MATERIALS (SMSP)

- Department of Agriculture, Cooperation and Farmers Welfare is implementing farmer's welfare scheme SMSP **under National Mission on Agricultural Extension and Technology (NMAET)**
 - NMAET is to restructure and further strengthen agricultural extension and thereby, enabling the delivery of appropriate technology and improving agronomic practices to farmers.
 - NMAET consists of 4 Sub Missions
 - ✓ Sub Mission on Agricultural Extension (SMAE)
 - ✓ Sub-Mission on Seed and Planting Material (SMSP)
 - ✓ Sub Mission on Agricultural Mechanization (SMAM)
 - ✓ Sub Mission on Plant Protection and Plant Quarantine (SMPP)
- SMSP will cover the **entire gamut of seed production chain**, from production of nucleus seed to supply of certified seeds to the farmers, to provide support for creation of infrastructure conducive for development of the seed sector, etc.
- It aims to produce and supply quality seeds to farmers to enhance production and productivity in the country through various components namely
 - Seed Village Programme,

- Establishment of Seed Processing- cum- Seed Storage Godowns at Gram Panchayat Level,
- National Seed Reserve,
- Boosting Seed Production in Private Sector and
- Strengthening of Quality Control Infrastructure Facilities.
- Major achievements of the scheme from 2014-21
 - Under Seed Village Programme, 4.29 lakh Seed Villages have been created.
 - Certified seeds have been distributed at 75% subsidised rates to 2.61 lakh farmers.
 - Financial support has been provided to the States to establish Seed Processing-cum-storage godown Units at Gram Panchayat level.
 - Under National Seed Reserve, seeds of short and medium crop varieties are kept to meet the requirement of farmers for re-sowing during natural calamities i.e., drought, cyclone and flood etc.
 - In order to alleviate malnutrition in the country, multiple bio-fortified varieties (nutritionally enriched with protein, Iron, Zinc, amino acids etc.) of different crops developed.

11.10. BIODIVERSITY HERITAGE SITE

- Devalsari region in Tehri Garhwal district is likely to be declared as first **biodiversity heritage site of Uttarakhand**.
 - The region is **rich in biodiversity** and has a lot of potential for ecotourism.
 - Last year, a **rare day-flying moth, Achelura bifasciata** was spotted in forests of Devalsari for the first time in history.
- **About Biodiversity Heritage Sites (BHS)**
 - BHS are areas that are **unique, ecologically fragile ecosystems** having rich biodiversity comprising of any one or more of the components such as;
 - ✓ species richness,
 - ✓ high endemism,
 - ✓ presence of rare, endemic and threatened species, keystone species, species of evolutionary significance, wild ancestors of domestic species or land races or their varieties,
 - ✓ past pre-eminence of biological components represented by fossil beds and having cultural or aesthetic values.
 - Under **Biological Diversity Act, 2002** State Government in consultation with local bodies may notify the areas of biodiversity importance as BHS.
 - Currently, there are **18 BHS in India**.

11.11. WETLANDS

- Ministry of Environment, Forest and Climate Change (MoEFCC) established India's first Centre for Wetland Conservation and Management (CWCW).
- CWCW would be a **part of National Centre for Sustainable Coastal Management (NCSCM)**, Chennai, an institution under MoEFCC.
- **Role of CWCW**
 - It would **address specific research needs and knowledge gaps in conservation and management of wetlands**.
 - It will aid in **application of integrated approaches** for conservation, management and wise use of wetlands.
 - It would also **serve as a knowledge hub and enable exchange between State/ UT Wetland Authorities**, wetland users, managers, researchers, policy-makers and practitioners.

11.12. ASIA ENVIRONMENTAL ENFORCEMENT AWARD

- Wildlife Crime Control Bureau (WCCB) has received Asia Environmental Enforcement Award-2020 presented by United Nations Environment Programme (UNEP).
- WCCB has been awarded under the **category 'Innovation' for "Operation WILDNET-II"**.
 - **Operation WILDNET:** WCCB organized this operation to drag attention of enforcement agencies on **illegal wildlife trade over internet using Social Media Platforms** such as Facebook, Twitter, Whatsapp etc.
 - Earlier WCCB has received the award in the same category in 2018.
- **About Asia Environmental Enforcement Award:**
 - The award publicly recognises **excellence in controlling transboundary environmental crime** such as illegal trade in wildlife and illegal trade in chemical or waste including plastic.
 - The Awards are given to **individuals and/or government organizations/teams** that demonstrate excellence and outstanding leadership in enforcement of national laws to combat transboundary environmental crime.
 - **2020 Awards were given by UNEP** in partnership with United Nations Development Programme (UNDP), United Nations Office on Drugs and Crime (UNODC), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and International Criminal Police Organization (INTERPOL).

- **About WCCB**
 - It is an **intelligence and enforcement agency** in the field of wildlife crime. It aims to **conserve wildlife wealth** by proper and effective intervention and by providing professional assistance to create deterrence to the organized wildlife crime.
 - It is a **statutory multi-disciplinary body** under **Wildlife Protection Act 1972** working under Ministry of Environment, Forest and Climate Change.
 - It is **designated nodal agency for CITES** related enforcement.

11.13. WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2021

- Recently, 20th edition of **The Energy and Resources Institute's (TERI)** flagship event, the **World Sustainable Development Summit** was held online.
- The theme of the Summit is '**Redefining our common future: Safe and secure environment for all**'.
- India's **Ministry of Environment, Forests and Climate Change, Ministry of New and Renewable Energy** and **Ministry of Earth Sciences** are key partners of the Summit.
- The Summit brings together a wide number of governments, business leaders, academicians, climate scientists, youth, and the civil society in **the fight against climate change**.
- **About the Energy and Resources Institute (TERI)**
 - It is an **independent, multi-dimensional organization, with expertise in research, policy, consultancy and implementation**.
 - It was established originally as **Tata Energy Research Institute** in **1974**.
 - Its mission is to **transition to sustainable future through the conservation and efficient use of energy with innovative ways of minimizing and reusing waste**.
 - Its work across sectors is focused on:
 - ✓ **Promoting efficient use of resources.**
 - ✓ **Increasing access and uptake of sustainable inputs and practices.**
 - ✓ **Reducing negative impact on environment and climate.**
 - It is headquartered in **New Delhi, India**.

11.14. CHIPKO MOVEMENT

- Recently, **Reni village in Chamoli district, the birthplace of Chipko movement** has been ravaged by recent glacial outburst in Uttarakhand.
- Chipko movement was a **non-violent agitation in 1973 against the felling of trees** by contractors and maintaining the ecological balance.
- Chipko Movement was initiated by **Sundarlal Bahuguna**, in 1973 and his appeal resulted in a 15-year ban on chopping of green trees in 1980.

- The name of the movement 'Chipko' comes from the word 'embrace', as the villagers hugged the trees and encircled them to prevent being hacked.
- Movement is best remembered for the **collective mobilisation of women for the cause of preserving forests** and also brought about a **change in attitude regarding the status of women** in society.
 - Champions of the movement were local women - **Gaura Devi, Sudesha Devi and Bachni Devi**.
- The Chipko Movement followed **Gandhian philosophy of peaceful resistance** and was an uprising against the people destroying ecological balance.
- However, the original **Chipko andolan dates back to the 18th century**
 - It was started by the **Bishnoi community of Rajasthan**.
 - A group of villagers led by **Amrita Devi, laid down their lives while protecting trees** from being felled on the orders of the then King of Jodhpur.
 - After this incident, the king, in a royal decree, **banned cutting of trees in all Bishnoi villages**.

11.15. FISHING CAT

- Recently, a team of conservationists, researchers and enthusiasts across the world **formed a Fishing Cat Conservation Alliance (FCCA)** to ensure **survival of fishing cat and all species which are part of its ecological niche**.
- The **fishing cat, Prionailurus viverrinus**, is a highly elusive wild cat species. It is about twice the size of a typical house cat. The fishing cat is an adept swimmer and enters water frequently to prey on fish.
 - It is nocturnal and apart from fish also preys on frogs, crustaceans, snakes, birds and scavenges on carcasses of larger animals.
- **Habitat and Ecology:** Wetland habitats, mangroves, marshlands, rivers and streams.
 - In India, they have a patchy **distribution along the Eastern Ghats** (Sundarbans in West Bengal, Chilika lagoon and surrounding wetlands in Odisha, Coringa and Krishna mangroves in Andhra Pradesh)
 - Confirmed records show fishing cat populations to be present in Sri Lanka, India, Nepal, Cambodia, Thailand, Pakistan, Bangladesh and Myanmar.
- **Threats**
 - **Habitat loss due to development activities** in wetlands is the main threat to its survival.
 - **Intensive aquaculture** is another threat to the feline as it reduces its food supply.

- Threats from hunting for meat and skin. Tribal hunters indulge in ritual hunting practices.
- IUCN status: **Vulnerable**

11.16. CARACAL

- National Board for Wildlife included caracal in the **list of critically endangered species**.
- The **recovery programme** for critically endangered species in India now includes 22 wildlife species.
- Such listing is expected to bring **central funding to conservation efforts**. It is likely to ensure that the animal is **studied comprehensively for the first time**, including its home range, population, prey, etc.
- It is **medium-sized wildcat** found in parts of **Rajasthan and Gujarat**.
- Its earliest evidence in **subcontinent** comes from a fossil dating back to Indus Valley civilization.
- It is also found in Africa, Middle East, Central and South Asia. While it **flourishes in parts of Africa, its numbers in Asia are declining**.
- It finds mention in **Abul Fazl's Akbarnama**, as a hunting animal in the time of Akbar.
- IUCN lists Caracals under **Least concern due to large numbers in Africa**.

11.17. NASA MODEL TO ASSESS CHANGE IN CARBON CONCENTRATIONS FROM FORESTS

- Recently, a group of researchers, including NASA scientists, has created a **new way to assess how the changes in forests over the past two decades impacted carbon concentrations in the atmosphere**.
- The method tapped into numerous sources, including ground, airborne and satellite data, to create the “**first consistent global framework for estimating the carbon flux specifically for forests**”.
- This is a **change from the current annual reporting of national forestry data**, which still varies between countries despite standardized guidelines from the Intergovernmental Panel on Climate Change (IPCC)
- Biomass estimates for the study were based on **data from NASA's Ice, Cloud, and land Elevation Satellite (ICESat)**, which was primarily designed to track changes in ice sheet coverage but also provides topography and vegetation data.
- Framework could help countries reduce carbon emissions but **lack of uniformity in data on global carbon estimates** can prove to be a setback.
- The new approach also helped identify which forest types have higher uncertainties

Key findings

- Tropical forests absorbed more carbon than other forest types and released more carbon into the atmosphere due to deforestation and degradation.
- Forests collectively **absorbed around 15.6 billion metric tons of carbon dioxide** from the atmosphere between 2001- 2019, while deforestation, fires etc. released 8.1 billion metric tons of carbon dioxide per year.

Carbon Flux

A carbon flux is the **amount of carbon exchanged between Earth's carbon pools** - the oceans, atmosphere, land, and living things - and is typically measured in units of gigatonnes of carbon per year (GtC/yr).

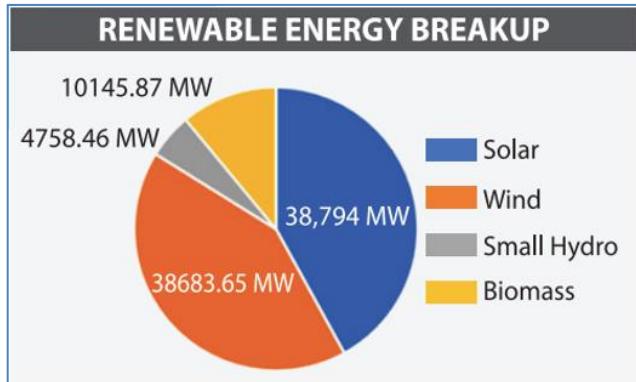
11.18. CARBON WATCH

- Chandigarh became the first state or Union Territory in India to launch Carbon Watch.
- Carbon Watch is a **mobile application to assess the carbon footprint of an individual**.
 - A carbon footprint is the **total amount of greenhouse gases** (including carbon dioxide and methane) that are generated by our actions.
- It aims to make the people **Climate-Smart Citizens** while making them capable of accessing their **carbon footprint**, along with providing them with steps to reduce it

11.19. SOLAR OUTSHINES WIND POWER IN TOTAL CAPACITY

- As per Ministry of New and Renewable Energy data, total **installed capacity of solar power stood at 38,794 MW**, while total wind power capacity was 38,684 MW.
 - In comparison, a decade ago, the **solar segment had a capacity of 18 MW**, while wind power's installed capacity was 13,000 MW.
- Key reasons for this:
 - **Supportive government policies**, like National Solar Mission, Renewable Purchase Obligation, Pradhan Mantri KisanUrja Suraksha evamUtthanMahabhiyan Yojana etc.
 - **Land Certainty due to Solar Park Policy** under which large tracts of land were identified.
 - **Lower solar tariffs** dropping below grid electricity tariffs, leading to quicker adoption.
 - **Role of International Solar Alliance (ISA) to scale up of solar energy**
 - ✓ ISA help to create the conditions that would make funding, developing and deploying solar applications on a large scale a reality.
 - India has target of 175 GW of renewable energy by the year 2022, with 100 GW of solar power.

- India also aspires to achieve 450GW of renewable energy by 2030.
- However, one key concern **high dependence on China for solar cells and modules** as China accounts for 80% of imports.
- Recently, government launched **PLI scheme for solar photo voltaic cells**.



11.20. ARTIFICIAL ISLAND IN NORTH SEA

- Recently, Denmark approved a **plan to build an artificial energy island in the North Sea** as part of its effort to switch to green energy.
- An **energy island** is based on a platform that serves as a hub for electricity generation from surrounding offshore wind farms.
 - North Sea, a part of Atlantic Ocean, is bordered by Norway, Denmark, Scotland, England, Germany, Netherlands, Belgium and France.



11.21. 2020 TREE CITY OF THE WORLD

- Hyderabad city was chosen as one among the **120 'Tree Cities of the World'** by Arbor Day Foundation jointly with Food and Agriculture Organisation of UN.

- It is the **recognition of the City's commitment to growing and maintaining urban forestry**.
- It is the **only Indian city** to get such recognition.

11.22. PLANTS GENERATING MAGNETIC FIELD

- A recent study by scientists from Germany found that the **Venus flytrap (Dionaea muscipula)** plant is capable of generating small magnetic fields.
- These plants send electrical signals to trigger the closure of their traps, to catch an insect, a biomagnetism phenomenon was observed.
 - While leaf stalk, or petiole, is not excitable and is electrically insulated from the trap.
- Magnetic signals in plants are **very weak and it was extremely difficult to measure**, while using new and advanced atomic magnetometers it is measured at **amplitude of up to 0.5 picotesla**, which is millions of times weaker than the Earth's magnetic field.
- Scientists hope that this can help in identifying **how the plant responds to sudden temperature changes, chemicals, and pest attacks**.

11.23. INTENSIFIED MISSION INDRA DHANUSH

- Union Health Minister launched Intensified Mission Indradhanush 3.0.

About Intensified Mission Indradhanush

- In 2014, **Mission Indradhanush** was launched to strengthen and re-energize the programme and achieve full immunization coverage for all children and pregnant women at a rapid pace.
- **Aim of IMI**
 - The focus of special drive was to improve immunisation coverage in select districts and cities to ensure full immunisation to more than 90% by December 2018.
 - Enhance political, administrative and financial commitment through advocacy with key ministries/ departments and stakeholders towards full immunization coverage for each child.
 - **Reach all children with all UIP vaccines due for the age** as per the national immunization schedule in the geographic area with focus on children up to 2 years of age and pregnant women. However, vaccination will be provided to children up to 5 years of age.
 - **Sustain the gains made through Intensified Mission Indradhanush through routine immunization** by using IT based platforms for further planning and follow-up.
- In 2017, Intensified Mission Indradhanush (IMI) was launched to further intensify the immunization programme.

- In 2019, IMI 2.0 launched to achieve targets of full immunization coverage in 272 districts in 27 States and at block level (652 blocks) in Uttar Pradesh and Bihar among hard-to-reach and tribal populations.
- Focus of the IMI 3.0 will be the children and pregnant women who have missed their vaccine doses during the COVID-19 pandemic.
- IMI is closely monitored at the district, state and central level at regular intervals. Further, it would be reviewed by the Cabinet Secretary at the National level and will continue to be monitored at the highest level under a special initiative ‘Proactive Governance and Timely Implementation (PRAGATI)’.

- Immunization Programme in India was introduced in 1978 as ‘Expanded Programme of Immunization’ (EPI) by the Ministry of Health and Family Welfare.
- In 1985, the programme was modified as ‘Universal Immunization Programme’ (UIP) to be implemented in phased manner to cover all districts in the country by 1989-90 with the one of largest health programme in the world.
- Under UIP, immunization is providing free of cost against 12 vaccine preventable diseases:
 - Nationally against 9 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis & Pneumonia caused by Hemophilus Influenza type B
 - Sub-nationally against 3 diseases - Rotavirus diarrhoea, Pneumococcal Pneumonia and Japanese Encephalitis.
- UIP targets to vaccinate nearly 2.7 crore new-borns each year with all primary doses and an additional ~10 crore children of 1- 5-year age with booster doses. In addition, nearly 3 crore pregnant mothers are targeted for TT vaccination each year.
- The two major milestones of UIP have been the elimination of polio in 2014 and maternal and neonatal tetanus elimination in 2015.
- Despite being operational for many years, UIP has been able to fully immunize only 65% children in the first year of their life.

11.24. DIGITAL INTELLIGENCE UNIT (DIU)

- Centre has decided to set up Digital Intelligence Unit (DIU) as a nodal agency to tackle unsolicited commercial communication (UCC), fraud, pesky SMSes and calls, especially in the digital payments space.
- DIU will coordinate with various law enforcement agencies, financial institutions and telecom service providers in investigating any fraudulent activity involving telecom resources.
- Telecom Analytics for Fraud Management and Consumer Protection (TAFCP) will also be set up at all the 22-license service area level.

- Additionally, a website and mobile application for grievance redressal will also be developed.
- Telecom operators need to meet and strictly follow the ministry directives on UCC.
 - In case of any violations by the companies, a financial penalty is also proposed including disconnection of resources in case of repetitive violations.
- The above system will strengthen the trust of people in the digital ecosystem and will make financial digital transactions primarily through mobile more secure and reliable, which will result in promotion of Digital India.

About UCC

- It means any commercial communication that is neither as per the consent nor as per registered preference of recipient, but does not include:
 - Any transactional and service message or voice call.
 - Any message or voice calls transmitted on the directions of the Central Government or the State Government or bodies established under the Constitution in Public Interest.

11.25. SPLINTERNET

- Splinternet is fusion of the words “split” and “internet”. It is defined as the balkanization of the internet due to nationalism, as nations try to preserve their sovereign identities and economic interests.
- There are many reasons for this ‘split’ like global politics, rising trade protectionism, censorship, national security, religious identity etc.
 - Recent move of Indian government to ban Chinese apps has led to growth of homegrown platforms which have grown to be successful.
 - Keeping data within the borders gives governments more power to regulate platforms from point of national security.
- Impact of Splinternet
 - Benefits of collaboration, global reach, and economic growth will be significantly threatened.
 - Digital authoritarianism can significantly impact the agility, resilience and flexibility of the Internet.
 - For the consumer, the splinternet’s biggest impact is in limiting access to information.

Global examples of Splinternet

- China’s Great Firewall which limits citizens’ access to data and is used by the state itself.
- North Korea’s intranet Kwangmyong (Bright Star) also limits and regulates access to data. Citizens have to seek special permission to use it.
- Iran’s National Information Network and Russia’s internet censorship law stand out as other examples.
- USA’s Clean Network Program. It seeks to remove Chinese tech gear from infrastructure in the U.S. and its allies.

11.26. YUDH ABHYAS 20

- It is an annual bilateral joint military exercise between India and USA.

11.27. NURTURING NEIGHBOURHOODS CHALLENGE (NNC)

- Ministry of Housing and Urban Affairs has announced names of 25 cities selected for the NNC under Smart Cities Mission.
- NNC is a three-year initiative that will support cities to develop, pilot, and scale solutions that enhance the quality of life of young children, their caregivers and families in the public realm.
- Cities will receive technical assistance and help in capacity-building to create accessible, safe, walkable streets for young children and families.

11.28. TECHNOGRAPHIS

- An Enrolment Module for TECHNOGRAPHIS has been launched by Ministry of Housing and Urban Affairs (MoHUA).
- TECHNOGRAPHIS are students from IITs, NITs, engineering, planning and architecture colleges, faculty members etc.
- These students will visit Live Laboratories at six Light House Projects (LHPs) sites for learning, consultation, generation of ideas and solutions, experimentation, innovation, and technical awareness.
 - LHPs are model housing projects with houses built with shortlisted alternate technology suitable to the geo-climatic and hazard conditions of the region.

11.29. EDUCATION FINANCE WATCH

- It is a collaborative effort between the World Bank and UNESCO's Global Education Monitoring (GEM) Report.
- Key findings:**
 - Education budgets were cut by 65% of low and lower-middle income (includes India) countries while only 33% of high and upper-middle income countries did so.
 - Lower-income countries are more likely to continue a decreasing trend in their education budgets or to shift from a positive to a negative trend after Covid.
 - Current levels of government spending in low and lower-middle income countries fall short of those required to achieve the Sustainable Development Goals (SDGs).
 - Argentina, Brazil, Egypt, India, Myanmar, Nigeria, Pakistan, and Russia are countries having education shares below 10% and therefore are likely to have other main

financing sources besides budget assigned by the central government.

- Households in low and lower-middle income countries tend to contribute a greater share of the total education spending than those in upper-middle and high-income countries.
- Since 2009, total aid as a share of the national income of recipient countries has increased for low-income countries but fallen for lower-middle-income countries.

11.30. NATIONAL TECHNOLOGY AWARDS 2020

About National Technology Awards (NTA) 2020

- The awards were given by the Technology Development Board (TDB).
- Every year, TDB seeks applications for NTA for commercialization of technologies under three categories:
 - National Award for successful Commercialization of Indigenous Technology
 - National Award for MSMEs
 - National Award for Technology Start-ups

About Technology Development Board (TDB)

- TDB is a statutory body, under Department of Science of Technology,
- TDB provides financial assistance to Indian industrial concerns and other agencies, attempting development and commercial application of indigenous technology, or adapting imported technology to wider domestic applications.
- Since its inception, TDB has funded more than 300 companies for commercialization of technologies. The notable are Bharat Biotech International Limited, Reva Electric Car Company Tata Motors etc.

11.31. ISRO'S PSLV-C51 PUTS BRAZIL'S AMAZONIA-1 AND 18 OTHER SATELLITES INTO ORBIT

- Out of 18 satellites, 4 are from new Indian National Space Promotion and Authorisation Centre (IN-SPACe) and 14 from New Space India Limited (NSIL).
 - This was first dedicated mission of NSIL.
 - Satellites from India:**
 - Satish Dhawan SAT (SDSAT) built by Space KidzIndia to study radiation levels, space weather etc.
 - UNITYsat, a combination of three satellites for providing radio relay services.
- IN-SPACe is an independent nodal agency under Department of Space (DoS).

- It allows space activities and usage of DoS owned facilities by Non-Government-Private-Entities as well as to prioritise the launch manifest.
- IN-SPACE hand-hold, promote and guide private sector through encouraging policies and a friendly regulatory environment.
- NSIL is the commercial arm of ISRO with the primary responsibility of enabling Indian industries to take up high technology space related activities.
 - It is also responsible for promotion and commercial exploitation of the products and services emanating from the Indian space programme.
 - NSIL is incorporated under Companies Act 2013 and it is wholly owned Government of India company, under the administrative control of DOS.
 - NSIL work with IN-SPACe and enable industry consortia to take on some of the activities of ISRO.

11.32. HOPE MISSION

- It is the Mars mission of the United Arab Emirates (UAE). Hope/Amal is the name of the orbiter launched.
- With this the UAE has become the first Arab country to send a spacecraft to Mars and the fifth spacefaring entity to do so after the US, the Soviet Union, Europe and India.
- Hope would orbit the mars for two years (one Martian year or 687 days).
- The probe aims to create the first complete portrait of the Martian atmosphere.

11.33. SANDES

- It is an instant messaging platform launched by National Informatics Centre (NIC), Ministry of Electronics and Information Technology.
 - Initially it was open only to government officers, and now has been released for the common public.
- It has an additional safety feature, that allows a user to mark a message as confidential. This in turn will make the recipient aware that the message should not be shared with others.
- It was launched as part of the government strategy to push for use of India-made software and build an ecosystem of indigenously developed products.

11.34. OPERATIONAL GUIDELINES FOR INTEGRATION OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) WITH NPCDCS RELEASED

- India has become first country in the world to identify need for action for NAFLD by integrating it

with existing National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) strategies.

- This is with the view that existing NPCDCS strategies can easily be aligned to prevent NAFLD.
- NAFLD refers to a group of conditions where there is accumulation of excess fat in the liver of people who drink little or no alcohol.
 - It includes liver abnormalities like non-alcoholic steatohepatitis (NASH), cirrhosis and liver cancer.
 - Once the disease develops, there is no specific cure available.
 - Studies suggest prevalence of NAFLD is around 9% to 32% of the general population in India with a higher prevalence in those with overweight or obesity and those with diabetes or prediabetes.
- NPCDCS was launched in 2010 to prevent and control major Non-Communicable Diseases (NCDs), with focus on strengthening infrastructure, human resource development, health promotion, early diagnosis, management and referral.
- Tackling NAFLD is a step to tackling India's burden of NCDs which contribute to around 60% of all deaths in India.

11.35. CHAURI CHAURA

Prime Minister released a postage stamp to mark the centenary of the event Chauri Chaura (4th February, 1922).

About Chauri Chaura incident

- It happened during Non-Cooperation Movement (NCM) in Chauri Chaura village of Gorakhpur, Uttar Pradesh.
- During the movement, group of protesters were thrashed by the police for mocking foreign cloth, meat and liquor.
- In return, on 4 February 1922 a mob set the police station on fire, killing 23 policemen.
- More than 200 protesters were put on trial by the British administration for the Chauri Chaura incident, 19 sentenced to death and six of them died in police custody.
- In response to the violence at Chauri Chaura in 1922, Gandhi called off the NCM unilaterally and thus, on 12 February 1922, the Non-Cooperation Movement came to an end.
- Gandhi's decision to call off the Non-Cooperation Movement on 12 February 1922 after Chauri-Chaura incident, due to fear of the growth of radical forces was not supported by many and said unjustifiable.
 - Leaders like C. R. Das, Motilal Nehru, Subhash Chandra Bose, Jawaharlal Nehru, Sardar Patel

and Rajendra Prasad reluctantly accepted Gandhi's call.

- Lala Lajpat Rai famously said on Gandhi's decision: **Our defeat is in proportion to the greatness of our leader.**
- Some critics also claimed that movement was called off to protect the interests of landlords and capitalists. Their criticism was based on the **Bardoli resolution of 12 February 1922** which while announcing the withdrawal, asked the peasants to pay taxes and tenants to pay rents.
- Despite withdrawing from the movement, in **March 1922 Gandhi was sentenced to six years in prison**, but was released in February 1924 on health grounds.

11.36. RAJA SUHELDEV

- Recently, the Prime Minister laid down the **foundation stone for a statue of Raja Suheldev** as well as for the development work at Chittaura Lake in **Bahraich**, Uttar Pradesh (UP).
- Raja Suheldev was an **11th century ruler of Shravasti** (present day Bahraich), UP.
- Suheldev is said to have been a Rajbhar or Bhar Rajput, and is **celebrated as a king who saved the Hindu religion from Turkish invaders**.
- He is credited with gathering together heads of tribes including the **Tharu and Banjara**, and the rulers of several small estates, **to resist the Turkish invaders**.
- In battle in **Bahraich in 1034 AD**, he defeated and killed **Ghaznavi general Ghazi Salar Masud** also known as Ghazi Miyan (nephew of Mahmud of Ghazni).
- This battle of Bahraich is mentioned in the Persian hagiography '**Mirat-i-Masudi**' (or Mirror of Masud) written by **Abdur Rahman Chishti** in the 1620s.
- **Chittaura lake** is a Hindu pilgrimage site, centred around a pond in Bahraich, UP.
 - The site is believed to be the place where **the fight between Raja Suheldev and Ghazi Salar Masud took place in 1034 AD**.

11.37. SWACHH ICONIC PLACES (SIP)

- Ministry of Jal Shakti (MoJS) announced **selection of 12 sites for transforming them into 'Swachh Tourist Destinations'** under Phase-IV of SIP.
 - Sites include **Ajanta Caves (Maharashtra), Rock Garden (Chandigarh), Sanchi Stupa (MP), Sun Temple (Odisha), Agra Fort (UP) etc.**
- SIP is an initiative under **Swachh Bharat Mission Grameen**. It aims at enhancing experience of visitors by **improving sanitation and cleanliness standards at and around the sites**.
- It is coordinated by **Department of Drinking Water and Sanitation (MoJS)** in association with Ministry of Urban Development, Ministry of Culture, Ministry of Tourism and concerned State governments.

11.38. FOSSIL OF EARTH'S OLDEST ANIMAL FOUND IN BHIMBETKA

- Researchers believe that they have found **India's first fossil of Dickinsonia** in **Bhimbetka**.
- Dickinsonia is considered to be Earth's oldest animal, dating back 570 million years ago (late Ediacaran period). It is an **extinct genus of a basal animal** (animals which have radial symmetry in their body plans).
 - It is considered an **integral links between the early, simple organisms and then explosion of life in Cambrian Period** that was around 541 million years ago.
 - Dickinsonia has been found in Australia, Russia, Ukraine, China.
- Dickinsonia's discovery in India will pave way for further assessment of biogeographic provinces and also plate tectonic reconstructions for late Ediacaran.
 - It also confirms assembly of **Gondwanaland (ancient supercontinent) by 550 Ma**.
- Note- Earlier, in 2019 fossils of Denisovans (an extinct species or subspecies of archaic human) was found in a Siberian Cave.
- About Bhimbetka
 - Bhimbetka Caves are situated in **foothills of the Vindhyan Mountains (Near Bhopal) in Madhya Pradesh**.
 - It is also a **UNESCO world heritage site**.
 - Oldest cave paintings in Bhimbetka are **believed to be about 12,000 years old** mostly made in red and white.

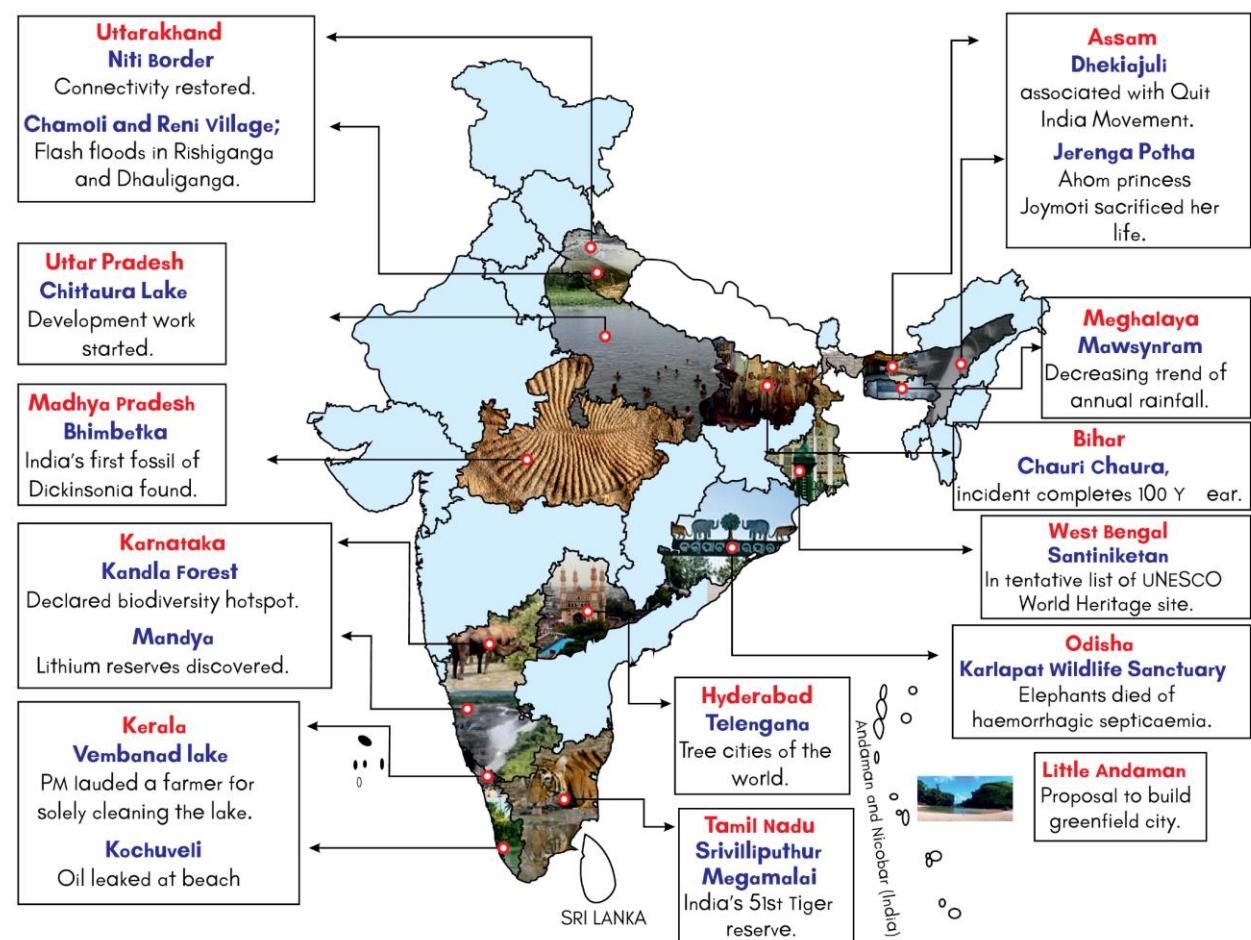


SMART QUIZ

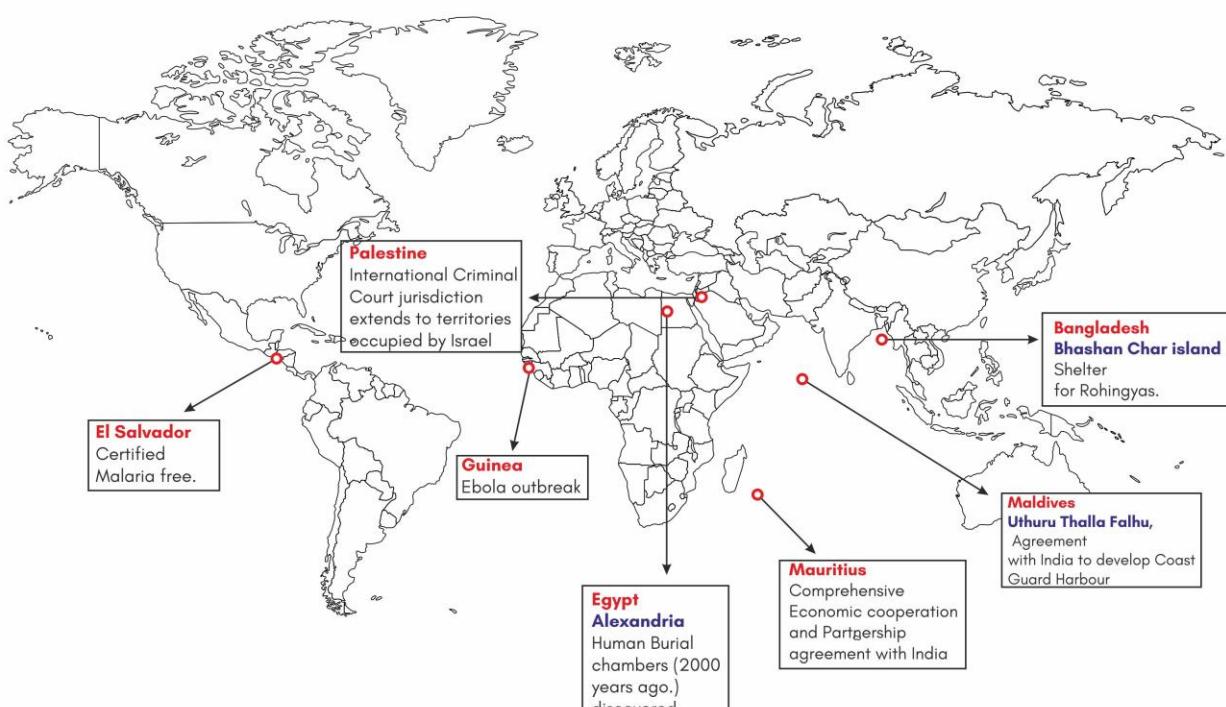
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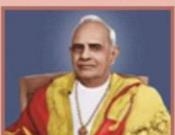
Places in News : India



Places in News: World



Personalities in News

Bir Chilarai (1510-1571 AD) 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> PM recently paid tribute to Bir Chilarai (also called Shukladhwaj) <input checked="" type="checkbox"/> Bir Chilarai (1510-1571 AD) was a general of the Koch Royal Dynasty of Assam and played a crucial role in expanding empire of his elder brother, Nara Narayan. <input checked="" type="checkbox"/> He was son of Maharaja Viswa Singha, the founder ruler of Koch royal dynasty. <input checked="" type="checkbox"/> Assam government confers Bir Chilarai Award, the highest honor for bravery to individuals.
Chhatrapati Shivaji 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> His Birth anniversary was recently celebrated. <input checked="" type="checkbox"/> Born at Shivneri to Shahaji Bhosale and Jija Bai, he inherited Jagir of Poona from his father in 1637. <input checked="" type="checkbox"/> Through his military tactics, Shivaji acquired land in Deccan and western India. He was crowned king of the Marathas in 1674, at Raigad. <input checked="" type="checkbox"/> He established a strong army and a navy. Indian Navy's Western Command is called INS Angre named after Shivaji's admiral Kanhoji Angre. <input checked="" type="checkbox"/> Shivaji was also considered a master of the guerrilla warfare.
Dayanand Saraswati 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> He was a philosopher, a reformer and founder of Arya Samaj (in 1857 in Bombay). His mentor was Swami Virajanand. <input checked="" type="checkbox"/> He aimed at re-establishing teachings of Vedas. He authored 'Satyarth Prakash' (The Light of Truth). <input checked="" type="checkbox"/> He encouraged education and equal rights for men and women. He denounced caste system, superstitions and animal sacrifice. <input checked="" type="checkbox"/> First DAV High School was established in Lahore (1886).
Guru Ravidas Jayanti 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Guru Ravidas was a Saint, philosopher, poet, social reformer of the Bhakti movement, known for making efforts in eradicating caste system. <input checked="" type="checkbox"/> He was born in Varanasi around 1377 C.E. <input checked="" type="checkbox"/> He was contemporary of Kabir and Guru Nanak Dev. <input checked="" type="checkbox"/> Ravidas' devotional songs were included in the Sikh scriptures, Guru Granth Sahib. <input checked="" type="checkbox"/> Mirabai was a disciple of Ravidas.
Mannathu Padmanabhan 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> He was a social reformer and freedom fighter from Kerala. He is recognized as founder of Nair Service Society (NSS), organization working for welfare of Nair community. <input checked="" type="checkbox"/> He took part in Vaikkom (1924) and Guruvayoor Sathyagraha(1929) related to temple entry.
Khwaja Moinuddin Chishti 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> PM offered a chadar during the 809th Urs festival at the Dargah of Khwaja Moinuddin Chishti. <input checked="" type="checkbox"/> He was a Persian Sufi saint who established Chisti order in South Asia and contributed to the spreading of Islamic Sufi mystic order. <input checked="" type="checkbox"/> He is known as Gharib Nawaz (benefactor of the poor) <input checked="" type="checkbox"/> After his death a dargah (a Muslim shrine or tomb) was erected in Ajmer, Rajasthan by Iltutmish and later enlarged by Mughal Emperor Humayun.
Pandit Bhimsen Joshi (4, 1922 -January 24, 2011) 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Recently, year-long Birth Centenary celebrations of Pandit Bhimsen Joshi started. <input checked="" type="checkbox"/> He was a Hindustani classical vocalist from Karnataka. <input checked="" type="checkbox"/> A member of the Kirana Gharana, he is renowned for the khayal form of singing, as well as for his popular renditions of devotional music (bhajans and abhangs). <input checked="" type="checkbox"/> He was honoured with Bharat Ratna in 2008. <input checked="" type="checkbox"/> In 1975, he was awarded the Sangeet Natak Akademi Award.
Raja Suheldev 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Prime Minister laid the foundation stone of the statue of Raja Suheldev in Bahraich district of Eastern Uttar Pradesh. <input checked="" type="checkbox"/> Raja Suheldev was an 11th century ruler of Shravasti(present day Bahraich). <input checked="" type="checkbox"/> He defeated Ghaznavi general Ghazi SalarMasud (nephew of Mahmud of Gazni) with the help of other communities like Tharu and Banjara as well as small kings in 1033 AD.

WEEKLY FOCUS

Holistic coverage of an issue every week

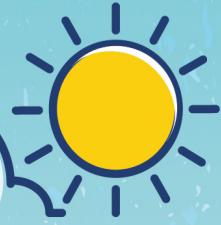
ISSUE	DESCRIPTION	LEARN MORE
 Government Budgeting: What, Why and How?	<p>The emergence of the welfare state made it important that the government money is being judiciously used to better the living conditions of society in general and the marginalized sections in particular. Therefore, a well-planned budget is of utmost importance for any government. This document elaborates on the evolution of India's budgetary process and takes into account the prevailing weaknesses in the process. Going ahead, it also discusses the factors that ail the credibility of Indian budget and the reforms that are needed to revamp the budgeting process to become more relevant in the new age digital era.</p>	
 Coastal Security: State of India's Preparedness	<p>The management of coastal security in India underwent a paradigm shift after the '26/11' Mumbai terror attacks. Over the past years, efforts to secure India's coasts have stepped up. But, are they adequate? This document aims at understanding India's approach towards coastal security as it has evolved since Independence, kinds of threats and challenges that India's coasts have been facing and the factors that have hampered the smooth and effective functioning of our coastal security apparatus. It also discusses the sincere adoption and effective implementation.</p>	
 Post Pandemic Economy: New Destination, New Path	<p>2020 was a year of unprecedented economic disruption globally. The Indian economy suffered an even bigger disruption with the RBI calling it "historic technical recession". This document explains how the COVID has exposed not only the fragile Indian Economy but also the multidimensional impacts of this fragility. Further, it also discusses what it takes to recover and strengthen the Indian economy for Post-Pandemic Era.</p>	
 Unpaid Work: Women's Responsibility or an Economic Activity?	<p>Unpaid work performed by women undermines their rights, limits their opportunities, capabilities and choices and thus impeding their empowerment. This document analyses the reasons behind skewed distribution of unpaid work in our society and its implications. At the same time, Goal 5 of SDGs includes a target for recognizing and valuing unpaid care and domestic work. The document discusses the need and challenges with recognizing unpaid work as an economic activity and shows a way ahead to deal with the issue using 'Triple R' Approach .</p>	

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YADAV**

7
AIR



**GANESH KUMAR
BASKAR**

8
AIR



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9
AIR



**RAVI
JAIN**

10
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Banda Bahadur Marg, Mukherjee Nagar



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