



ASTRA

COMPLETE COVERAGE OF MONTHLY CURRENT AFFAIRS

FEBRUARY 2021

GO GREEN
GO ELECTRIC



Corp. Office: # 61/3rt, 2nd Floor, SR Nagar, Near Community Hall, Hyderabad, Telangana - 500 038.
Main Campus: Padmashali Seva Samajam, Opp: St. Martins Eng. College, Dulapally Road, Kompally,
Hyderabad, Telangana - 500 100. Phone: 7997992479 / 80 / 82 / 83 | Website: igniteias.com

HISTORY AND CULTURE

Matua Community	4
Dickinsonia fossil discovered in Bhimbetka	4
Pattachitra Painting	5
Centenary of 'ChauriChaura' Incident	6
Tholpavakoothu	6
Bhagyalakshmi Temple	7

GEOGRAPHY & ENVIRONMENT

Caracal	8
World Sustainable Development Summit 2021	9
IIT Bombay study on Himalayan water scarcity	10
Marine Mega Fauna Stranding Guidelines	11
'Go Electric' Campaign Launched	12
Geography and Disaster Management-Atlantic Meridional Overturning Circulation (AMOC)	13
Glacial Lake Outburst Flood	13
India gets its first Centre for Wetland Conservation and Management	14
Tree City of the World	15
Making Peace with Nature: UNEP Report	16
Seismic Hazard map of the Eastern Himalaya	16
NDMA Guidelines on Flash Floods	17
Chamoli Disaster	19
Fire in Simlipal National Park	20

POLITY & GOVERNANCE

Parliamentary Standing Committee on reforms in Justice System	22
Time to revisit the 50% cap on Reservations	22
Government's New Social Media Guidelines	23
Securities Appellate Tribunal (SAT) and Securities & Exchange Board of India (SEBI)	26
Places of Worship Act	27
Recommendations on DNA Bill	28
Medical Termination of Pregnancy (Amendment) Bill, 2020	31
NITI Aayog's Proposal for Little Andaman	32
Community Forest Resource Rights	34
Amendments to the Juvenile Justice Act	34

SOCIAL WELFARE & SCHEMES

Pey Jal Survekshan - Pilot	37
Bonded Labour in India	38
Intensified Mission Indradhanush (IMI) 3.0	40
Technograhis	41
Indian Sign Language (ISL)	41
Welfare Measures For Inter State Migrant Workers	42
Pradhan Mantri Matru Vandana Yojana	42
PM Jan Arogya Yojana	43
Sandes: Government Instant Messaging System	44

ECONOMY

Kapila Scheme	45
Micro Lending Issues	46
Privatization of Banks	48
Arbitration and Conciliation (amendment) bill 2021	50
PLI Scheme for Telecom and Networking Products	53
SFURTI clusters	54
Bad Bank and Developmental Bank	55
Rise in Prices	56
Gilgit Bonds	57
Off Budget Borrowing	59
Presumptive Taxation scheme	60
ADVAIT (Advanced Analytics in Indirect Taxation)	60
One Nation on standard	61
Feeder Separation	61
Solar Energy Corporation of India	62
Draft Blue Economy Policy for India	63
Vehicle Scrapping Policy	66

INTERNATIONAL RELATIONS

Grand Ethiopian Renaissance Dam	68
Pakistan to remain in grey list of FATF	69
India-Mauritius	70
Chinese Dam Projects on Brahmaputra	73
Ceasefire Along Line of Control	75
Myanmar Military Coup	76
Rice exports to Singapore	78
International Criminal Court	79
Sri Lanka pushes India out of Colombo Terminal Project	81
Shahtoot Dam in Kabul	82

SCIENCE & TECHNOLOGY

Ethylene Glycol	83
Start Dust 1.0	83
Square Kilometer Array Observatory	84
JATP- CENTER OF EXCELLENCE	85
Einsteinium	86
UAE Hope Mission	87
Geo Spatial Sector	88
Green Hydrogen	89
India Urban Data Exchange	90
Sandes	91
Bhuvan Satellite	92
Hemorrhagic Septicemia	93
M-sand	93

REPORTS

Global Housing Technology Challenge	95
Corruption Perception Index 2020	96
International Energy Agency(IEA) releases the India Energy Outlook 2021 Report.	97

Matua Community

History & Culture

Why in news?

- The Prime Minister recently met **Binapani Devi**, popularly known as '**Boro Ma**' the matriarch of the Matua community.

About MATUA community

- Matuas, originally from East Pakistan, are weaker section Hindus who migrated to India during the Partition and after the creation of Bangladesh. Many of them have been accorded Indian citizenship but a sizable section of the population has not.
- Matuas are Namasudras, a Scheduled Caste group.
- The Matua Mahasangha, a religious reforms movement and a sect, was formed by Harichand Thakur in East Bengal in the mid-1800s.
- Harichand's grandson PR Thakur established West Bengal's Thakurnagar as headquarters of the sect after 1947.
- Boro Ma belongs to the same family, which still wields influence on the community.

Importance of community

- While no official count is available, community leaders put their population at 3 crore.
- They are a deciding factor in many Lok Sabha seats in West Bengal which assumes a lot of political significance.

Dickinsonia fossil discovered in Bhimbetka

History & Culture

What is the news?

- Researchers have found the first-ever fossil in India of a Dickinsonia —the Earth's 'oldest animal', dating back 570 million years — on the roof of what's called the 'Auditorium Cave' at Bhimbetka.

Dickinsonia

- Dickinsonia is an extinct genus of basal animal that lived during the late Ediacaran period in what is now Australia, Russia and Ukraine.
- The individual Dickinsonia typically resembles a bilaterally symmetrical ribbed oval.
- Its affinities are presently unknown; its mode of growth is consistent with a stem-group bilaterian affinity, though some have suggested that it belongs to the fungi or even an "extinct kingdom".
- The discovery of cholesterol molecules in fossils of Dickinsonia lends support to the idea that Dickinsonia was an animal.



New findings:

- Dickinsonia fossils have shown that they could exceed four feet in length but the one found in Bhimbetka is 17 inches long.
- Eleven feet above the ground, almost blending with the rock and easily mistaken by laymen for prehistoric rock art, they found imprints of the Dickinsonia.
- It is believed to be one of the key links between the early, simple organisms and the explosion of life in the Cambrian Period, about 541 million years ago.

Cambrian Explosion and Dickinsonia

- The 'Cambrian Explosion' is the term given to the period of time in history when complex animals and other macroscopic organisms such as molluscs, worms, arthropods and sponges began to dominate the fossil record.
- Researchers from Australian found the Dickinsonia fossil since its tissue contained molecules of cholesterol a type of fat that is the hallmark of animal life.

About Bhimbetka

- The Bhimbetka rock shelters were found first by V S Wakankar . Since then, thousands of researchers have visited the site, but this rare fossil went undetected.
- The Bhimbetka rock shelters are an archaeological site in central India that spans the prehistoric Paleolithic and Mesolithic periods, as well as the historic period.
- It exhibits the earliest traces of human life in India and evidence of Stone Age starting at the site in Acheulian times.
- It is located in the Raisen District in Madhya Pradesh about 45 kilometres (28 mi) south-east of Bhopal.
- It is a UNESCO World Heritage Site that consists of seven hills and over 750 rock shelters distributed over 10 km (6.2 mi).
- At least some of the shelters were inhabited more than 100,000 years ago.
- Some of the Bhimbetka rock shelters feature prehistoric cave paintings and the earliest are about 10,000 years old (c. 8,000 BCE), corresponding to the Indian Mesolithic.
- These cave paintings show themes such as animals, early evidence of dance and hunting.



Pattachitra Painting

History & Culture

Why in news?

- **The Prime Minister has praised the Odisha pattachitra painting in the Mann Ki Baat.**

About pattachitra paintings

- Pattachitra style of painting is one of the oldest and most popular art forms of Odisha.
- The name Pattachitra has evolved from the Sanskrit words patta, meaning canvas, and chitra, meaning picture.
- Pattachitra is thus a painting done on canvas, and is manifested by rich colourful application, creative motifs and designs, and portrayal of simple themes, mostly mythological in depiction.
- The Odisha Pattachitras are known for its intricate designs and was given the GI tag in 2008.

CATEGORIES OF PAINTINGS

- Paintings on cloth or 'PattaChitra'
- Paintings on walls or 'BhittiChitra'
- Palm leaf engravings or 'Tala Patra Chitra' or 'Pothi, Chitra'.

POPULAR THEMES OF PAINTINGS

- The theme of the Pattachitra paintings are mostly based on Hindu Mythology and inspired by JagannathSanskriti.
- ThiaBadhia – depiction of the temple of Jagannath.
- Krishna Lila – enactment of Jagannath as Lord Krishna displaying his powers as a child.
- Dasabatara Patti – the ten incarnations of Lord Vishnu.
- Panchamukhi – depiction of Lord Ganesh as a five-headed deity.



Centenary of 'ChauriChaura' Incident

History & Culture

What is the News?

- The Prime Minister has inaugurated the Chauri Chaura centenary celebrations at Chauri Chaura in Gorakhpur, Uttar Pradesh.

About Chauri Chaura incident:

- The Chauri Chaura incident took place on 4 February 1922 at Chauri Chaura in the Gorakhpur district of the United Province (Uttar Pradesh) in British India.

The sequence of Events:

- Launch of Non-Cooperation Movement:** In 1920, Mahatma Gandhi, launched the non-cooperation movement. It was launched to challenge oppressive government regulatory measures. The movement used non-violent methods of civil disobedience known as Satyagraha protests.
- National Volunteer Corps:** In 1921-22, volunteers of the Congress and the Khilafat movement were organized into a national volunteer corps. In 1922, these Corps appointed peasant officers in Gorakhpur to fill out pledges of non-cooperation, collect subscriptions and lead the picketing of shops selling foreign items.
- The incident:** In 1922, the volunteers participating in the Movement led by Bhagwan Ahir clashed with police, who opened fire. In retaliation, the demonstrators attacked and set the police station on fire. It killed all inside the station. The incident led to the death of three civilians and 22 policemen.
- Impact:** Mahatma Gandhi was strictly against violence. He halted the non-co-operation movement on the national level on 12 February 1922, as a direct result of this incident.
- Consequence:** It resulted in disillusionment among many younger Indian nationalists that India would not be able to end colonial rule through non-violence.
- Hence, after this incident many revolutionaries had arisen—Jogesh Chatterjee, Ramprasad Bismil, Sachin Sanyal, Ashfaqulla Khan, Jatin Das, Bhagat Singh, Bhagwati Charan Vohra, Masterda Surya Sen, and many others.

Tholpavakoothu

History & Culture

Why in news?

- For the first time, Tholpavakkoothu, the famous shadow leather puppets will tell stories of the epic Ramayana with the help of robots.

Tholpavakoothu

- Tholpavakoothu is a form of shadow leather puppetry that is practiced in Kerala. It is also known as Nizhalkkoothu and Olakkoothu.
- Temple art form:** It is a traditional temple art. It has roots in Palakkad and neighboring regions in Kerala. It used to be performed in the Bhadrakali temples of Palakkad for telling tales from the Ramayana.
- Origin:** It is believed to have originated in the ninth century AD and uses Kamba Ramayana as its basic text.
- Made up of:** The puppets used to be made out of deerskin but are now typically made from goatskin. The puppets are painted in vegetable dyes, as these dyes last long.
- Instruments used:** The instruments used for the art form include Ezhupara, Chenda, and Maddalam.
- Puppeteer:** The lead puppeteer is usually called a pulavar. It is an honorific given to a who is also a scholar.



Bhagyalakshmi Temple

History & Culture

Why in the news?

- The Bhagyalakshmi Temple abutting the Charminar 'came into existence' after the merger of Hyderabad State with the Union of India, and there are no records of the chilla at the monument, the Archaeological Survey of India (ASI) has stated responding to a Right to Information query.

About the temple

- The Bhagyalakshmi temple too has been in the centre of a land dispute like the Ayodhya Ram temple. It was alleged that the temple was built and later encroached into Charminar property.

Key-observations made by ASI

- The Bhagyalakshmi Temple came into existence after taking over of Hyderabad by the Government of India adjacent to South Eastern minaret of the Charminar, a Centrally Protected Monument.**
 - No records are available in this office about the Chilla adjacent to Charminar.
- "Protected monument" means an ancient monument which is declared to be of national importance by or under the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act).**

- Built by:** Mohammed QuliQutub Shah in 1591
- He was the founder of Hyderabad to commemorate the end of the plague in the city
- Each of the sides measure 20 meters while the minarets are located at a height of 48.7 meters from the ground level.
- Each side of Charminar opens into a plaza like structure where the giant arches overlook the major thoroughfares.
- It is a clear square structure that measures 31.95 mts. on each side while imposing arches span a distance of 11mts.
- It is these four (char) minarets (minar) that give the building, its name 'Charminar'.
- Each minar stands on a lotus-leaf base, a special recurrent motif in QutubShahi buildings.
- There are 149 circular steps inside each minaret.
- The four clocks in four cardinal directions were added in the year 1889.

Caracal

Geography & Environment

What is the news?

- The National Board for Wildlife includes the caracal in the list of critically endangered species. The recovery programme for critically endangered species in India now includes 22 wildlife species.

About Caracal:

- It is a medium-sized wild cat native to Africa, Middle East, Central Asia and South Asia including India. The population of this cat is increasing in Africa while its numbers are declining in Asia.



Characteristics:

- Features:** The caracal has long legs, a short face, long canine teeth. It has distinctive ears that are long and pointy with tufts of black hair at their tips.
- Nocturnal Animal:** It is an elusive, primarily nocturnal animal. Its sightings are not common.
- Diet:** The caracal is a carnivore. It typically preys upon small mammals, birds, and rodents.
- Significance:** The caracal has traditionally been valued for its flexibility and its extraordinary ability to catch birds in flight.

Why is the wild cat named Caracal?

- Its name is on the basis of the Turkish word *karakulak*, meaning 'black ears'. It is named due to its iconic ears.
- Different Names:**
 - In India, Caracal is called *Siya gosh*, a Persian name that translates as 'black Ear'.
 - A Sanskrit fable (short story) exists about a small wild cat named *deergha karn* or 'long-eared'.

Habitat:

- Earlier Caracals could be found in arid and semi-arid scrub forest regions of 13 Indian states. It was also found in nine out of the 26 biotic provinces.
- However, currently, its presence is restricted to Rajasthan, Kutch, and parts of Madhya Pradesh (MP).

Conservation Status:

- IUCN Red List: Least Concern
- Wildlife Protection Act, 1972: Schedule I
- CITES Listing: Appendix I for the Asian population and Appendix II for others.

Historical Background of Caracal Wildcat

- The earliest evidence of the **caracal in the subcontinent comes from a fossil** dating back to the civilisation of the **Indus Valley (3000-2000 BC)**.
- It has traditionally been valued for its **litheness and extraordinary ability** to catch birds in flight.
- It was a **favourite coursing or hunting animal** in medieval India.
- Firuz Shah Tughlaq (1351-88) had **siyah-goshdar khana**, stables that housed large numbers of coursing caracal.
- It finds mention in **Abul Fazl's Akbarnama**, as a hunting animal in the time of Akbar (1556-1605).
- The descriptions and illustrations of the caracal can be found in **medieval texts** such as the **Anvar-i-Suhayli, Tutinama, Khamsa-e-Nizami, and Shahnameh**.
- The **East India Company's Robert Clive** is said to have been presented with a caracal after he defeated Siraj-ud-daullah in the Battle of Plassey (1757).
- The caracal has historically lived in **13 Indian states**, in nine out of the 26 biotic provinces.

Threats to Caracal and their declining numbers

- The caracal could be earlier found in **arid and semi-arid scrub forest and ravines** in Rajasthan, Delhi, Haryana, Punjab, Gujarat, Madhya Pradesh, Uttar Pradesh, Maharashtra, Andhra Pradesh, Telangana, Odisha, Jharkhand, and Chhattisgarh.
- Its presence is restricted to **Rajasthan, Kutch, and parts of MP.**
- The caracal is rarely hunted or killed in recent years but the **cases have been detected of the animal** being captured to be sold as exotic pets.
- The decline of its population is **attributable mainly to loss of habitat** and increasing urbanisation.
- The **infrastructure projects** such as the building of roads lead to the fragmentation of the caracal's ecology and disruption of its movement.
- The **loss of habitat also affects the animal's prey** which includes small ungulates and rodents.

World Sustainable Development Summit 2021

Geography & Environment

Why in news?

- Recently, the Prime Minister inaugurated the **World Sustainable Development Summit 2021**. The theme of the Summit is '**Redefining our common future: Safe and secure environment for all**'.

About the summit

- The Prime Minister emphasized **climate justice** for **fighting against climate change**. Climate justice is inspired by a **vision of trusteeship**- where growth comes with **greater compassion to the poorest**. Climate justice also means giving developing countries enough space to grow. The country is committed to reducing the emissions intensity of **GDP by 33 to 35 percent from 2005 levels**.

India's Achievements and Efforts:

- India is making **steady progress** on its commitment to **Land Degradation Neutrality**.
- Renewable energy is also picking **speed in India**.
 - The country is on track to set up **450 gigawatts of Renewable Energy** generating capacity by **2030**.
- In March 2019, India achieved nearly a **hundred percent electrification**.
 - This was done through **sustainable technologies** and **innovative** models.
 - **Ujala program**- The scheme is being named "UJALA" - an acronym for Unnat Jyoti by Affordable LEDs for All. This has reduced over thirty-eight **million tonnes of carbon dioxide per year**.
 - **The Jal Jeevan Mission** -Aims to provide a tap water connection to every rural household by 2024. It has connected over thirty-four million households with tap connections in just about 18 months.
 - **PM Ujjwala Yojna**-It is a scheme of the **Ministry of Petroleum & Natural Gas** for providing LPG connections to women from Below Poverty Line (BPL) households. Through the **PM Ujjwala Yojna**, more than 80 million households below the poverty line have access to clean cooking fuel
 - **International Solar Alliance**.-The ISA plays a four-fold role in establishing a global solar market: it is an accelerator, an enabler, an incubator, and a facilitator.
 - **Special attention towards animal protection**-in the last five to seven years, the population of lions, tigers, leopards and Gangetic river dolphins have gone up.

About the World Sustainable Development Summit

- It is the annual flagship event of **The Energy and Resources Institute (TERI)** instituted in 2001.
- The **Summit series** has marked 20 years in its journey of making '**sustainable development**' a globally shared goal in the year 2021.
- The Summit has established itself as a **responsible and effective platform** for **mobilizing opinion-makers** to **identify and advance** pioneering actions to address some of the most relevant issues concerning **sustainable development**.

The Energy and Resources Institute (TERI):

- TERI is an **independent, multi-dimensional organization**, with expertise in **research, policy, consultancy, and implementation**.
- It has fostered **international collaboration** on sustainability action by creating a number of platforms and fora.

- The institution believes that resource efficiency and waste management are the keys to smart, sustainable, and inclusive development.
- **Focused Areas-**
 - Promoting efficient use of resources.
 - Increasing access and uptake of sustainable inputs and practices.
 - Reducing the negative impact on the environment and climate.

IIT Bombay study on Himalayan water scarcity

Geography & Environment

Why in news?

- IIT Bombay has recently published a report on water scarcity in Himalyan region.

Key findings of the study

- The study analysed the **daily precipitation, maximum and minimum daily temperatures, wind speeds, land cover, elevation and soil properties** of multiple Himalayan **Rivers like Sutlej, Thulo Bheri, Kali Gandaki, Dudh Kosi and Arun**.
- Glacier-melt will increase to about 15% to 70% in a warmer environment with its present volume, but then will decrease to 3%–38% substantially when the glacier volumes shrink.
- However, increased precipitation and moist environment may compensate for such a decrease.
- **Snowpacks and glaciers** are two important water storage units in the Himalaya.
- Though snow has a lower density and will melt easily in a warming climate, the reduced snowfall will, in turn, reduce the amount of snow-melt.

Reasons Water Scarcity

- As per **NITI Aayog 2018 report**, nearly **50% of Himalayan Springs have dried** leading to the drier river system
- **Climate Change**: Increasing temperature has an adverse impact on monsoon pattern and glacier volumes.
- **Unplanned urbanisation**:
 - Nearly **50% of the population of the Himalayas will become urban in the next 30 years from present-day 3%**.
 - Water's demand-supply gap may double by 2050.
- **Disappearance of traditional water systems** viz stone spouts, wells, and local water tanks
- **Development Projects and Dams**: Char Dham and multiple rail and road projects and Dams have destabilised sedimentary slopes of Himalayas, triggering landslides and avalanches.

Government Initiatives regarding Himalayan Ecosystem:

- **National Mission for Sustaining the Himalayan Ecosystem**:
 - Started the Himalayas Climate Change Portal.
 - An Initiative under the National Action Plan for Climate Change.
- **Housing Policy of 2011**:
 - Provides guidelines on Construction on Mountainous Regions.
- **NMHS – National Mission on Himalayan Studies**
 - It is being implemented by the **Ministry of Environment, Forest & Climate Change (MoEF&CC)**.
 - Nodal and Serving hub is **G.B. Pant National Institute of Himalayan Environment (NIHE)**.

Marine Mega Fauna Stranding Guidelines

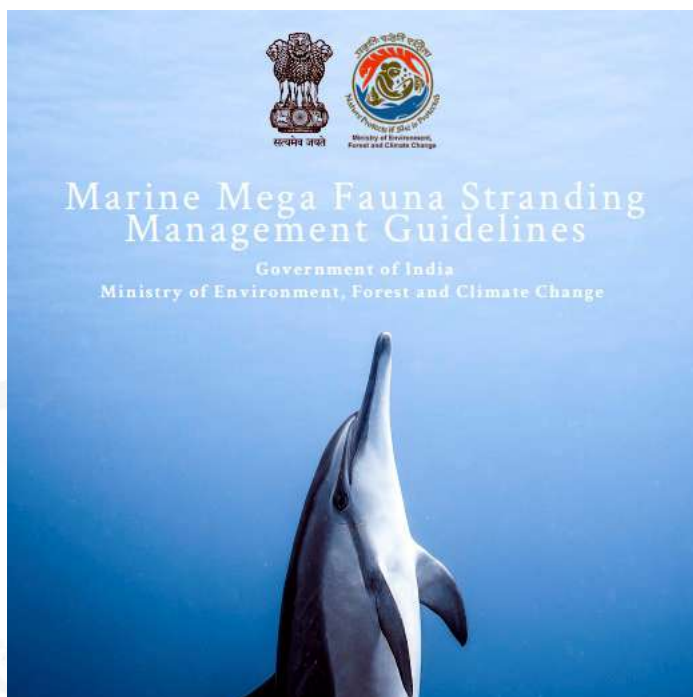
Geography & Environment

Why in news?

- Union Minister for Environment, Forests and Climate Change Prakash Javadekar released **Marine Mega Fauna Stranding Guidelines** for long-term conservation of marine species and their habitats.

Need for such Guidelines:

- Till now there **was no database of the stranded marine animals, the frequency and the hotspots have not been identified.**
- Over the years, experts have stressed on **data collection, constituting a response team in the coastal states and offering training to the first responders.**
- In **absence of Standard Operating Procedures**, there is confusion and improper handling of stranded animals
- For example: When a **massive carcass of a 37-foot Bryde's whale washed ashore** the Juhu beach **in Mumbai in 2016**. It was moved only **after over 24 hours**, without a defined protocol or necessary safety equipment



Key Points:

- Till now there **was no database of the stranded marine animals, the frequency and the hotspots have not been identified.**
- Over the years, experts have stressed on **data collection, constituting a response team in the coastal states and offering training to the first responders.**
- In **absence of Standard Operating Procedures**, there is confusion and improper handling of stranded animals.
 - For example: When a **massive carcass of a 37-foot Bryde's whale washed ashore** the Juhu beach **in Mumbai in 2016**. It was moved only **after over 24 hours**, without a defined protocol or necessary safety equipment.
- The guidelines aim to prepare a **database on cetacean sighting and stranding** across the country.
- It will help set up a **national stranding centre** and **another in the state with district/local coordinator with high stranding and bycatch cases.**
- A basic marine stranding network will also be created.
 - It will consist of **first responders, forest guard, divisional forest officer, government official veterinary and marine police.**
 - A first responder keeps a live individual comfortable and a dead individual from getting washed back into the sea and helps the scientists, veterinarians and the departments in data collection or rescue release operations.
 - All responders must use gloves and masks
- The role of a **marine wildlife stranding network** is to **inform, rescue/rehab, collect biological information and if possible, ascertain the cause of death of animals.**
- It lays down the steps to be followed **for live and dead stranding.**
 - In case of live stranding, where the animal **can be released into the sea, they will be satellite tagged** for later identification and to track movements after release.

Government Initiatives to Save Marine Ecosystem

- **Wildlife Protection Act, 1972:** Provides protection to a wide number of animals against protection.
- **Environmental Protection Act, 1986:** Prohibits use of any parts of selected marine faunal com against construction and other purposes.
- **Coastal Regulation Zone Notification, 1991:** Regulates onshore development activities top environments.
- **Indian Fisheries Act:** The fisheries act deals with penalties for the destruction of fish by explosives in inland and coastal waters, the destruction of fish by poisoning of waters and the protection of fish in selected waters by rules of state Government.
- **National Policy on Marine Fisheries:** In April 2017, Government of India notified the National Policy Marine Fisheries, 2017' (NPMF) which provides guidance for promoting 'Blue Growth initiatives' which focus on ushering 'Blue Revolution 1 (Neeli Kranti) by sustainable utilisation of fisheries wealth from the marine and other aquatic resources of the country for improving the lives and livelihoods of fishermen and their families.
- **National Oil-spill Disaster Contingency Plan (NOSDCP):** In 1993, NOSOCP allocated functional responsibilities to various ministries and departments for oilspill response in the Maritime Zones of India. The ports are responsible for oil-spill clean-up within port limits, and oil-handling agencies are responsible for oil-spill cleanup up to 500 metres around the oil-handling installations. The Coastal States and Union Territories are responsible for shoreline clean-up, whenever the oil -spill reaches the shore and threatens the shoreline.
- **Coast Guard Act, 1978:** States that the preservation and protection of marine environment and control of marine pollution is the function of the Indian Coast Guard (ICG). The ICG has been accordingly nominated in 1986 as the Central Coordinating Authority for oil-spill response in the Maritime Zones of India and Coast Guard officers have been empowered under the Merchant Shipping Act 1958, for taking necessary actions against polluters.

'Go Electric' Campaign Launched

Geography & Environment

Why in the news?

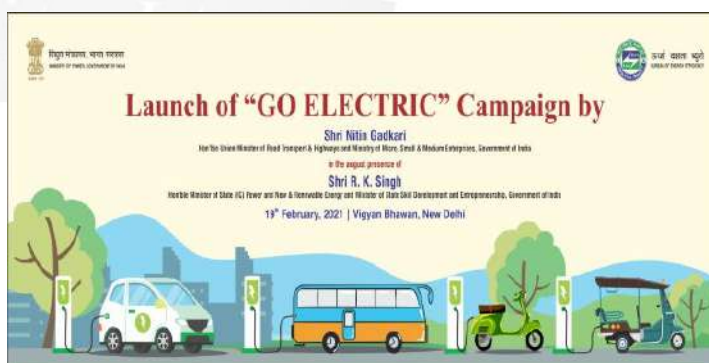
- The Union Minister for Road Transport & Highways launches the "Go Electric" Campaign.

Go electric campaign

- It is a campaign of the Bureau of Energy Efficiency (BEE) to promote and spread awareness on electric mobility.

Objectives:

- It will boost the confidence of electric vehicle manufacturers.
- Furthermore, it will spread awareness about the benefits of e-mobility and EV Charging Infrastructure in India.
- Lastly, the Go Electric Campaign will help in reducing the import dependence of our country in coming years.
- **Implementation:** BEE will provide technical support to the State Designated Agencies(SDAs) for its implementation on a state and national level.



Bureau of Energy Efficiency

- The Government of India set up the Bureau of Energy Efficiency (BEE) in March 2002 under the provisions of the Energy Conservation Act, 2001.
- It assists in developing policies and strategies with the primary objective of reducing energy intensity of the Indian economy.
- **Major Programmes:** State Energy Efficiency Index, Perform Achieve and Trade (PAT) scheme, The Standards & Labeling Programme, Energy Conservation Building Code.

Geography and Disaster Management**Atlantic Meridional Overturning Circulation (AMOC)****Geography & Environment****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.

Atlantic Meridional Overturning Circulation (AMOC)

- AMOC is sometimes referred to as the "Atlantic conveyor belt".
- It is one of the Earth's largest water circulation systems where ocean currents move warm, salty water from the tropics to regions further north, such as western Europe and sends colder water south.
- It aids in distributing heat and energy around the earth, as the warm water it carries releases heat into the atmosphere, and in absorbing and storing atmospheric carbon.

Importance of AMOC

- AMOC aids in distributing heat and energy around the earth (heat budget).
- Western Europe's climate is less harsh even in winters because of AMOC (Gulf Stream, North Atlantic Drift).
- It acts as a carbon sink by absorbing and storing atmospheric carbon.
- AMOC's carbon sequestration has significant implications for evolution of anthropogenic global warming.

Impact of AMOC slowdown

- AMOC last witnessed a slow down 15,000 to 17,000 years ago.
- It caused harsh winters in Europe, with more storms or a drier Sahel in Africa due to the downward shift of the tropical rain belt.
- The mere possibility that the AMOC could collapse should be a strong reason for concern in an era when human activity is forcing significant changes to the Earth's systems.

What is Indian Ocean's role?

- Fedorov and Hu's work involves climate mechanisms that may be shifting due to global warming.
- Using observed data and computer modelling, they have plotted out what effect such shifts might have over time.
- In this study, they looked at warming in the Indian Ocean.
- Their findings - As the Indian Ocean warms faster and faster, it generates additional precipitation.
- This draws more air from other parts of the world to the Indian Ocean, including the Atlantic.
- With so much precipitation in the Indian Ocean, there will be less precipitation in the Atlantic Ocean.
- Less precipitation will lead to higher salinity in the waters of the tropical portion of the Atlantic.
- This saltier water in the Atlantic, as it comes north via AMOC, will get cold much quicker than usual and sink faster.
- This would act as a jump start for AMOC, intensifying the circulation.
- Concern - It is not known how long this enhanced Indian Ocean warming will continue.
- If other tropical oceans' warming, especially the Pacific, catches up with the Indian Ocean, the advantage for AMOC will stop.

Glacial Lake Outburst Flood**Geography & Environment****Why in news?**

- Uttarakhand recently faced another Himalayan disaster. A massive glacial lake outburst flood happened at Chamoli in Uttarakhand. Experts are still not sure about the cause of this massive outburst.

What is GLOF?

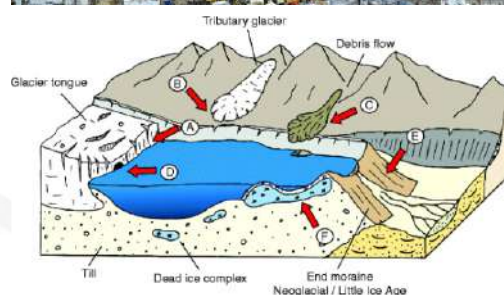
- A term used to describe a rapid release of a large volume of water retained in a glacial lake, regardless of the source, is 'Glacial lake outburst flood' (GLOF).

- A GLOF is a type of outburst flood that occurs when a glacial lake surrounding the dam collapses. A jökulhlaup is an occurrence similar to a GLOF, where a pool of water contained by a glacier melts or spills over the glacier. The dam can consist of glacier ice or a moraine in the terminal.



Failure may occur because of different causes, such as:

- Erosion, a water pressure accumulation.
- Rock landslide or heavy snow.
- Volcanic eruptions or earthquakes beneath the ice or under the ice.
- Displacement of water as a substantial part of an adjacent glacier collapses into a glacial lake.



Reasons for frequency of floods in UK

- To the best of our knowledge, on February 5 and 6, there was good sunshine and the fresh snow & ice began to melt.
- The mass of fresh snow, ice and water began to move down a steep slope in a small mountain stream called Trishuligad.
- That valley is full of rocks, boulders and as the mass moved downward, it gathered energy and a lot of matter, solid matter.
- By the time it came down to the base which was the Rishi Ganga river, it had become an avalanche. It caused a lot of destruction as it hit the river.
- When you have a mass like this, if it strikes a barrier on the way it can normally smash that barrier.
- And each barrier that it smashes it gains more energy, moves with greater velocity downstream, and picks up more material from the bed of the river.
- So first it smashed into a bridge, then it hit the dam then went into the Dhauli Ganga valley and there it hit the barrage of the Tapovan Vishnugad project of 520 megawatts. Literally, within seconds it destroyed that and moved downstream.
- Scores of people are still missing in the wave of water, silt and debris that swamped the rivers and filled tunnels in the Tapovan power project, although the immediate rescue of nearly 15 people by the ITBP, the Army and other agencies brings some cheer.
- The rescuers face a challenging environment as they try to locate more survivors and bring relief supplies to paralysed communities. These immediate measures are important, along with speedy compensation to affected families.

India gets its first Centre for Wetland Conservation and Management

Geography & Environment

Why in the news?

- The Ministry of Environment, Forest and Climate Change has announced the establishment of a Centre for Wetland Conservation and Management (CWCM).

Centre for Wetland Conservation and Management

- The Centre for Wetland Conservation and Management (CWCM) will be set up by the central government in Chennai, Tamil Nadu.
- This conservation centre would be a part of the National Centre for Sustainable Coastal Management. This national centre is an institution under the Ministry of Environment, Forests and Climate Change.
- The CWCM will play a significant role to design and implement the regulatory frameworks and policies. It will also help in monitoring, management planning & targeted research in a bid to conserve the wetlands.
- The conservation centre will also act as a knowledge hub.
- It will enable the exchange between the wetland authorities in States or Union Territories, managers, wetland researchers, practitioners, policy-makers and users.
- The centre will further help in building the networks and partnerships with the relevant international and national agencies.

Importance of wetland

- Wetlands are highly productive ecosystems that provide the world with nearly two-thirds of its fish harvest.
- Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects.
- Wetlands' microbes, plants and wildlife are part of global cycles for water, nitrogen and sulphur. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide.
- Wetlands function as natural barriers that trap and slowly release surface water, rain, snowmelt, groundwater and flood waters. Wetland vegetation also slow the speed of flood waters lowering flood heights and reduces soil erosion.
- Wetlands are critical to human and planet life. More than one billion people depend on them for a living and 40% of the world's species live and breed in wetlands.
- Wetlands are a vital source for food, raw materials, genetic resources for medicines, and hydropower.
- They play an important role in transport, tourism and the cultural and spiritual well-being of people.
- They provide habitat for animals and plants and many contain a wide diversity of life, supporting plants and animals that are found nowhere else.
- Many wetlands are areas of natural beauty and promote tourism and many are important to Aboriginal people.
- Wetlands also provide important benefits for industry. For example, they form nurseries for fish and other freshwater and marine life and are critical to commercial and recreational fishing industries.

Tree City of the World

Geography & Environment

Why in news?

- The Arbor Day Foundation and the UN's Food and Agriculture Organisation have recognised Hyderabad as '2020 Tree City of the World'.

About Tree Cities of the World Programme:

- **Criteria:** To receive recognition, a town or city must meet five core standards:
- **Establish Responsibility:** The city must have a written statement by city leaders. It must clearly delegate responsibility for the care of trees within its municipal boundary to either a staff member, a city department, or a group of citizens—called a Tree Board.
- **Set the Rules:** The city should have a law or an official policy that governs the management of forests & trees.
- **Know What You Have:** The city should have an updated inventory or assessment of the local tree resource. It will be helpful in effective long-term planning for planting, care, and removal of city trees.
- **Allocate the Resources:** The city must have a dedicated annual budget for the implementation of the tree management plan.
- **Celebrate Achievements:** The city holds an annual celebration of trees. It will raise awareness among residents, citizens and staff members who carry out the city tree programme.



Why was Hyderabad selected as a Tree City?

- Hyderabad is selected as a Tree City because of its initiatives like Haritha Haram programme and Urban Forest Parks plan.
- Haritha Haram is a flagship program of the state government for large-scale plantations across the state to increase the green cover.
- Significance: Hyderabad is the only city from India to get recognition as a Tree City. With this recognition, Hyderabad joins 120 other cities from 23 countries including the US, the UK, Canada, and Australia.

Making Peace with Nature: UNEP Report

Geography & Environment

Why in news?

- The United Nations Environment Programme (UNEP) has released the 'Making Peace with Nature' report, ahead of the fifth session of the UN Environment Assembly (UNEA-5).
- The Report explains how climate change, biodiversity loss and pollution add up to three self-inflicted planetary emergencies that are closely interconnected and put the well-being of current and future generations at unacceptable risk.

Findings:

- Climate Change:** Climate change is increasing the chances of the Arctic Ocean being ice-free in summer, further disrupting ocean circulation and Arctic ecosystems.
- Climate change drives changes in wildfires and water stress and combines with biodiversity loss to degrade land and enhance drought in some regions.
- More than one million of the estimated 8 million plant and animal species are increasingly at risk of extinction.
- Coral reefs are particularly vulnerable to climate change and are projected to decline to 10-30% of their former cover at 1.5°C of warming and to less than 1% at 2°C of warming, compromising food provision, tourism and coastal protection.
- Every year, nine million people die prematurely due to pollution.
- Up to 400 million tons of heavy metals, solvents, toxic sludge and other industrial wastes enter the world's waters annually.
- Human prosperity is strained by widening inequalities, whereby the burden of environmental decline weighs heaviest on the poor and vulnerable and looms even larger over today's youth and future generations.
- Inequity in economic growth has left 1.3 billion people poor.

Seismic Hazard map of the Eastern Himalaya

Geography & Environment

Why is this in News?

- Recently, scientists have found the first geological evidence of an earthquake on the border of Assam and Arunachal Pradesh, documented as the Sadiya earthquake in history.

Findings of the report

- Scientists from Wadia Institute of Himalayan Geology (WIHG) carried out a mega trench excavation at Himebasti village, Arunachal Pradesh where the most recent event records the imprints of the 1697 Sadiya earthquake and analysed it with modern geological techniques.
- Scientists found large tree trunks embedded in the youngest flood deposits at the exit of the Subansiri River (Sadiya town is located roughly 145 km southeast of Subansiri river), suggesting the post-seismic aggradation of the river following an array of aftershocks till six months.
- Aggradation** is the term used in geology for the increase in land elevation due to deposition of sediment.
- Aftershocks** are earthquakes that follow the largest shock of an earthquake sequence. They are smaller than the mainshock and within 1-2 rupture lengths distance from the mainshock.

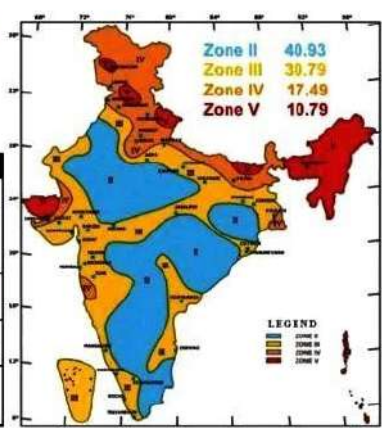
Significance of finding

- Studying the past earthquakes help to determine the seismic potential of the region. This helps in mapping the earthquake hazard of the region and enables syncing the development activities accordingly.

Seismic Zone Map of India: -2002

About **59 percent** of the land area of India is liable to seismic hazard damage

Zone	Intensity
Zone V	Very High Risk Zone Area liable to shaking Intensity IX (and above)
Zone IV	High Risk Zone Intensity VIII
Zone III	Moderate Risk Zone Intensity VII
Zone II	Low Risk Zone VI (and lower)



- Arunachal Pradesh, being near the Indo-China Border, and sometimes centre of dispute regarding its ownership, is strategically important.
- A number of development initiatives like constructing roads, bridges and hydropower projects are being undertaken, therefore there is an urgent need for understanding the pattern of seismicity in this region.

Seismic Hazard Map of India

- India is one of the highly earthquake affected countries because of the presence of tectonically active young fold mountains, Himalayas.
- India has been divided into four seismic zones (II, III, IV, and V) based on scientific inputs relating to seismicity, earthquakes occurred in the past and tectonic setup of the region.
- Previously, earthquake zones were divided into five zones with respect to the severity of the earthquakes but the **Bureau of Indian Standards (BIS)** grouped the country into four seismic zones by unifying the first two zones.
- BIS is the official agency for publishing the seismic hazard maps and codes.
- **Seismic Zone II:**
 - **Area with minor damage earthquakes** corresponding to intensities V to VI of MM scale (MM-Modified Mercalli Intensity scale).
- **Seismic Zone III:**
 - **Moderate damage** corresponding to intensity VII of MM scale.
- **Seismic Zone IV:**
 - **Major damage** corresponding to intensity VII and higher of MM scale.
- **Seismic Zone V:**
 - Area determined by presence of certain major fault systems and is seismically the most active region.
 - **Earthquake zone V is the most vulnerable to earthquakes**, where historically some of the country's most powerful shocks have occurred.
 - Earthquakes with magnitudes in excess of 7.0 have occurred in these areas, and have had intensities **higher than IX**.

NDMA Guidelines on Flash Floods

Geography & Environment

Why is this in news?

- A **Glacial Lake Outburst Flood (GLOF)** is suspected to have **caused the flash floods in Chamoli district of Uttarakhand**. The NDMA guidelines suggest that risk reduction can be done by **identifying and mapping potentially dangerous lakes, taking structural measures to prevent their sudden breach**, and establishing mechanisms to save lives and property in times of a breach.

Glacial Lake Outburst Flood (GLOF):

Meaning:

- A GLOF refers to the flooding that occurs **when the water dammed by a glacier or a moraine** (accumulations of dirt and rocks fallen onto the glacier surface) **is released suddenly**.
- When glaciers melt, the water in glacial lakes accumulates behind loose, natural "glacial/moraine dams" made of ice, sand, pebbles and ice residue.
- Unlike earthen dams, the weak structure of the moraine dam **leads to the abrupt breach of the dam on top of the glacial lake** which could cause flash floods in the downstream areas.

Causes:

- According to NDMA, **glacial retreat due to climate change** occurring in most parts of the **Hindu Kush Himalaya** has given rise to the **formation of numerous new glacial lakes**, which are the **major cause of GLOFs**.

Glacial Lakes:

• About:

- Glacial lakes are **typically formed at the foot of a glacier**.
- As glaciers move and flow, they erode the soil and sediment around them, leaving depressions and grooves on the land. Meltwater from the glacier fills up the hole, making a lake.

• Types:

- Lakes form when meltwater ponds, and this can happen on the ice surface (**supraglacial lakes**), in front of the ice (**proglacial lakes**), or even underneath the ice (**subglacial lakes**).



• Impact:

- Glacier lakes can **affect ice flow** by reducing friction at the ice-bed interface, encouraging basal sliding.
- They can **change the albedo of the ice surface**, encouraging more surface melt.
- Proglacial lakes **cause calving**, which affects mass balance and can decouple mountain glaciers from climate.
- Glacier lakes can be hazardous; moraine and ice dams can fail, **causing catastrophic glacier lake outburst floods** or jokulhlaups.

Guidelines on Risk Reduction:

• Identifying Potentially Dangerous Lakes:

- Potentially dangerous lakes **can be identified** based on field observations, records of past events, geomorphologic and geotechnical characteristics of the lake/dam and surroundings, and other physical conditions.

• Use of Technology:

- Promoting use of **Synthetic-Aperture Radar imagery** (a form of radar that is used to create two-dimensional images) **to automatically detect changes in water bodies**, including new lake formations, during the monsoon months.
- Methods and protocols could also be developed to **allow remote monitoring of lake bodies from space**.

• Training Local Manpower:

- Apart from pressing specialised forces such as National Disaster Response Force (NDRF), **ITBP** and the Army, NDMA has emphasised the need for **trained local manpower**.
- It has been observed that over **80% of search and rescue is carried out by the local community** before the intervention of the state machinery and specialised search and rescue teams.
- **The local teams could also assist in planning** and setting up emergency shelters, distributing relief packages, identifying missing people, and addressing the needs for food, healthcare, water supply etc.

• Comprehensive Alarm Systems:

- Besides classical alarming infrastructure consisting of acoustic alarms by sirens, modern communication technology using cell and smartphones can complement or even replace traditional alarming infrastructure.

• Channelling Potential Floods:

- To manage lakes structurally, the NDMA recommends **reducing the volume of water with methods such as controlled breaching**, pumping or siphoning out water, and making a tunnel through the moraine barrier or under an ice dam.

• Uniform Codes for Construction Activity:

- Developing a broad framework for **infrastructure development, construction and excavation** in vulnerable zones.
- There is a need to accept **procedures for land use planning** in the GLOF prone areas.

• Enhancing Early Warning Systems (EWS):

- The number of implemented and operational GLOF EWS is very small, even at the global scale.
- In the Himalayan region, there are at **three reported instances** (two in Nepal and one in China) of implementation of sensor- and monitoring- based technical systems for GLOF early warning.

Chamoli Disaster

Geography & Environment

Context

- A major disaster struck the Himalayan state of Uttarakhand recently. A glacier broke after an avalanche in the Joshimath area of the state's Chamoli district.

What is a glacier outburst? What causes this disaster?

- Glacial lake outburst floods (GLOF) is being considered to be the most likely trigger for this event.
- GLOF is a reference to flooding caused downstream due to a breach in a glacial lake.
- Retreating glaciers, like several in the Himalayas, usually result in the formation of lakes at their tips, called **proglacial lakes**, often bound only by sediments and boulders.
- 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.
- GLOF events are not unusual, but their impact depends on the size of the proglacial lake that burst, and its location.
- In the Hindu Kush Himalaya, moraine-dammed glacial lakes are common and numerous GLOF events have been traced back to the failure of moraine dams.

Why made the Himalayas so prone to disasters?

- There are four major faults in the Himalayas, including the **Himalayan Frontal Fault** and the **Trans Himadri Fault**. Multiple faults have developed parallel to these four.
- This branching and sub-branching mean that this is a zone of faults. The movement of thousands of years means that all rock formations are broken and crushed.
- Water penetrates deep into the interior and sabotages the rocks from the inside. It washes away the base of the rocks.
- Even if smaller ruptures occur along with short segments of the mountains, stress builds up along the faults. That accumulated stress eventually triggers an enormous earthquake.
- Thus the number of landslides is high in the region. Landslides and earthquakes will continue to happen in the region because of the movement of the plates in the Himalayas.

How rapidly the Himalayas is losing its ice?

- As per the first-ever assessment of climate change impacts on the **Hindu Kush Himalayan (HKH)** region, the number of glaciers in the Himalayan area has increased in the last five decades.
- This is an indicator of how severe glacier melting has been due to global warming.
- The increase in the number of glaciers is primarily due to glacier fragmentation.
- Glacier fragmentation** refers to the splitting of big glaciers into smaller ones.
- And this is happening due to consistent loss in areas the glaciers occupy.
- Since the 1950s, only reductions have been observed in glacier area (or shrinkage).
- Based on a compilation of area change studies, eastern Himalayan glaciers have tended to shrink faster than glaciers in the central or western Himalayas.
- In the northern slopes of the Himalayas, glaciers are receding.

What can be the reasons behind the recent disaster?

- Low snowfall:** Reduced snowfall this winter due to climate change may have played a major part in the glacier bursts. The glacial outbursts are also related to global warming. As the temperature soars during summers, the glaciers retreat, leaving behind water-filled, unstable moraine-dammed lakes.
- Large hydropower projects:** The entire State of Uttarakhand is categorized as falling in **Zone-IV and V** of the earthquake risk map of India. Despite the threat of such calamity, large hydropower projects are in vogue in the state. The potential of the cumulative effect of multiple such projects has turned out to be more environmentally damaging than sustainable, given the current policy of the state government of pursuing hydro-power projects indiscriminately.

Fire in Simlipal National Park

Geography & Environment

Why in news?

- The incident of massive fire spreading through vast tracts of Asia's second-largest biosphere Simlipal National Park in the Mayurbhanj district of Odisha has once again brought the focus on global warming and climate change issues.



Ecological diversity of the Park

- Similipal is a national park, tiger reserve and part of a biosphere reserve which lies in the eastern end of the eastern ghat.
- Similipal is the abode of 94 species of orchids and about 3,000 species of plants. The identified species of fauna include 12 species of amphibians, 29 species of reptiles, 264 species of birds and 42 species of mammals, all of which collectively highlight the biodiversity richness of Similipal. Sal is a dominant tree species. Such fire incident threatens the life of these species causing irreversible damage.

Human Causes

- 90% of all wildfires are caused by humans.
- Human acts of carelessness such as leaving campfires unattended and negligent discarding of cigarette butts result in wildfire disasters every year.
- Accidents, deliberate acts of arson, burning of debris, and fireworks are the other substantial causes of wildfires.

Natural Causes

- Lightning:** A fairly good number of wildfires are triggered by lightning.
- Volcanic Eruption:** Hot magma in the earth's crust is usually expelled out as lava during a volcanic eruption. The hot lava then flows into nearby fields or lands to start wildfires.
- Temperature:** High atmospheric temperatures and dryness offer favourable conditions for a fire to start.
- Climate Change** is causing a gradually increasing surface air temperature, which can propagate forest fires.
- Weather Components:** Warmer temperatures and lower humidity cause vapour pressure deficit to increase which can dry fuels rapidly and allow fires to grow very fast

Forest Fire Prevention and Management in India

- Forests are a subject in the **concurrent list (brought under this list through 42nd Constitutional Amendment Act, 1976)** of the Seventh Schedule of the Indian Constitution.
- National Action Plan on Forest Fires (NAPFF-2018)** of Ministry of Environment, Forest and Climate Change (MoEFCC).
- MoEFCC also provides forest fire prevention and management measures under the **Centrally Sponsored Forest Fire Prevention and Management (FPM) scheme**.
- The FPM **replaced the Intensification of Forest Management Scheme (IFMS) in 2017**. By revamping the IFMS, the FPM has **increased the amount dedicated for forest fire work**.
- Funds allocated under the FPM are according to a center-state cost-sharing formula, with a **90:10 ratio of central to state funding** in the Northeast and Western Himalayan regions and a **60:40 ratio for all other states**.
- It also provides the states the flexibility to direct a portion of the **National Afforestation Programme (NAP)** and **Mission for Green India (GIM)** funding toward forest fire work.

Impact of forest fire

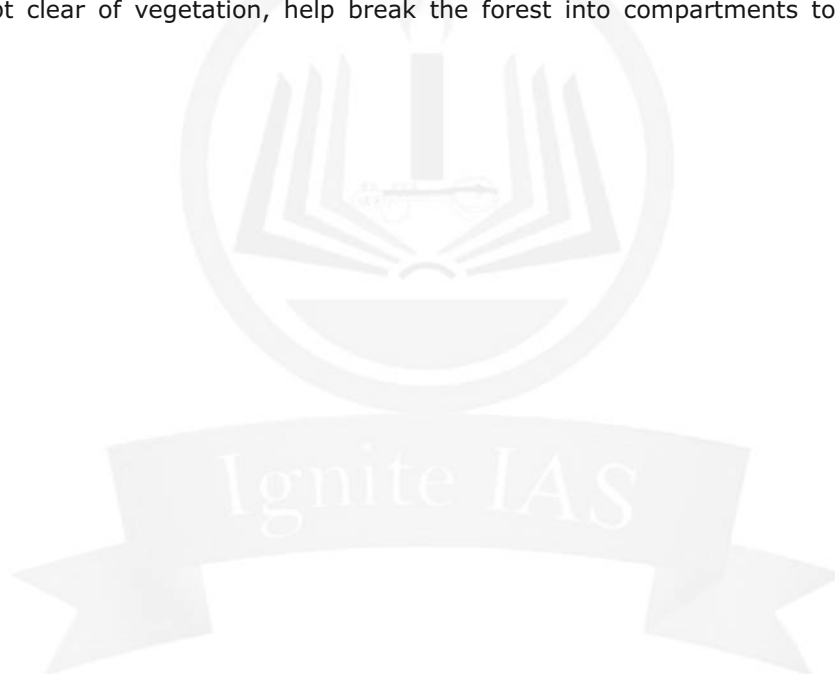
- The sudden onset of summer from February acted as a perfect fuel for the rise in a wildfire. The forest, known for its unique microclimate, keeps getting intermittent rainfall at this time of the year. Such showers act as natural fire controllers, but when prolonging dry spells continue for more than two-three weeks, it can prove to be a disaster which seems to be the case this time. Man-made factors have also been attributed to the increase.

How prone are the Indian forests to fire?

- Reports from the Forest Survey of India suggest that forest fires are not only an old phenomenon but also that their frequency has increased over the years. The Forest Survey of India (FSI) detected 2,77,758 forest fire points from 2004-2017 across the country in a 2019 report. It further states that 665 grids are extremely fire prone in the country, making 3.89 percent of the total forest cover.

Preventing forest fires

- Natural rainfall continues to be the main method for controlling such fires. Forecasting fire-prone days and including community members to mitigate incidents of fire, creating fire lines, clearing sites of dried biomass, and crackdown on poachers are some of the methods to prevent fires. The forest fire lines which are strips kept clear of vegetation, help break the forest into compartments to prevent fires from spreading.



Parliamentary Standing Committee on reforms in Justice System

Polity & Governance

Why in news?

- A Parliamentary Standing Committee constituted to scrutinise the policies and performance of the Ministry of Law and Justice tabled its report recently.

Details of the report

- About 12% posts in the Supreme Court of India and 40% posts of judges in the High Courts are vacant at the moment. The highest numbers of judges' vacancies are in the High Court of Allahabad (64), Calcutta (40) and Punjab and Haryana (37). This is being seen as a major reason for slow dispensation of justice in the country.

Report

- The Committee has expressed concern that there was no improvement in appointment of High Court Judges in the last one year and instead the vacancy positions have increased from 37 to 39 per cent. It noted that the Memorandum of Procedure between the Executive and the Judiciary is yet to be finalised, leading to delay in filling the vacancies in the High Courts. It has suggested coordinated response from both the fronts to fill these vacancies with utmost priority.

Increasing the tenure

- Yes, the committee seems to favour this. In discussing the huge case pendency before courts, the Committee's members also opined that the age of retirement for High Courts judges be raised from 62 to 65 years so that there is a uniform age of retirement in both Supreme Court and High Courts. It has also suggested that the issue of huge case pendency at all levels of the judicial hierarchy can be dealt with by increasing the number of working days for judges.

Regional benches

- The 18th Law Commission, in its 229th report, had recommended for a Constitution Bench to deal with constitutional and other allied issues, and four Cassation Benches be set up in Northern zone at Delhi, Southern zone at Chennai/Hyderabad, Eastern zone at Kolkata and Western zone at Mumbai to deal with all appellate work.

Advantages

- Having benches of the Supreme Court in other parts of the country will help provide better access to justice to the poor, for whom it is impossible to visit the National Capital. Additional considerations of travel, hiring separate advocates, delay in hearings and being caught in the vicious cycle of justice system hampers many to file appeals to the Supreme Court. This is visible from the smaller number of appeals to the Supreme Court from the South and North Eastern parts of the country.

E-Court projects

- The Apex Court adopted the e-courts projects in the wake of the pandemic enabling proceedings of the court through online platforms. The Committee opined that the true potential of e-Courts project is yet to be realized. It, therefore, recommended the use of advanced technologies, particularly Blockchain and Artificial Intelligence technology, to supplement the judicial process and help in reducing judicial delays.

Time to revisit the 50% cap on Reservations

Polity & Governance

Why in news?

- The Supreme Court recently said it would also hear arguments on the issue of whether the landmark 1992 judgement in the Indra Sawhney case should be re- looked at and referred to a larger bench. The verdict in the case of the Indra Sawhney vs Union of India— also known as the Mandal verdict — capped reservations at 50 percent.

Background of this judgement

- The genesis of the case lies in 1980 when the Second Backward Classes Committee, headed by BP Mandal, submitted its report. The report recommended 27 percent reservation for Other Backward Classes (OBCs)

and 22.5 percent for the Scheduled Castes/Scheduled Tribes. The Central government issued an office memorandum (OM), providing 27 percent vacancies for Socially and Educationally Backward Classes to be filled by direct recruitment. The announcement sparked large-scale protests across the country. Another memorandum notifying an additional reservation of 10 percent for other economically backward section was also issued subsequently.

What was the Court's ruling in the case?

- A nine judge bench headed by Justice BP Jeevan Reddy heard the case in the Supreme Court. The Supreme Court, in a 6:3 verdict, upheld the 27 percent quota for SEBCs, but struck down the 10 percent quota based on economic criteria. It held that "a backward class cannot be determined only and exclusively with reference to economic criterion". It also told the Centre to evolve to exclude the 'creamy layer' from the ambit of reservation for backward classes.

What is the 50% rule of Indra Sawhney case?

- The judgment laid down that the extent of reservation should not cross the 50 percent limit, unless a special case was made out for extraordinary situations and
- peculiar conditions to relax the rule. The court however, did not explain why the cap should be set at 50%. It termed the 50% cap as "reasonable" and said that any reservation beyond 50% would be liable to be struck down.

How can the reservation over 50% be justified according to the Court?

- The apex Court in Indra Sawhney held that every reservation over and above 50% must be based on valid grounds which will have to be specifically made out. The adequacy of representation is not to be determined merely on the basis of the overall numerical strength of the backward classes in the services. For determining the adequacy, their representation at different levels of administration and in different grades has to be taken into consideration. In the words of the court, 'It is the effective voice in the administration and not the total number which determines the adequacy of representation.'

Why does Tamil Nadu have 69% reservation?

- Tamil Nadu ensured that the Supreme Court's judgement did not weaken its reservation system, which was more extensive than anywhere else in India. The state's Assembly passed the Tamil Nadu Backward Classes, Scheduled Castes and Scheduled Tribes (Reservation of Seats in Educational Institutions and Appointments or Posts in the Services under the State) Act, 1993 to keep its reservation limit intact at 69%. The law was subsequently included into the Ninth Schedule of the Constitution through the 76th Constitution Amendment passed by Parliament in 1994.

Has the 50% cap been violated in other places in India?

- Maharashtra granted 16 percent reservation to the Maratha community in 2018 over and above the existing quotas. Though, the Bombay High upheld the law, it reduced the quota limit to 12 percent in employment and 13 percent in admissions. Several other states have also exceeded the 50 percent limit on reservation including Haryana (67 percent) and Telangana (62 percent). The Constitutional Amendment providing 10% reservation to Economically Weaker Sections has also brought the level of reservation to 60% now.

Government's New Social Media Guidelines

Polity & Governance

Why in News?

- Recently, the government has notified Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021. These new rules broadly deal with social media and over-the-top (OTT) platforms. These rules have been framed in exercise of powers under section 87 (2) of the Information Technology (IT) Act, 2000 and in supersession of the earlier Information Technology (Intermediary Guidelines) Rules 2011.

Why we need such rules ?

- India at present doesn't have any specific rules to govern the digital news media and OTT platforms. At present these are governed under Section 79 of the IT Act. But it was not able to effectively control the misuse of data over social media and digital platforms. The reasons were,

1. Non-liability of Intermediary:

- Section 69 of the IT Act gives power to the government to issue directions "to intercept, decrypt or monitor...any information generated, transmitted, received or stored" in any digital equipment.
- The Intermediaries are required to preserve and retain specified information. Further, they have to obey the directions issued by the government from time to time.
- By adhering to government rules, they will **get protected from legal action for any user-generated content under Section 79**. Section 79 states that an intermediary (Digital media and OTTs) shall not be liable for any third party information, data, or communication
- 2. Further, the **user base of big companies** has **expanded rapidly**. Currently there are over 53 crore WhatsApp users, over 44.8 Crore YouTube users and 41 Crore Facebook users.
- 3. The government **rejected the Self-regulatory toolkit** submitted by 17 OTT Platforms. The government rejected them for reasons like lack of independent third-party monitoring, the tool-kit did not have a well-defined Code of Ethics, etc.
- This induced the government to come up with new rules under the IT Act, 2000. The IT Rules 2011 got replaced with the new **IT Rules 2021**.

Details of the new rules

• The new rules, therefore, envisage three types of entities:

- There are the 'intermediaries' within the traditional, section 2(w) meaning of the IT Act. This would be the broad umbrella term for all entities that would fall within the ambit of the rules.
- There are the 'social media intermediaries' (SMI), as entities, which enable online interaction between two or more users.
- The rules identify 'significant social media intermediaries' (SSMI), which would mean entities with user-thresholds as notified by the Central Government.

SOCIAL MEDIA

- Identify 'first originator' of content that authorities consider anti-national
- Appoint grievance officer, resolve complaints in 15 days
- File monthly compliance report on complaints received, action taken

DIGITAL NEWS

- Follow Press Council of India, Cable TV Networks (Regulation) Act norms.
- Self-regulatory bodies to oversee adherence to Code of Ethics
- I&B Ministry to form panel, oversight mechanism

OTT PLATFORMS

- Self-classify content into five age-based categories: U (universal), U/A 7+ (years), U/A 13+, U/A 16+, and A.

- Parental locks for any content classified as U/A 13+ or above.
- Age verification mechanism for content classified as 'A' (adult)

New Guidelines for Social Media/Intermediaries:

• Categories of Social Media Intermediaries:

- Based on the number of users, on the social media platform intermediaries have been divided in two groups:
 - Social media intermediaries.
 - Significant social media intermediaries.

• Due Diligence to be Followed by Intermediaries:

- In case, due diligence is not followed by intermediary, safe harbour provisions will not apply to them.
- The 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 is Mandatory:

- Intermediaries shall appoint a Grievance Officer to deal with complaints and share the name and contact details of such officers.
- Grievance Officer shall acknowledge the complaint within twenty- four hours and resolve it within fifteen days from its receipt.

• Ensuring Online Safety and Dignity of Users:

- Intermediaries shall remove or disable access within 24 hours of receipt of complaints of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc.
- Such a complaint can be filed either by the individual or by any other person on his/her behalf.

• Additional Due Diligence for the Significant Social Media Intermediaries:

- Appointments: Need to appoint Chief Compliance Officer, a Nodal Contact Person and a Resident Grievance Officer, all of whom should be resident in India.

- Compliance Report: Need to publish a monthly compliance report mentioning the details of complaints received and action taken on the complaints as well as details of contents removed proactively.
- **Enabling Identity of the Originator:**
 - Significant social media intermediaries providing services primarily in the nature of messaging shall enable identification of the first originator of the information.
 - Required only for the purposes of prevention, detection, investigation, prosecution or punishment of an offence related to sovereignty and integrity of India, the security of the State, friendly relations with foreign States, or public order,
 - Or of incitement to an offence relating to the above or in relation with rape, sexually explicit material or child sexual abuse material punishable with imprisonment for a term of not less than five years.
- **Removal of Unlawful Information:**
 - An intermediary upon receiving actual knowledge in the form of an order by a court or being notified by the Appropriate Govt. or its agencies through authorized officer 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.

Rules for News Publishers and OTT Platforms and Digital Media:

- **For OTT:**
 - **Self-Classification of Content:**
 - The 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).
 - **Parental Lock:**
 - 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".
 - **Display Rating:**
 - Shall prominently display the classification rating specific to each content or programme together with a content descriptor informing the user about the nature of the content, and advising on viewer description (if applicable) at the beginning of every programme enabling the user to make an informed decision, prior to watching the programme.
- **For Publishers of News on Digital Media :**
 - They would be required to observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act 1995 thereby providing a level playing field between the offline (Print, TV) and digital media.
- **Grievance Redressal Mechanism:**
 - A three-level grievance redressal mechanism has been established under the rules with different levels of self-regulation.
 - Level-I: Self-regulation by the publishers;
 - Level-II: Self-regulation by the self-regulating bodies of the publishers;
 - Level-III: Oversight mechanism.
- **Self-regulation by the Publisher:**
 - Publisher shall appoint a Grievance Redressal Officer based in India who shall be responsible for the redressal of grievances received by it.
 - The officer shall take decision on every grievance received by it within 15 days.
- **Self-Regulatory Body:**
 - There may be one or more self-regulatory bodies of publishers.
 - Such a body shall be headed by a retired judge of the SC, a High Court or independent eminent person and have not more than six members.
 - Such a body will have to register with the Ministry of Information and Broadcasting.
 - This body will 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.
- **Oversight Mechanism:**
 - Ministry of Information and Broadcasting shall formulate an oversight mechanism.
 - It shall publish a charter for self-regulating bodies, including Codes of Practices. It shall establish an Inter-Departmental Committee for hearing grievances.

Securities Appellate Tribunal (SAT) and Securities and Exchange Board of India (SEBI)

Science and Technology

Why in News?

- Recently, the Securities Appellate Tribunal (SAT) stayed the order passed by Securities and Exchange Board of India (SEBI) that had put a one-year ban on a retail company Chairperson and some other promoters from the securities market.

About Securities Appellate Tribunal:

- SAT is a statutory body established under the provisions of Section 15K of the SEBI Act, 1992 with its Headquarters at Mumbai.

Composition:

- SAT consists of a Presiding Officer and Two other members.
- The Presiding officer of SAT shall be appointed by the Central Government in consultation with the Chief Justice of India or his nominee.

Powers:

- It has the same powers as vested in a civil court. Further, if any person feels aggrieved by SAT's decision or order can appeal to the Supreme Court.

Functions:

- To hear and dispose of appeals against orders passed by the SEBI or by an adjudicating officer under the SEBI Act, 1992.
- To hear and dispose of appeals against orders passed by the Pension Fund Regulatory and Development Authority (PFRDA).
- To hear and dispose of appeals against orders passed by the Insurance Regulatory Development Authority of India (IRDAI).

About Securities and Exchange Board of India (SEBI)

- SEBI is a statutory body established in 1992 in accordance with the provisions of the SEBI Act, 1992.
- Initially, SEBI was a non-statutory body. In April, 1988 the SEBI was constituted as the regulator of capital markets in India under a resolution of the Government of India.
- The term capital market refers to facilities and institutional arrangements through which long-term funds, both debt and equity are raised and invested.

Headquarters:

- The headquarters of SEBI is situated in Mumbai.
- The regional offices of SEBI are located in Ahmedabad, Kolkata, Chennai and Delhi.

Composition:

- All decisions taken by SEBI are collectively taken by its Board that consists of a Chairman and eight other members.
- SEBI also appoints various committees, whenever required to look into the pressing issues of that time.

Function:

- To protect the interests of investors in securities and to promote and regulate the securities market.
 - Securities are tradable financial instruments used to raise capital in public and private markets.
 - There are primarily three types of securities: equity—which provides ownership rights to holders; debt—essentially loans repaid with periodic payments; and hybrids—which combine aspects of debt and equity.
- Registering and regulating the working of stock brokers, merchant bankers, underwriters, portfolio managers, investment advisers and such other intermediaries who may be associated with securities markets in any manner.

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

Issues associated with news rule

1. The New IT rules were not put for public consultation. Especially those related to regulations of online news portals and video streaming platforms. For example, IMAI(Internet and Mobile Association of India) was not consulted on the proposed OTT guidelines.
2. The rules allow the government to **enforce a traceability mechanism**. This simply means a threat to the user's privacy. It will hamper the end-to-end encryption of platforms like WhatsApp.
3. As the new rules **curtail free speech** on digital platforms, there will be a sense of fear among the users.
4. The IT Act doesn't cover content authors and creators like news media. But rules have included them. This **provides discretionary powers to the government**.
5. The proposed oversight mechanism **doesn't have any legislative backing** which is generally given to other regulators.
 - For example, the Telecom Regulatory Authority of India Act provides powers to TRAI (Telecom Regulatory Authority of India). Under the rules, the regulation will be done by a body composed of bureaucrats who might perform discretionary censorship thereby **enhancing political control**.

Suggestions

- The government should consult with appropriate stakeholders. This will improve the inclusivity and acceptability of the new IT rules.
- The focus should be on strengthening citizen's rights by learning from successful global examples like OFCOM (OFCOM is a communication regulator in the UK).
- The government must have a mindset of flexibility and agility to support the rules adequately.
- OTT platforms while regulating the content have to strike a balance. Especially between the diverse Indian society and the beliefs of viewers in India.

Places of Worship Act

Polity & Governance

Why in NEWS ?

- Sunni Waqf Board seeks implementation of Place of Worship Act amid calls to reclaim Kashi, Mathura.

• About

- Expressing concern over Kashi and Mathura temples being dragged into legal dispute a year after the Supreme Court's Ayodhya verdict, the Sunni Central Waqf Board has sought strict implementation of the Places of Worship Act.
- A plea filed by a Hindu organisation in June had challenged Section 4 of the law in a bid to open the litigation route to reclaim disputed religious sites other than the Ram Janmabhoomi in Ayodhya.
- The Vishwa Bhadra Pujari Purohit Mahasangh's plea assumes significance in the case of Kashi and Mathura where two disputed mosques stand.



Supreme Court's observations

- After analysing the Act, the Supreme Court said: "The law imposes two unwavering and mandatory norms:
- i) **Section 3:** A bar is imposed by Section 3 on the conversion of a place of worship of any religious denomination or a section of a denomination into a place of worship either of a different section of the same religious denomination or of a distinct religious denomination.
 - The **expression 'place of worship'** is defined in the broadest possible terms to cover places of public religious worship of all religions and denominations and;

ii) Religious character: The law preserves the religious character of every place of worship as it existed on 15 August 1947.

- The court said that the Places of Worship Act "protects and secures the fundamental values of the Constitution."
- Its norms bind those who govern the affairs of the nation at every level.
- Those norms implement the Fundamental Duties under Article 51A and are hence positive mandates to every citizen as well.
- The court more pithily stated: "Historical wrongs cannot be remedied by the people taking the law in their own hands. In preserving the character of places of public worship, Parliament has mandated in no uncertain terms that history and its wrongs shall not be used as instruments to oppress the present and the future."

Importance of the Act:

- The Places of Worship Act is intrinsically related to the obligations of a secular state.
- Equality of all religions.
- An affirmation of the solemn duty which was cast upon the State to preserve and protect the equality of all faiths as an essential constitutional value, a norm which has the status of being a basic feature of the Constitution.

Objective of the Act

- To freeze the status of any place of worship as it existed on August 15, 1947.
- To provide for the maintenance of the religious character of such a place of worship as on that day.
- To pre-empt new claims by any group about the past status of any place of worship and attempts to reclaim the structures or the land on which they stood.
- The Act also imposes a positive obligation on the State to maintain the religious character of every place of worship as it existed at the time of Independence.
- This legislative obligation on the State to preserve and protect the equality of all faiths is an essential secular feature and one of the basic features of the Indian Constitution.

Exceptions

- These provisions will not apply to monuments and sites covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958; a suit that has been finally settled or disposed of; and any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.
- Section 5 says that the Act does not apply to the place of worship commonly referred to as Ram Janmabhoomi-Babri Masjid in Ayodhya.

Penal Provision

- The Act provides for imprisonment up to three years and a fine for anyone contravening the prohibition.

Recommendations on DNA Bill

Polity & Governance

Why in news?

- Recently, the **Parliamentary Standing Committee on Science and Technology, Environment, Forests and Climate Change** has recommended that the government should ease the concerns raised over the **DNA Technology (Use and Application) Regulation Bill, 2019**.
- The committee consulted legal and forensic science experts, apart from the Internet Freedom Foundation, National Law University, among others.

Background:

- The Bill was proposed in 2003 for the first time and since then it has gone through several revisions, by both the Department of Biotechnology and Law Ministry.



- The Department of Biotechnology has argued that nearly 60 countries have enacted similar legislation and that all-important matters related to privacy, confidentiality & data protection have been taken into account.
- In July 2019, it was again introduced in the Lok Sabha and after being passed, was referred to the Committee in October 2019.

Need for such DNA Technology Bill in India:

- First, countries having such legislation like the USA, have proved a significant increase in conviction rate. According to NCRB, India's conviction rate is 48.8% only in 2017. The conviction rate can improve significantly if the DNA Bill is enacted in India.
- Second, in India, Each year more than 4000 FIRs filed for not recognising the victim's body. Not only that, In India around 175 persons missing each day. The bill will help in identifying them very easily with scientific intrastate co-operation.
- Third, the Bill will come in handy during the parental disputes resolution. The Bill can also establish the identity of missing children and baby-swapping cases in hospitals.
- Fourth, accurate and faster investigation of crime is feasible. Since the Bill maintains a database for convicts and suspects, the crime scene investigation will completely be based on scientific principles. This can result in a faster and accurate investigation by police officers.
- Fifth, the Bill will help in research works in DNA and also create employment opportunities for skilled manpower and other non-skilled jobs.

Highlights of the Bill:

- **Database Creation:**
 - It aims to establish a database of "certain categories of persons" such as victims of crimes, missing persons and children, unidentified bodies, as well as offenders, suspects and undertrials in cases.
 - Such a database would help trace repeat offenders of heinous crimes such as rape and murder through DNA profiling.
- **Regulation of DNA Technology:**
 - It regulates the use of DNA technology for establishing the identity of persons in respect of matters listed in a Schedule.
 - These include criminal matters such as offences under the Indian Penal Code, 1860, and civil matters such as parentage disputes, emigration or immigration, and transplantation of human organs.
- **National DNA Data Bank:**
 - It establishes a National DNA Data Bank and Regional DNA Data Banks, which will maintain the following indices:
 - Crime scene index.
 - Suspects' or undertrials' index.
 - Offenders' index.
 - Missing persons' index.
 - Unknown deceased persons' index.
- **DNA Regulatory Board:**
 - It also establishes a DNA Regulatory Board and every DNA laboratory that analyses a DNA sample to establish the identity of an individual, has to be accredited by the Board.
- **Requirement of Consent:**
 - Written consent by individuals is required to collect DNA samples from them. Consent is not required for offences with a punishment of more than seven years of imprisonment or death.
- **Removal of DNA Profiles:**
 - It provides for the removal of DNA profiles of suspects on filing of a police report or court order, and of undertrials on the basis of a court order.
 - Profiles in the crime scene and missing persons' index will be removed on a written request.

Benefits of DNA Profiling and the Bill:

- Through DNA profiling techniques, crimes can be easily solved which will help to nab criminals.
- The technique is very effective in identifying accident victims, missing people or identifying disaster victims.

- The identification of parents is also possible with the use of the DNA profiling, which would prove helpful in property disputes.
- As per the National Crime Records Bureau, annually 1,00,000 children go missing and the Bill will enable identification of missing children.
- The standards of the DNA testing laboratories are not monitored or regulated, in absence of any proper regulation so it will be helpful in this regard.
- The Bill will also help in identifying unidentified deceased, including disaster victims and apprehend repeat offenders for crimes such as rape and murder.

Issues

- DNA is the base of any individual person. DNA not only not just reveal how a person looks, or what their eye colour or skin colour is. It will also reveal more intrusive information like their allergies, or susceptibility to diseases etc.
- the collection of DNA has also seen as a violation of two Fundamental Rights. Such as Right to Privacy under Article 21 and Right against self-discrimination under Article 23. The Bill is also seen as a violation of the Universal Declaration of Human Rights.
- Scientific laws if legislated, they need frequent course corrections to prevent misuse. In India, there are few legislations which are being used for centuries without any amendments. Failure to bring the amendment at a necessary stage will create a plethora of problems.
- There are only 15 DNA profiling labs in India. DNA Training Academy also faces a shortage of manpower. Considering this situation one cannot ensure a smooth implementation like DNA profiling, etc
- The DNA data can be misused just like other personal information like Cambridge Analytica scandal of Face book. For example, the Andhra government signed up with a private firm to collect DNA data from all citizens. The private firm may misuse the data for profit motives.
- There is also a possibility of Miscarriage of Justice. Like by planting innocent person DNA in crime scenes to confuse the investigation and if a crime scene is occurred in commonplace then many innocent might be harassed.

Recommendations:

- The concerns regarding the Bill are not entirely unfounded and have to be recognised and addressed by Parliament.
- An enabling ecosystem must be created to ensure that DNA profiling is done in a manner that is fully consistent with various Supreme Court judgments and with the Constitution.
- Justice K S Puttaswamy (Retd) vs Union Of India, 2018: The SC held that right to privacy was a constitutionally protected fundamental right under Articles 14, 19 and 21.
- On 'DNA profiles finding a way to the index', the panel suggests that these should be used only for investigation but not put in a databank.
- Also, these DNA profiles should be destroyed once a trial is over, barring those of the convicted.
- Strongly recommends only one National Data Bank in order to minimise chances of misuse of data.
- The DNA Regulatory Board should be independent and not consist of fully serving government officials.
- DNA samples should be taken only with the consent of an individual and no person should be forced to provide evidence that may incriminate him/her in any crime.

DNA Profiling:

- DNA profiling (also called DNA fingerprinting or forensic genetics) is a technique employed by forensic scientists to assist in the identification of individuals or samples by their respective DNA profiles.
- Although more than 99.1% of the genome is the same throughout the human population, the remaining 0.9% of human DNA shows variations between individuals.
- These variable DNA sequences, termed polymorphic markers, can be used to both differentiate and correlate individuals.
- DNA profiling uses the polymerase chain reaction (PCR) to produce many copies.
- PCR is an automated procedure that generates lots of copies of a specific sequence of DNA. It only requires small amounts of DNA to start with and can even make copies from a DNA sample that is partially degraded.

Medical Termination of Pregnancy (Amendment) Bill, 2020

Polity & Governance

Why in news?

- Recently Medical Termination of Pregnancy (Amendment) Bill 2020 is scheduled to be tabled in Rajya Sabha. The MTP bill was passed in Lok Sabha last year. The bill aims to strengthen the abortion rights of women from the earlier Medical Termination of Pregnancy Act 1971

Salient provisions of MTP Amendment Bill 2020:

- the Bill **extends the upper limit for permitting abortions from the current 20 weeks to 24 under special circumstances**. This is applicable to a "**special category of women**". Victims of abuse, rape survivors, the differently-abled, and minors fall under this category.
- the Bill proposes the requirement of the opinion of one **registered medical practitioner (RMP) for termination** of pregnancy up to 20 weeks of gestation.
- the Bill provides for **two RMPs opinions for termination of pregnancy between 20 and 24 weeks**.
- Bill **constitutes a Medical Board**. Every state government has to constitute a medical board. These medical boards will diagnose pregnant women for substantial foetal abnormalities. **If any such substantial foetal abnormalities** get detected then the **termination** of pregnancy can be done even after 24 weeks of gestation (no upper limit for the termination of pregnancy in this case).
- The Medical Boards will consist of the following members:
 - a gynecologist,
 - a pediatrician,
 - a radiologist or sonologist,
 - any other number of members, as may be notified by the state government.
- Bill **protects the privacy of a woman**. No RMP can reveal the name and other particulars of a woman who performs the abortion. However, RMP can reveal the identity to a person authorised by law. The violation of this provision is punishable with imprisonment up to one year, or a fine, or both.

Merits associated with the bill

- the Bill raises the **foetal gestation period** for termination of pregnancy **beyond 20 weeks**. The MTP Bill also includes a **special category of women**. In short, the bill enables access to safe abortion and curb illegal abortion practices.
- the 1971 MTP Act states that, if a **minor** wants to terminate her pregnancy, the guardian has to provide written consent. The proposed bill has excluded this provision.
- the Bill will **strengthen the reproductive rights of women**. The Supreme Court in *Mrs X v. Union of India, 2017 case* has recognised women's right to make reproductive choices and their decision to abort as a dimension of their personal liberty. The court also mentioned abortion primarily fall within the Right to Privacy.
- the Bill will **reduce the burden on the Judiciary**. At present, there are many cases registered in court seeking permission for abortion beyond 20 weeks. Meanwhile, with the establishment of the Medical Board, the burden on the judiciary will reduce.

Issues with the present Bill

- The **constitution of the Medical board**. The constitution of the medical board presents a variety of challenges such as
 - The present **healthcare budgetary allocation** (1.5% of GDP) makes setting up a board across the country, both financially and practically impossible.
 - Apart from that, even if it is set up, **access to the board** by pregnant women in remote areas of the state is a matter of concern.
 - No time limit is set for the board to respond to the requests.
 - The board subject women to multiple examinations before allowing her to terminate her pregnancy. This is a **violation of rights to privacy** and dignity.
 - Personal beliefs could impact** the medical board's opinion. For example, Madhya Pradesh High Court denied terminating the pregnancy of 13-year-old rape survivor only because a psychiatrist on the medical board had not supported her abortion.

- The amendments continue the **patriarchal population control legacy**. The bill does not give women control over their own bodies. It requires the medical practitioner's opinion and not the request or will of pregnant women alone.
- The current **bill does not consider** a few important things in the termination of pregnancy. Such as **personal choice, a sudden change in circumstances** (due to separation from or death of a partner), and **domestic violence**.
- The amendment also fails to consider the abortion rights of intersex, transgender, and gender diverse persons.

NITI Aayog's Proposal for Little Andaman

Polity & Governance

What is the news?

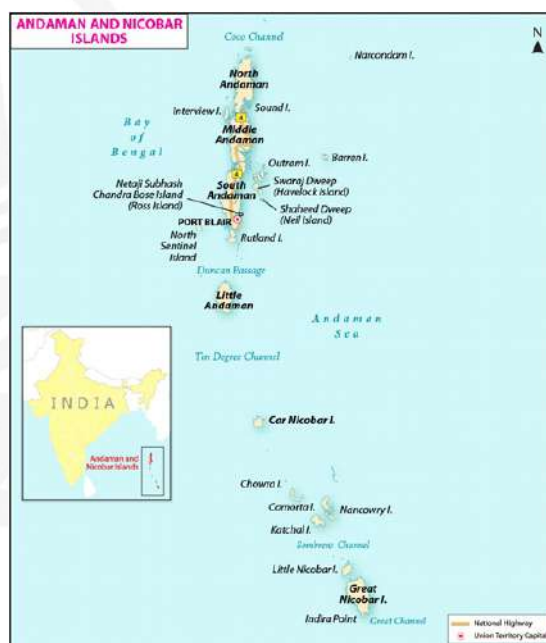
- Recently, a plan named the **Sustainable Development of Little Andaman Island Vision Document** by **NITI Aayog** for the sustainable and holistic development of the 680 sq km, **fragile Little Andaman Island** in the **Andaman and Nicobar island group** has raised alarm among conservationists.
- Earlier in 2020, the Prime Minister declared that the Andaman and Nicobar Islands will be developed as a "maritime and start-up hub".

Purpose of such move:

- To leverage the **strategic location** and natural features of the island.
- The islands are critical for India's security because of their strategic location in the **Indian Ocean Region (IOR)**.
- Better infrastructure and connectivity will help India enhance its military and naval strength in the islands.

Plan:

- Building a new **greenfield coastal city**, that will be **developed as a free trade zone** and will **compete with Singapore and Hong Kong**. **Three Zones:** It has divided the development in **three zones**:
- **Zone 1:**
 - Spread over 102 sq km alongside the east coast of Little Andaman.
 - It would be the monetary district and medi metropolis and can embody an aerocity, and a tourism and hospital district.
- **Zone 2:**
 - Spread over 85 sq km of pristine forest.
 - It is the leisure zone, can have a movie metropolis, a residential district and a tourism Special Economic Zone (SEZ).
- **Zone 3:**
 - Spread over 52 sq km of pristine forest.
 - It shall be a nature zone, additional categorized into three districts: an unique forest resort, a nature therapeutic district and a nature retreat, all on the western coast.
- **Transport Development:**
 - A **worldwide airport** able to deal with all varieties of plane is central to the plan as a global airport is vital for growth.
 - The solely **jetty on the island might be expanded** and a marina might be developed subsequent to the tourist entertainment district.
 - A 100 km **greenfield ring highway** might be constructed parallel to the shoreline from east to west and might be supplemented with a mass fast transit community with stations at common intervals.



- **Bottlenecks:**
 - **Lack of fine connectivity** with Indian mainland and world cities.
 - **Fragile biodiversity** and natural ecosystems and certain **Supreme Court** notifications that pose an obstacle to development.
 - Another key issue is the **presence of indigenous tribes** and concerns for their welfare.
 - 95% of Little Andaman is covered in forest, a big part of it the pristine evergreen sort. Some 640 sq km of the island is **Reserve Forest** under the **Indian Forest Act 1927**, and almost 450 sq km is protected because of the **Onge Tribal Reserve**, creating a singular and uncommon socio- ecological-historical complex of high importance.
- **Solution Proposed in the Plan:**
 - The proposal wants 240 sq km (35%) of this land and the options are:
 - De-reserve 32% of the reserved forest and de-notify 138 sq km or 31% of the tribal reserve.
 - If the tribals develop into an obstacle, the proposal says that they can be relocated to other parts of the island.
- **Flaws in the Proposal:**
 - It talks of conservation of nationwide park/wildlife sanctuary on Little Andaman when none exist right here and it has **no mention of the geological vulnerability of the place**, which was amongst the worst- affected within the **earthquake-tsunami** combination in 2004.
 - The waves hit Little Andaman so hard that the breakwater there was not just breached, it was physically displaced and it's orientation changed. Ships couldn't berth for weeks thereafter.
 - The plan has **no financial details, no budgeting, or inventorisation of forests** and ecological wealth and **no particulars of any impact assessment**.
 - The nature resort proposed at West Bay on the western coast is to have theme resorts, floating/underwater resorts, seaside inns, and high-end residential villas.
 - It is today a secluded and difficult to reach part and one of the most vital nesting sites of the Giant Leatherback sea turtle.
- **Forest Department's Concern:**
 - In a note, Divisional Forest Officer, Little Andaman, raised severe considerations about this proposal on grounds of **ecological fragility, indigenous rights and vulnerability to earthquakes and tsunamis**.
 - It mentioned that such a large diversion of forest land would **cause environmental loss leading to irreversible damage**.
 - **Habitats of various wild animals** will be affected.
 - The proposal couldn't even be assessed as a result of there being **no environment impact assessment report** & neither had there been any detailed site layout plans for the proposed diversion.

Little Andaman Island

- **About:**
 - This island is **part of the Little Andaman Group** (Little Andaman is the counterpart of Great Andamans). This island is the **fourth largest island in Andamans**.
 - It is famous by the name of its main village and the largest settlement – **Hut Bay** (rarely known by its other name **Kwate-tu-kwage**).
- **Tribes:**
 - At a distance of about 120 Kilometers by sea from the capital town of Port Blair, this island has become a **tribal reserve from sometime near to 1957**.
 - This is considered **home to the Onge Tribes**, even though there are **multilingual settlers of Bengali, Tamil, Telugu, and Ranchi communities**.
- **Location and Transport:**
 - Lying at the **southern end of the archipelago, Hut Bay Jetty is the only harbor for ships or boats** coming into this island from the capital town – Port Blair.
 - Little Andamans is less explored due to the **limited mode of connection** with the capital town of Port Blair.

Community Forest Resource Rights

Polity & Governance

Why in news?

- Thousands of tribal living in villages located in the core areas of Sitanadi Udanti Tiger Reserve are protesting and demanding the recognition of their Community Forest Resource rights.

Community Forest Resource rights :

- Community Forest Resource (CFR) rights are given under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA).
- The tiger reserves are constituted on a core/buffer strategy. The core areas have the legal status of a national park or a sanctuary, whereas the buffer or peripheral areas are a mix of forest and non-forest land, managed as a multiple use area.

Provisions of the Forest Rights Act (FRA):

- About:**
 - The Forest Rights Act (FRA) 2006 recognizes and vest the forest rights and occupation in Forest land in **Forest Dwelling Scheduled Tribes (FDST)** and **Other Traditional Forest Dwellers (OTFD)** who have been residing in such forests for generations.
 - It strengthens the conservation regime of the forests while ensuring livelihood and food security of the FDST and OTFD.
 - The **Gram Sabha is the authority** to initiate the process for determining the nature and extent of Individual Forest Rights (IFR) or Community Forest Rights (CFR) or both that may be given to FDST and OTFD.
 - Individual Rights:** Encompasses Rights of Self-cultivation and Habitation.
 - Community Rights:** Such as Grazing, Fishing and access to Water bodies in forests, Habitat Rights for **Particularly Vulnerable Tribal Groups (PVTGs)**, right to protect, regenerate or conserve or manage any community forest resource for sustainable use etc.
 - Community Forest Resource Rights:** These are rights of Adivasi and OTFDs over customary common forest land within the traditional or customary boundaries of the village or seasonal use of landscape in the case of pastoral communities.
 - These can be recognised over any forest land including reserved forests, protected forests and protected areas such as Sanctuaries and National Park.

About Sitanadi-Udanti Tiger Reserve:

- Establishment:**
 - Sitanadi-Udanti Tiger Reserve came into existence in the year 2008- 09, are two separate reserves (Udanti & Sitanadi Wildlife Sanctuaries) combined together.
- Location:** It is located in the **Gariaband district, Chhattisgarh.**
- Ecological Diversity:**
 - It contains various types of forest crop mixed with Sal forest.
 - Asiatic Wild Buffalo is the key endangered species found in the Core Area.
 - Apart from the tiger, other endangered and rare species are Indian Wolf, Leopard, Sloth Bear and Mouse Deer.

Amendments to the Juvenile Justice Act

Polity & Governance

Recently, the Union Cabinet ushered in some major amendments to the **Juvenile Justice (Care and Protection of Children) Act 2015**.

About Juvenile Justice (Care and Protection of Children Act) 2015

- It was introduced and passed in Parliament in 2015 to replace the Juvenile Delinquency Law and the Juvenile Justice (Care and Protection of Children Act) 2000.
- It allowed the trial of juveniles in conflict with law in the age group of 16-18 years as adults, in cases where the crimes were to be determined.

- The nature of the crime, and whether the juvenile should be tried as a minor or a child, was to be determined by a Juvenile Justice Board.
- The Act streamlined adoption procedures for orphans, abandoned and surrendered children.
- The existing Central Adoption Resource Authority (CARA) has been given the status of a statutory body to enable it to perform its function more effectively.

Issues with the present legislation

• issues with the present Act?

- 1. Non-compliance to the provisions of the Act:** A survey conducted by the National Commission for Protection of Child Rights (NCPCR) points out that not even a single Child Care Institution (CCI) in India was in 100 per cent compliance with the provisions of the Juvenile Justice Act. This is because,
 - If the CCI did not receive a reply from the government within 3 months, it was "deemed as registered" for six months, even without government permission. This increased the non-compliance.
 - The survey also found CCIs with large funds, including foreign funding, had been keeping children in unsanitary conditions.
- 2. Under this ACT, no specific criteria has been provided to check the background of the members of the child welfare committees (CWC).**
- 3. Long pendency of cases: Juvenile Justice Committee** of the Supreme Court in 2017 highlighted that about **800-1000 adoption cases are pending** in various courts. The committee further pointed out that the delay in adoption is leading to various challenges like not able to get a birth certificate of a child, school admission is not feasible, etc.
- 4. Ambiguity related to the Offences:** The 2015 Act has various ambiguities related to the offences like;
 - At present, there is no mention of a minimum sentence in the Act.
 - Moreover, the Act does not provide **what is a serious offence?**
- There are **little oversight and monitoring** of CCIs by CWC and the State Child Protection Units. So, District Magistrates are informed about an offence committed by the CCI only after the occurrence of the incident. For example,
 - Ministry of Women and Child Development (WCD) seen an increase in **child abuse and trafficking during the Covid-19 lockdown.**
 - Further, the Ministry of WCD has also shut down 500 illegal child welfare institutions that had not been registered under the JJ Act.

Amendments to Juvenile Justice (Care and Protection of Children Act) 2015

• Inclusion of serious crimes apart from heinous crimes

- According to the Juvenile Justice Act 2015, juveniles charged with heinous crimes and who would be between the ages of 16-18 years would be tried as adults and processed through the adult justice system.
- The amendment has included for the first time the category of "serious crimes" differentiating it from heinous crimes, while retaining heinous crimes.
- It implies that for a juvenile to be tried for a heinous crime as an adult, the punishment of the crime should not only have a maximum sentence of seven years or more, but also a minimum sentence of seven years.
- It has been included to ensure that children, as much as possible, are protected and kept out of the adult justice system.
- The heinous crimes with a minimum imprisonment of seven years pertain mostly to sexual offences and violent sexual crimes.
- The juveniles between the ages of 16-18 years could also be tried as adults for a crime like the possession and sale of an illegal substance, such as drugs or alcohol, which will now fall under the ambit of a "serious crime".

Expanding the purview of district and additional district magistrates

- The district magistrates (DMs) along with additional district magistrates (ADMJs) will monitor the functioning of various agencies under the JJ Act in every district.

- It includes the **Child Welfare Committees, the Juvenile Justice Boards, the District Child Protection Units** and the Special juvenile Protection Units.
- The new amendment ensures that no new children's home can be opened without the sanction of the DM.
- The DMs are also responsible now for ensuring that CCIs falling in their district are following all norms and procedures.
- The DM will also carry out background checks of CWC members, who are usually social welfare activists, including educational qualifications.
- It provides that the DM will also now be in-charge of sanctioning adoptions, removing the lengthy court process in order to hasten the process of adoption.

Significance of Amendments to Juvenile Justice Act 2015

- The amendments are aimed at strengthening Child Protection set-up to ensure best interest of children.
- The amendments aim to empower the DMs and the additional DMs to monitor the functioning of agencies responsible for implementing the JJ Act.
- The amendments have proposed to expand the definition of children in need of care and protection and include those children who have been victims of trafficking or drug abuse or child labour.
- The move would enhance the accountability of those involved in the process of safeguarding children's interests.

Further reforms needed

- **Child Welfare Committees** are not effectively performing their functions of care, protection and rehabilitation of a child. So, the government have to provide **adequate training to the members of CWC.**
- **Role of State government:** State governments should **provide immediate bail to a child who committed petty and serious crimes.** Currently, children are staying in welfare homes for a longer time period, as the bail is not getting provided on time by State governments.
- **Training, sensitisation of DM:** The current amendment confers many powers upon the DM. But the DM is already overburdened with the other works. So the DMs should get adequate training and sensitisation for faster and effective implementation of the Juvenile Justice Act.
-



Pey Jal Survekshan - Pilot

Welfare & Schemes

Why in news?

- The Union Ministry of Housing and Urban Affairs launched Pilot Pey Jal Survekshan under Jal Jeevan Mission- Urban (JJM-U).

About Pey Jal Survekshan

- It is a drinking water survey launched in 10 cities under Jal Jeevan Mission (Urban).
- Ministry: Ministry of Housing and Urban Affairs.
- Purpose: It will ascertain the equitable distribution of water, reuse of wastewater in target cities. Moreover, it will map water bodies with respect to the quantity and quality of water.
- Coverage: It will cover 10 cities; Agra, Badlapur, Bhubaneswar, Churu, Kochi, Madurai, Patiala, Rohtak, Surat, and Tumkur.



Key Features:

- The survey will be monitored through a technology-based platform. This platform will monitor the beneficiary responses.
- Authorities will collect data through various methods; face-to-face interviews with citizens and municipal officials, on-call interviews, water sample collection, laboratory testing, and field survey.
- Based on the learnings of the pilot survey, this exercise will extend to all Atal Mission for Rejuvenation and Urban Transformation (AMRUT) cities.

Jal Jeevan Mission

- Jal Jeevan Mission, a central government initiative under the Ministry of Jal Shakti, aims to ensure access of piped water for every household in India.
- The mission's goal is to provide to all households in rural India safe and adequate water through individual household tap connections by 2024.
- The Har Ghar Nal Se Jal programme was announced by FM in Budget 2019-20 speech.
- This programme forms a crucial part of the Jal Jeevan Mission.
- The programme aims to implement source sustainability measures as mandatory elements, such as recharge and reuse through greywater management, water conservation, and rainwater harvesting.



Urban component of the mission

- The mission is meant to create a people's movement for water, making it everyone's priority.
- There are an estimated gap of 2.68 crore urban household tap connections that the Mission would seek to bridge in all 4,378 statutory towns.
- The Mission would also aim to bridge the gap of 2.64 crore sewer connections in the 500 cities under the existing Atal Mission for Rejuvenation and Urban Transformation (AMRUT).
- The mission would include rejuvenation of water bodies to boost the sustainable freshwater supply and the creation of green spaces.

Bonded Labour in India

Welfare & Schemes

Why in the news?

- Recently, fifteen bonded labourers were rescued by the district administration of Guna in Madhya Pradesh. These labourers were being subjected to inhuman treatment and torture by their employer.

Bonded Labour

- It is a practice in which employers give high-interest loans to workers who work at low wages to pay off the debt.
- The Supreme Court of India has interpreted bonded labour as the payment of wages that are below the prevailing market wages and legal minimum wages.
- Bonded labour was historically associated with rural economies where peasants from economically disadvantaged communities were bound to work for the landlords.
- Bonded labour is found to exist in both rural and urban pockets in unorganized industries such as brick kilns, stone quarries, coal mining, agricultural labour, domestic servitude, circus, and sexual slavery.

Prevalence of Bonded Labour in India

- According to International Labour Organization there were 1.17 crores bonded labourers in 2014.
- The most current available data from the National Crime Records Bureau (NCRB) indicate that there were 8,132 reported cases of human trafficking across India in 2016.
- Bonded labour is mostly prevalent in agricultural sector, informal sector including cotton textile handlooms, brick kilns, construction work, brothels, stone quarries, carpet weaving, bidi rolling, rearing of silk cocoons, production of silk sarees, silver jewellery, synthetic gemstones, precious gem cutting, leather products, domestic help etc.
- The low-income states such as Jharkhand, Odisha, Rajasthan, Uttar Pradesh, Bihar, Chhattisgarh, and Madhya Pradesh are more vulnerable to prevalence of bonded labour. A large number of bonded labourers are also rescued every year from Karnataka and Tamil Nadu.

Global Slavery Index, 2018:

- It estimates that on any given day in 2016 there were nearly 8 million people living in "modern slavery" in India.
- The report said that in terms of prevalence, there were 6.1 victims for every thousand people. India has been ranked 53 out of 167 countries.
- Global status:
- North Korea topped the Global Slavery Index with 104.6 per 1,000 prevalence rate and Japan ranked lowest registering a prevalence rate of 03. Per 1,000.
- Globally, 71% of modern slavery's victims are women and girls.

International Obligations:

- India is obliged to end modern slavery by 2030 under the Sustainable Development Goal (Target 8.7) of ending forced labour, human trafficking and child labour.
- India has also ratified the ILO Abolition of Forced Labour Convention, 1957 (No. 105).
- India also aspires to improve its rank (53rd out of 167 countries in the year 2018) in the Global Slavery Index.

Constitutional Provisions:

- Article 21** deals with the Right to Life and Personal Liberty.
- Article 23** of the Constitution prohibits forced labour.
- Article 24** prohibits the employment of children (below the age of fourteen years) in factories, etc.
- Article 39** directs the State to secure the health and strength of workers, men and women, and to see the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength.

Reasons for the Persistence of Bonded Labour:

- The lack of awareness among workers and employers.
- Low conviction rates.
- Social bias towards bonded labour.
- Migratory nature of bonded labour.
- Weaker implementation of Bonded Labour System (Abolition) Act 1976.
- Punishment for forced labour (Section 374 of IPC– unlawful compulsory labour) is not appropriate.
- Lack of proper coordination at the national and regional level, and among governments.

Legal Provisions

- **Bonded Labour System (Abolition) Act, 1976** is an extension to article 23 of the Indian constitution. The Act intends to free all bonded labourers, cancel their debts, establish rehabilitative measures and punish the offender through imprisonment and fine.
- **The Minimum Wages Act (1948)** – This law sets the standard amount of wages to be paid to labourers. The Act also covers the time frame which has to be set for the workers, which involves overtime, necessary breaks, necessary leaves and other facilities for the workers
- **Contract Labour (Regulation and Abolition) Act, 1970** is enacted to introduce better working conditions and minimize exploitation of contract labourers. Also the Act enjoins joint and several responsibilities on the principal employer and contractor.
- **Interstate migrant workmen (regulation and employment conditions of service) Act, 1979** was enacted to regulate the working conditions of inter-state labourers in Indian labour law.
- **Indian Penal Code:** Under Section 370, Unlawful compulsory labour is prohibited
- **Child Labour (Prohibition & Regulation) Act, 1986 and Amendment in 2016:** It prohibits the engagement of children in certain employments and regulates the conditions of work of children in certain other employments
- **Trafficking of Persons Bill 2018:** It makes special note of trafficking for the purpose of forced labour, and categorises it as an aggravated form of trafficking
- **Draft Domestic Workers Regulation of Work and Social Security Bill 2016:** It is prepared by the National Platform for Domestic workers. It seeks to extend existing labour laws to cover domestic workers and ensure that they are entitled to the minimum wage and to access social security

Schemes

- **Rehabilitation of Bonded Labour Scheme, 2016:** The salient features of the scheme are:
 - Financial assistance of Rs. 1 lakh is provided for rehabilitation of a rescued adult male bonded labourer and 2 lakh for rescued child bonded labourer
 - The Scheme also provides for financial assistance of Rs. 4.50 lakh per district to the States for conducting survey of bonded labourers, Rs. 1 Lakh for evaluatory studies and Rs. 10 Lakhs per State per annum for awareness generation
- **Ujjawala scheme:** Initiated by the Ministry of Women and Child Development, the scheme provides shelter and rehabilitation for female victims of trafficking

Challenges in addressing the issue of bonded labour:

- **Poor Surveys:** There has been no government-led nationwide survey since 1978, despite each district having been given ₹4.5 lakh for such surveys
- **Data:** The government statistics on bonded labour is based on rescue and rehabilitation numbers. Such statistics do not properly reflect the extent of prevalence of bonded labour in India.
- **Under-reporting of cases:** National Crime Records Bureau data show that not all cases are reported by the police. Between 2014 and 2016, they recorded just 1,338 victims, with 290 police cases filed
- **Poor Implementation of Laws and corruption:**
 - Inefficient law enforcement is one of the reasons why bonded labour continues to be a problem in India.
 - The International Labour Organisation has observed that district-level Vigilance Committees meant to identify and rehabilitate bonded labourers do not take their duties seriously enough
 - Further, cases against employers are dropped in favour of settlements made out of court

- **Lack of awareness among workers:** The bonded Labourers are not aware of the legislation and report to the authorities only when it becomes overtly violent.
- **Issues with rehabilitation:** there are a range of practical challenges to the rescue and rehabilitation of bonded labourers including child labourers. These include failure to provide adequate reintegration services, a lack of human and financial resources, limited organisational accountability, and poorly structured partnerships between NGOs and government

India's International Obligations

- Convention on the suppression of slave trade and slavery, 1926
- International covenant on civil and political rights (I.C.C.P.R), 1966– It prohibits slavery and slave trade in all their forms, servitudes, and forced or compulsory labour.
- Convention on rights of child, 1989- It recognizes the right of a child to be protected from economic exploitation
- ILO convention on abolition of Forced Labour
- The Indian govt. also ratified two core ILO conventions in 2017, namely No. 138 on Minimum Age to Employment and No. 182 on the Worst Forms of Child Labour
- The SDG 8.7 : It calls for immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking, and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms

Intensified Mission Indradhanush (IMI) 3.0

Welfare & Schemes

Why in the news?

- Government has started the implementation of the Intensified Mission Indradhanush 3.0, a campaign aimed to reach those children and pregnant women who have been missed out or been left out of the routine immunisation.



Ministry of Health & Family Welfare Launches Mission Indradhanush

Full immunization coverage to be expanded from 65% to at least 90% children of the country.

All vaccines are available free of cost under the Universal Immunization Programme in India

Intensified Mission Indradhanush (IMI) 3.0

- IMI 3.0 is aimed to accelerate the full immunization of children and pregnant women through a mission mode intervention.
- The campaign is scheduled to have two rounds of immunisation lasting 15 days (excluding routine immunisation and holidays).
- It is being conducted in pre-identified 250 districts/urban areas across 29 States/UTs in the country.
- Beneficiaries from migration areas and hard to reach areas will be targeted as they may have missed their vaccine doses during the pandemic.

About Mission Indradhanush:

- Mission Indradhanush seeks to drive towards 90% full immunisation coverage of India and sustain the same by the year 2020. It was launched in December 2014.
- **Its Aims and objectives**
 - It aims to immunize all children under the age of 2 years, as well as all pregnant women, against eight vaccine-preventable diseases.
 - The diseases being targeted are diphtheria, whooping cough, tetanus, poliomyelitis, tuberculosis, measles, meningitis and Hepatitis B.
 - In 2016, four new additions have been made namely Rubella, Japanese Encephalitis, Injectable Polio Vaccine Bivalent and Rotavirus.
 - In 2017, Pneumonia was added to the Mission by incorporating the Pneumococcal conjugate vaccine under Universal Immunisation Programme.

Technograhis

Welfare & Schemes

Why in news?

- Recently, the Ministry of Housing & Urban Affairs has launched the **Enrolment Module for TECHNOGRAHIS**.

Background

- The foundation stone of LHPs was laid at Indore (Madhya Pradesh), Rajkot (Gujarat), Chennai (Tamil Nadu), Ranchi (Jharkhand), Agartala (Tripura) and Lucknow (Uttar Pradesh).
- The LHPs are being built as part of the Global Housing Technology Challenge-India (GHTC- India) initiative under the Pradhan Mantri Awas Yojana-Urban (PMAY-U).

Who are TECHNOGRAHIS?

- They are **students** from IITs, NITs, engineering, planning and architecture colleges, faculty members, academicians, and stakeholders.
- Significance of Enrolment Module for Technograhis**
- The interested candidates can register themselves to visit the Live Laboratories at six LHP sites for learning, consultation, generation of ideas and solutions, experimentation, innovation, and technical awareness.
- It will help students in getting a **first-hand account of the technologies being used** and in turn, they can adapt and adopt them as per their requirements in the construction sector for a 'Make in India' approach".
- The promotion of LHP sites is aimed to encourage large scale participation of people to create technical awareness for on-site learning.
- The technology revolution is cost-effective, environment-friendly, disaster-resilient and promotes speedier construction.



Indian Sign Language (ISL)

Welfare & Schemes

Why in news?

- Union Minister for Social Justice and Empowerment will virtually release the 3rd edition of the Indian Sign Language (ISL) Dictionary with 10,000 terms (including 6,000 earlier terms) on 17th February 2021.
- The Dictionary has been brought out by the Indian Sign Language Research and Training Centre (ISLRTC), an autonomous Institute under the Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice & Empowerment.
- The 3rd edition of the ISL Dictionary contains a total of 10,000 terms of everyday use, academic terms, legal & administrative terms, medical terms, technical terms, and agricultural terms.
- The Dictionary also contains regional signs used in different parts of the country.
- The 1st edition of the ISL Dictionary was launched on 23rd March 2018 with 3000 terms and the 2nd edition with 6000 terms (including earlier 3000 terms) was launched on 27th February 2019.



Welfare Measures For Inter State Migrant Workers

Welfare & Schemes

Why in news?

- The Standing Committee on Labour submitted its report on social security and welfare measures for inter-state migrant workers.

About the report

- The Committee noted that Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is the best scheme for providing sustainable livelihoods to unskilled workers (including migrant workers).
- The committee also recommended that the process of issuing job cards to labourers by state governments be made more transparent to ensure that no labourer is deprived of employment, as job cards are most essential documents for any individual demanding work under MGNREGS.
- Committee observations
- MGNREGS: This is the best scheme to provide "sustainable livelihood" to unskilled workers. Over 10 crore individuals have availed of the scheme and 330 crore person days have been created till February 2021 in the current financial year. This is the highest work given for any year since its inception in 2006. It shows the contribution of MGNREGS in providing employment during Pandemic.
- Migrant Workers: Around 1 crore migrant workers came back to their home states during the pandemic. Due to lack of exact data about the migrant workers who returned to their home state, has impacted the relief and rehabilitation work quite a great extent

Suggestions by Standing Committees

- Instant and Immediate Relief:** Steps should be taken to provide relief to persons who suffered the most during the pandemic. Various challenges and loopholes observed in the system during the pandemic should be addressed immediately to strengthen the preparedness for future challenges like it.
- Credible Database to be Prepared:** Of the unorganised sector workers, especially the migrant workers to implement the required initiatives and ensure seamless supply of relief material during such times of distress. Though in December 2020, the Government has already decided to create a database of informal workers including migrant workers.

Pradhan Mantri Matru Vandana Yojana

Welfare & Schemes

Why in news?

- The Pradhan Mantri Matru Vandana Yojana (PMMVY) crossed 1.75 crores, eligible women, till the financial year 2020 and Rs. 5931.95 Cr was paid to the beneficiaries between 2018-20.

About the scheme

Pradhan Mantri Matru Vandana Yojana(PMMVY):

- Launched in:** It is a maternity benefit scheme introduced in 2017. It is being implemented by the Ministry of Women and Child Development (MWCD). The scheme is in accordance with the National Food Security Act 2013.
- Type:** It is a Centrally Sponsored Scheme
- Aim:**
 - To provide partial wage compensation to women for wage-loss during childbirth and childcare.
 - To provide conditions for safe delivery and good nutrition and feeding practices.
 - To breastfeed the child during the first six months of the birth. As it is very vital the development of the child.
- Beneficiaries:** Pregnant Women and Lactating Mothers (PW&LM) who have their pregnancy on or after 1st January 2017 are eligible. The cash incentive is payable in three instalments for the first live birth.
- Exclusion:** PW&LM who are in regular employment with the Central/State Government or PSUs or those who receive similar benefits under any law.



Pradhan Mantri Matru Vandana Yojana
(PMMVY)



SCHEME IMPLEMENTATION GUIDELINES

Ministry of Women and Child Development
Government of India New Delhi
August, 2017

- **Benefits:** Under the Scheme, Pregnant Women and Lactating Mothers (PW&LM) receive a direct cash benefit transfer of Rs. 5,000 in three instalments. The amount will be credited to the beneficiary on fulfilling the respective conditions. Such as:
 - Early registration of pregnancy (First instalment)
 - Ante-natal check-up (Second instalment)
 - Registration of the birth of the child and completion of the first cycle of vaccination. (Third instalment)
- The eligible beneficiaries also receive cash incentive under Janani Suraksha Yojana (JSY). Thus, on average, a beneficiary will get Rs. 6,000.
- **Implementation:** The scheme is being implemented under the platform of Integrated Child Development Scheme.
- PMMVY- Common Application Software (CAS), web-based application software is used by the central and state governments to monitor the scheme. It is interoperable with UIDAI and Public Financial Management System (PFMS) for beneficiary authentication to avoid duplication. The Scheme is completely Local Government Directory (LGD) compliant with uniform master data of all villages/towns/cities throughout India on the PMMVY-CAS platform

PM Jan Arogya Yojana

Welfare & Schemes

Why in news?

- Key Finding of Economic Survey 2020-21 Reveals Strong Positive Impact of Pradhan Mantri Jan Arogya Yojana (PMJAY) on Health Outcomes.

Key Features of PM-JAY

- The programme is being touted as the world's largest health protection scheme.
- **The scheme has two pillars under it –**
- **Ayushman Bharat (AB)** - 5 lakhs health sub-centres will be converted into health and wellness centres.
- **National Health Protection Mission (NHPM)** - Provides health cover of Rs. 5 lakhs per family, per annum, reaching out to 50 crore beneficiaries.
- The benefits of the scheme are portable across the country for secondary and tertiary care hospitalisation.
- Also, a beneficiary covered under the scheme will be allowed to take cashless benefits from any public/private empanelled hospitals across the country.
- **Coverage** - The scheme will aim to target over 10 crore families based on SECC (Socio-Economic Caste Census) database.
- It will target poor, deprived rural families and identified occupational category of urban workers' families.
- It will cover 1,300 illnesses, including serious ones such as cancer and heart diseases.
- Private hospitals would also be part of the scheme.
- To ensure that nobody from the vulnerable group is left out of the benefit cover, there will be no cap on family size and age in the scheme.
- The insurance scheme will cover pre and post-hospitalisation expenses, including pre-existing illnesses.
- **Funding** - The expenditure incurred in premium payment will be shared between central and state governments in a specified ratio –
 - 60:40 for all states and UTs with their own legislature.
 - 90:10 in Northeast states, the three Himalayan states of Jammu & Kashmir, Himachal and Uttarakhand.
 - 100 per cent central funding for UTs without legislature.
- The states are also free to continue with their own health programmes.
- **Mode of funding** - In a trust model, bills are reimbursed directly by the government.
- Andhra Pradesh, Telangana, Madhya Pradesh, Assam, Sikkim and Chandigarh are the states that will use a trust model for the mission.
- In an insurance model, the government pays a fixed premium to an insurance company, which pays the hospitals.
- Gujarat and Tamil Nadu have opted for mixed mode implementation.



The Survey observes that:

- The proportion of households with any usual member covered under **health insurance** or financing scheme increased by 54 per cent from NFHS 4 to NFHS 5 in the states that adopted PMJAY, it decreased by 10 per cent in the states that did not adopt PMJAY, reflecting the success of PMJAY in enhancing health insurance coverage.
- The reduction in **Infant Mortality Rate (IMR)** was 20 per cent vis-à-vis 12 per cent in PMJAY and non-PMJAY states respectively, an increment of 8 per cent for states that adopted PMJAY versus those that did not.
- The proportion of people ensuring **family planning** rose across all the states between the two surveys, the increase is much more significant in the states that adopted PM-JAY indicating its effectiveness.
- The proportion of women with total **unmet family planning needs** decreased by 31 per cent in the PMJAY states, the decline in the non-PMJAY states was merely 10 per cent.
- The improvement in the delivery care indicators, e.g. **institutional births, institutional births in public facility, and home births** are much higher in the states which did not adopt the PMJAY. While there has been an overall increase in the caesarean deliveries, the percentage rise is higher among the PMJAY states as compared to the non-PMJAY states, barring caesarean deliveries in private health facilities. Hence, the Survey observes that PMJAY has not been much effective in terms of ensuring delivery care for births.
- The percentage of women who have comprehensive **knowledge of HIV/AIDS** (per cent) increased remarkably by 13 per cent in the PMJAY states, vis-à-vis an increase of mere 2 per cent in the non-PMJAY states. The difference in respective figures for men is even starker, at 9 per cent increase in the PMJAY states and a decrease of 39 per cent in the non-PMJAY states

Sandes: Government Instant Messaging System**Welfare & Schemes****Why in News**

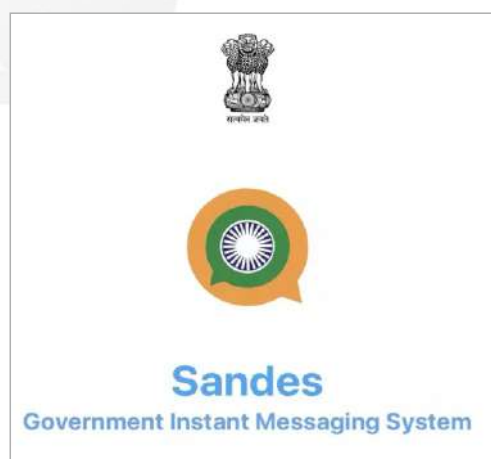
- The National Informatics Centre (NIC) has launched an instant messaging platform called Sandes on the lines of WhatsApp. NIC is under the aegis of the Ministry of Electronics and Information Technology. It provides network backbone and e-Governance support to the Central Government, State Governments and UT Administrations.

About Sandes App:

- It is a Government Instant Messaging System (GIMS) that can be used for official or casual use by any Government employee or public user having a valid Mobile No./Email ID.

Features:

- It offers features such as group making, broadcast message, message forwarding and emojis.
- Although there is no option to transfer the chat history between two platforms, the chats on GIMS can be backed up to a users' email.
- The user will have to re-register as a new user in case they wish to change their registered Email Id or phone number on the App.
- It allows a user to mark a message as confidential, which will allow the recipient to be made aware the message should not be shared with others.

**Significance:**

- Ensures Secure Communication: The Computer Emergency Response Team (Cert-In) and the Ministry of Home Affairs in April, 2020 had issued an advisory to all government employees to avoid using platforms like Zoom for official communication over safety and privacy concerns.

Promoting Indigenous Products:

- The launch of the App is also a part of the government strategy to push for use of India-made software so as to build an ecosystem of indigenously developed products.

Kapila Scheme

Economy

Why in new?

- Recently, the Union Minister of Education has provided information on the **Kalam Program for Intellectual Property Literacy and Awareness Campaign (KAPILA)**

About KAPILA Campaign

- It is an **intellectual property literacy campaign** for creating patent awareness.
- The **objectives** of the scheme include:
 - Creating awareness regarding Intellectual Property Rights (IPR) in Higher Education Institutions (HEIs);
 - Enabling of IP protection of inventions originating from faculty and students of HEIs;
 - Development of Credit Course on IPR;
 - Training program on IPR for faculty and students of HEIs; and
 - Sensitization and development of vibrant IP filing system
- Under this campaign, students pursuing education in higher educational institutions will get **information about the correct system of application process for patenting** their invention and they will be aware of their rights.

Need for KAPILA Campaign

- The government has insisted upon that it is necessary not only to **invent for the self-sufficiency of the country**, but also to patent the inventions.
- India has a proud history of Nalanda and Takshila Universities and **patent of inventions will lead India towards Self-Reliance**.

The **recognition of international standards of copyright protection** and incentives for intellectual property have helped India jump eight places to 36th position on the International Intellectual Property (IP) Index 2018.

Patents in India

- Patent:** It is the granting of a property right by a sovereign authority to an inventor. This grant provides the inventor exclusive rights to the patented process, design, or invention for a designated period in exchange for a comprehensive disclosure of the invention.
- Legislation: Patent filing in India is governed by Patents Act, 1970.**
- Patent (Amendment) Rules, 2020**
- The central government has published an amended Patent (Amendment) Rules, 2020.
- The new rules have amended the format of a disclosure statement that patentees & licensees are required to annually submit to the Patent Office.
- The format contains disclosing the extent to which they have commercially worked or made the patented inventions available to the public in the country.
- The disclosure is to be made in the Form 27 format as prescribed under the Patent Rules, 2003.
- The patentees & licensees as well as the Patent Office have blatantly disregarded this statutory requirement.
- There has been significant pressure from MNCs & the U.S. to do away with this requirement.

Criteria for issuing Patents in India

- Novelty:** it should be new (not published earlier + no prior Public Knowledge/ Public Use in India)
 - Non obviousness:** It must involve an inventive step (technical advanced in comparison to existing knowledge + non-obvious to a person skilled in the relevant field of technology)
 - Industrial use:** It should be capable of Industrial application
- Patents in India are governed by "The patent Act 1970" which was amended in 2005 to make it compliant with TRIPS.

International Laws

1. Paris Convention for the Protection of Industrial Property (1883) &

2. Berne Convention for the Protection of Literary & Artistic Works (1886).

- Both are administered by the **World Intellectual Property Organization (WIPO)**.
- **IPRs have been outlined in Article 27 of the Universal Declaration of Human Rights.**
- **WTO governs IPR through Trade-Related Aspects of the Intellectual Property Rights (TRIPS).**
- **Global Ranking:** According to the World Intellectual Property Organization (WIPO), India stands at the 7th position on number of patents filed. China tops the list, followed by the USA and Japan.

Micro Lending Issues

Economy

Why in the news?

- Micro-lending is in the news again for the wrong reasons – first is related to Assam and the second is related to Digital Micro Lending.

What is Microcredit?

- Microcredit refers to the granting of very small loans to impoverished borrowers, with the aim of enabling the borrowers to use that capital to become self-employed and strengthen their businesses.
- Loans given as microcredit are often given to people who may lack collateral, credit history, or a steady source of income.
- Microcredit agreements frequently do not require any sort of collateral, and sometimes may not even involve a written agreement, as many recipients of microcredit are often illiterate.
- When borrowers demonstrate success in paying their loans on time, they become eligible for loans of even larger amounts, allowing them to finance expansion.
- **Salient Features of Microfinance**
 - Borrowers are from the low income group
 - Loans are of small amount – micro loans
 - Short duration loans
 - Loans are offered without collaterals
 - High frequency of repayment
 - Loans are generally taken for income generation purpose.

Major Models of Microfinance initiatives

- **The Grameen Model:** The Grameen model has been a case of exceptional success in Bangladesh. It turns out that many organizations in India have adopted the Grameen Bank model with little variations. Some of the notable examples are SHARE Microfinance Limited, Activists for Social Alternatives (ASA) and CASHPOR Financial and Technical Services Limited.
- **Self Help Groups (SHGs):** An SHG is a group of five to 20 people from the same income category formed on principle of lending their own savings. This model was popularized by NABARD's SHG-Bank linkage programme.
- **Federated Self Help Groups (SHG FEDERATIONS):** The Federation of SHGs brings together several SHGs. Compared to a single SHG; the federation of SHGs has more than 1000 members. Examples of Federated Self Help Group model in India are PRADAN, Chaitanya, SEWA and Dhan Foundation.
- Cooperative banks
- Rotating Savings and Credit Associations (ROSCAS): e.g.: Chit funds
- Microfinance companies

Govt and Microfinance

- Encouraging National Bank for Agriculture and Rural Development (NABARD) to set targets for the self-help group (SHG) – Bank linkage programme
- Emergence of SIDBI Foundation for Micro-Credit as a financier of microfinance institutions (MFIs)

- Reserve Bank of India (RBI) – lending to SHGs as a part of priority sector targets
- Appointed Malegam committee to study about regulatory measures to implement for smooth functioning of MFIs.
- Setting up of the Rashtriya Mahila Kosh to refinance microfinance activities of NGOs
- Routing some poverty oriented schemes such as the Swarnajayanti Gram Swarozgar Yojana (SGSY) through SHGs
- The initiatives of various state governments in promoting schemes such as Swa-Shakti (Gujarat), Velugu (Andhra Pradesh), Kudumbasree (Kerala) etc.
- Recently, the MUDRA bank, the following are the types of support given by MUDRA:
- Micro Credit Scheme is offered mainly through Micro Finance Institutions (MFIs), which deliver the credit up to Rs.1 lakh, for various micro enterprise activities. Although, the mode of delivery may be through groups like SHGs/JLGs, the loans are given to the individuals for specific income generating micro enterprise activity.

Stagnation of Microcredit institutions

- **Cost of outreach** - reaching the unbanked populations of the world means servicing small loan amounts and servicing remote and sparsely populated areas of the planet, which can be dangerously unprofitable without high rates of process automation and mobile delivery.

- **Lack of scalability** - smaller microfinance systems often struggle to preserve the profitability and performance in these markets, as FI's experience high growth rates that result from getting the service delivery right. This results in thwarting the growth of these organizations.

- **Quality of SHGs (Self Help Groups)** - Due to the fast growth of the SHG-Bank Linkage Programme, the quality of MFIs has come under stress. This is due to various reasons such as: The intrusive involvement of government departments in promoting groups and diminishing skill sets on part of the MFIs members in managing their groups.

- **Geographic Factors** - Around 60% of MFIs agree that the Geographic factors make it difficult to communicate with clients of far-flung areas which create a problem in growth and expansion of the organization.

- **Diverse business models** - Supporting the very wide range of features and lending activities is difficult and requires a considerable amount of cost and efforts.

- **High Transaction Cost** - High transaction cost is a big challenge for microfinance institution. The volume of transactions is very small, whereas the fixed cost of those transactions is very high.

- **KYC and security challenges** - The customers serviced by Microfinance institutions are usually the ones having none or very limited official identification or able to provide tangible security, this makes it extremely difficult for institutions to offer any banking services.

- **Limited budgets** - Making provisions for large upfront investments is not possible for most of the MFIs which limits their capability to purchase world-class banking solutions that can help them fulfill their requirements and support their growth targets.

Table 1: Penetration Intensity of Microfinance

Top 5			
Name of State	MPI*	Name of State	MPPI**
Andhra Pradesh	3.64	Andhra Pradesh	6.35
Tamil Nadu	2.27	Tamil Nadu	2.77
Orissa	2.00	Kerala	2.49
Karnataka	1.57	Karnataka	1.74
W. Bengal	1.48	W. Bengal	1.65
Last 5			
Jammu and Kashmir	0.03	Jammu and Kashmir	0.13
Punjab	0.07	Bihar	0.14
Bihar	0.20	Punjab	0.22
Haryana	0.23	Madhya Pradesh	0.27
Gujarat	0.26	26 Uttar Pradesh	0.32

Source: NABARD

*The intensity of penetration of microfinance (also known as MPI)

How to promote MFI?

- **Promotion of Federation structure:** The long term sustainability of the SHG model may require a federal structure, without severing the linkages that the SHGs have with the local bank branches. The assumption that the federation structure should not be supplanted on the SHGs and can be addressed when the demand emerges needs reconsideration.
- **Maintenance of National Database on SHGs and MFIs:** At present, NABARD is maintaining the database on SHGs. It publishes annual hand book on microfinance in India with focus only on SHG Bank

linkage programme. It is suggested that NABARD be assigned the responsibility of collection of data involving the entire sector, their compilation and dissemination.

- **Comprehensive regulatory framework:** Presently, there is no distinctive regulatory framework for the MFIs in India. Therefore, there is a need of an exclusive regulation to regulate MFIs in India.
- **Contribution to the MFDEF (Micro Finance Development and Equity Fund) by Banks:** The corpus may be built up on an ongoing basis. A portion of profits of the bank may be contributed to the fund. The Government may provide tax relief to Banks for the contributions made.
- **An integrated package of services ('a credit-plus' approach) rather than just providing credits:** When access to credit is combined with savings facilities, non-productive loan facilities, insurance, enterprise development and welfare-related services, the adverse effects discussed above can be diminished.
- **Role of Corporate in Micro Finance:** Corporate India, of late, shown keen interest in the SHG movement as it provides an alternative business opportunity for them besides being a means to actualize its corporate social responsibility objectives. Many corporates have realized that the people at the bottom of pyramid can be brought into their business model. The group also sees a critical role of the corporate sector in providing market linkage to the products of the rural areas on a sustainable basis. The following are the examples.
 - ITC (through e-choupal model).
 - Hindustan Lever Ltd (through Streesakti project).
 - Mahindra & Mahindra (through Mahindra Subhlabh).
 - Tata Group (through Tata kisansansar)

Privatization of Banks

Economy

Why in the news?

- The government is looking to privatise more than half of the state-owned banks to reduce the number of government-owned lenders to just five. At present, India has 12 state-owned banks. Last year, the government had **merged ten state-owned banks** into four, creating a handful of larger banks.

Role played by PSB's in development

- PSBs expanded **agricultural credit**, short-term agricultural credit ('crop loans'). According to an estimate, the PSBs in 2017-18 account for a total of Rs 622,685 crores of Agricultural credit. Further, The PSBs also played a huge role in making the country self-sufficient by supporting the green, blue, and dairy revolutions.
- The PSBs pioneered the concept of **'priority sector lending**. This provided credit to certain priority sectors which were earlier deprived of credit such as housing, etc.
- The **Differential Rate of Interest (DRI) loans** are the brainchild of public sector banking. Under this poorest section of people will receive the loan at a very marginal interest rate.
- The PSBs extended loans to **women's self-help groups** under various programs. This contributed to **women's empowerment in India**.
- PSBs also funded rural infrastructure projects through the **Rural Infrastructure Development Fund**.
- In conclusion, the PSBs provided access to a formal banking network for all and facilitated **financial inclusion in India**.

Need for Privatisation of PSBs

- **NPA's:** The banking system is overburdened with the non-performing assets (NPAs) and the majority of which lies in the public sector banks.
- **Issue of Dual Control:** PSBs are dually controlled by RBI (under the RBI Act, 1934) and Finance Ministry (under the Banking Regulation Act, 1949) Thus, RBI does not have all the powers over PSBs that it has over private sector banks, such as
 - the **power to revoke a banking licence**,
 - **merge** a bank,
 - **shut down** a bank, or
 - **penalize** the board of directors.
- **Lack of Autonomy:** Public sector bank boards are still not adequately professionalized, as the

government still decides board appointments (as the Bank Bureau board is not fully functional). This creates an issue of politicization and interference in the normal functioning of Banks.

- **Difference of Incentives:** Private and public sector banks are driven by different incentives. For example, Private Banks are profit-driven whereas the business of PSBs is disrupted by government's schemes like farm loan waivers etc. Also, in the private sector, the shareholders' effective control over banks may explain the absence of large-scale frauds like in public sector banks such as the Punjab National Bank episode.

Merits associated with privatization

1. **The problem of NPAs:** The banking system is overburdened with non-performing assets (NPAs). The majority of which lies in the public sector banks. For example, In 2020 the amount of NPAs with the PSBs was about Rs 5.47 lakh crore. This is more than twice the amount of NPAs in Private sector banks (Rs 2.04 lakh crore).
2. **Issue of Dual Control:** At present PSBs are under the dual control of RBI and **Dept. of Financial Services of Min of Finance**.
 - The RBI handles the governance side of the PSBs under the **RBI Act, 1934**
 - On the other hand, the **Dept of Financial Services** under the Finance Ministry maintains the regulation of PSBs under the **Banking Regulation Act, 1949**.
 - Thus, RBI does not have the powers to revoke a banking license, shut down a bank, or penalize the board of directors for their faults. The Privatization will provide the powers to RBI to control them effectively.
- **Reduced performance:** The PSBs in the past failed to perform effectively when compared to Private banks. This will result in a loss for the government at the end of the day. For example, The PSBs had almost 71% of the overall lending ratio in 2005. But in 2020 their overall lending ratio came below 57% due to intense competition from the Private banks.
- Public sector bank boards are still not adequately professionalized. Further, the Bank Board Bureau is not fully functional. So the government still decides board appointments. This creates an **issue of politicization and interference** in the normal functioning of Banks.
- **A difference of Incentives:** PSBs are disrupted by government schemes like farm loan waivers etc. On the other hand, Private banks are profit-driven. The shareholders maintain effective control over banks' functions. So, they can improve the balance sheet of the PSBs after privatization.

Demerits

- **Political Risk:** There are many barriers to a programme of privatisation the primer one is that political risks are considerable for any government.
- **Issue of Governance:** The key issue of Indian banking is a **lack of adequate governance** which stretches across public and private ownership.
 - In the case of PSBs, there is **political interference** while private banks are prone to **malpractices** in the wake of serving the interest of its promoters.
 - The testimony that the problems of Indian banking transcend issues of ownership lies in the **plight of YES Bank**.
- **Policy Issue:** Restructuring schemes such as **corporate debt restructuring, strategic debt restructuring** and schemes for sustainable structuring of stressed assets, initiated by RBI, are the **major reasons for delaying the recognition of bad loans**, which are irrespective of ownership (public as well as private) of the banks.
- **Unpalatable Acquisition Targets:** The banks will be **unpalatable acquisition targets** for any private sector entity as many of them have **books burdened with bad loans**. The government will naturally **not receive a good price** for them, opening itself up to attacks from the **political opposition** in some cases, it could be fortunate if it received any price at all. It is also worth noting that many of the banks are vastly **over-staffed** or staffed by **employees with low productivity**, this excess employment cannot be easily shed by any acquirer.
- Any programme of wholesale privatisation will have to deal with an **aggressive campaign of obstruction by bank employee unions** with political influence.
- **Not a Panacea:** Former governor of RBI, Raghuram Rajan held that privatisation is not a panacea for the ills of the banking sector unless accompanied by **reforms in banking regulation**.
- **Failure of Regulation:** As RBI may not have similar control over PSBs as with respect to private banks, this does not explain why the RBI cannot hold the PSBs accountable for issues such as **capital adequacy**,

fraud control or appropriate reporting of financial statements. RBI is well **legislatively equipped to regulate banks** under the RBI Act.

- **PSBs as an Instrument for Social Justice:** PSBs also act as an instrument for social justice as they execute many welfare policies like **financial inclusion, farm loan waiver** etc.

Tiding over the current crisis

- **Proper implementation of the recommendations:** The government must properly implement the recommendations of various committees. Such as,
 - 1. Recommendation of PJ Nayak Committee:**
 - Though the government approved the Bank Board Bureau, the government has to provide enough support for proper functioning.
 - The government can split the Chairman and Managing Director roles. Further, the state can allow them a fixed tenure of 3 to 5 years.
 - 2. Recommendations of Narashimham committee**
 - The government can review the Banking Regulation Acts.
 - India can explore the **concept of Narrow Banking**. Under this weak PSBs will be allowed to place their funds only in the short term and risk-free assets. This will improve the performance of PSBs.
- **Dealing with defaulters: Apart from that, The government has to create strong recovery laws and taking criminal action against wilful defaulters.** The government has to rectify the challenges in the Insolvency and Bankruptcy Code. This will provide a faster resolution process. In the meantime, the government can explore alternate steps such as the concept of Bad Banks.

Arbitration and Conciliation (amendment) bill 2021

Economy

Why in news?

- Arbitration and Conciliation (Amendment) Bill 2021 was passed recently in the Lok Sabha.

Advantages of Arbitration and conciliation

- Arbitration promises privacy. In a civil court, the proceedings are held in public.
- Arbitration provides liberty to choose an arbitrator, who can be a specialist in the subject matter of the dispute. Thus, arbitrators who are sector specialists can be selected who resolve the dispute fairly and expeditiously.
- The venue of arbitration can be a place convenient to both the parties. Likewise the parties can choose a language of their choice.
- Even the rules governing arbitration proceedings can be defined mutually by both the parties.
- A court case is a costly affair. The claimant has to pay advocates, court fees, process fees and other incidental expenses. In arbitration, the expenses are less and many times the parties themselves argue their cases. Arbitration involves few procedural steps and no court fees.
- Arbitration is faster and can be expedited. A court has to follow a systematic procedure, which takes an abnormally long time to dispose off a case.

Salient Features of the amendment bill

Grants Automatic stay on awards:

- In the present regime, a party may file an application before the Court under Section 34 of the 1996 Act for setting aside an arbitral award.
- However, after the 2015 amendment to (Section 36 of) the Act, an automatic stay would not be granted on operation of the award by mere filing an application for setting it aside.
- The 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 or contract/ making of the award was induced by fraud or corruption. This shall be deemed effective from October 23, 2015.

Omit Qualifications of Arbitrators:

- Schedule VIII to the principal Act specifies certain qualifications, experience, and accreditation norms for arbitrators.

- These requirements include that an arbitrator must be:
 - i) an advocate under the Advocates Act, 1961 with 10 years of experience, or
 - ii) an officer of the Indian Legal Service, among others.
- The Bill seeks to omit Schedule VIII and states that qualifications, experience and norms for accreditation of arbitrators shall be specified by Regulations.

Importance of the Amendment

- ***Impetus to making India a hub of international commercial arbitration:***
- Omission of Schedule VIII of the Act will give greater flexibility to the Arbitration Council of India and will help in promoting institutional arbitration.
- This will attract eminent international arbitrators to India

Addresses the issue of corrupt practices in securing contracts or arbitral awards:

- all the stakeholder parties get an opportunity to seek unconditional stay of enforcement of arbitral awards, if the underlying arbitration agreement or contract or making of the arbitral award is induced by fraud or corruption.

Drawbacks of the Amendment:

- There was widespread opposition with respect to proposed amendment to Section 36, which provides automatic stay of award. The Chief among them include:
- ***Prolongs Litigation Process:***
 - The bill does not define Fraud/ Corruption.
 - So, it is very easy for the losing party to allege corruption and obtain an automatic stay on enforcement of the arbitral award.
 - This defeats the very objective of alternate dispute resolution mechanisms by drawing parties to Courts and making them prone to prolonged litigation.
- ***Affects Ease of doing business in India:***
 - Retrospective application of Amendment Act (from 2015) with respect to automatic stay may open floodgates of litigation
 - Amendment will affect enforcement of contracts and thus, affect ease of doing business
- ***Ambiguous and Contradictory Provisions:*** Section 34 does not contain any express provision for setting aside an arbitral award, or refusing its enforcement. It was also observed that Section 34 and Section 36 are not in consonance with one another, and that the languages of that Sections 36 is in conflict with that of Section 34.
- ***Shows lack of legislative wisdom:*** Continuous piecemeal amendments to the Arbitration Act in 2015, 2019 and 2020 indicates that the Government lacks legislative wisdom. This may create doubts and apprehensions about the future changes to the Act and its retrospective application.

Provisions of Arbitration and Conciliation Act 1996:

- The 'Arbitration and Conciliation Act 1996' is an Act that regulates domestic arbitration in India.

The major provisions relating to Conciliation in the Act are:

- A party initiating the conciliation shall send a written notice to the other party, briefly identifying the subject of the dispute and inviting it for conciliation.
- The conciliation proceedings shall commence on acceptance of invitation by the other party.
- If the party initiating conciliation does not receive a reply within 30 days from the date the invitation was sent or within the specified period, it may opt to treat this as a rejection and inform the same to the other party.
- If it rejects the invitation, there can be no conciliation proceeding. Unless otherwise agreed there shall be one conciliator.
- The parties may however, agree that there shall be two or three conciliators, who shall act jointly. The sole conciliator shall be appointed by mutual consent of the parties.
- In case of two conciliators, each party may appoint one conciliator.
- In case of three conciliators, each party may appoint one conciliator and the third conciliator may be appointed by mutual agreement of the parties who shall act as the presiding conciliator.

- However, the parties may agree that a conciliator shall be appointed or recommended by an institution or a person.
- The Act also explains about the conciliation proceedings shall be terminated when, a settlement agreement is signed by the parties

Amendments of 2015:

The following are the salient features of the new ordinance, introduced in 2015:

- **definition of expression 'Court':**
 - The amended law makes a clear distinction between an international commercial arbitration and domestic arbitration with regard to the definition of 'Court'.
 - In so far as domestic arbitration is concerned, the definition of "Court" is the same as was in the 1996 Act, however, for the purpose of international commercial arbitration, 'Court' has been defined to mean only High Court of competent jurisdiction.
- **Adds a proviso to Section 2(2):**
 - It envisages that subject to the agreement to the contrary, Section 9 (interim measures), Section 27(taking of evidence), and Section 37(1)(a), 37(3) shall also apply to international commercial arbitration, even if the seat of arbitration is outside India.
 - The amendment tried to strike a kind of balance between the situations created by the judgments of Bhatia International and Balco v. Kaiser.
- **Established Arbitration Council of India:**
 - The amendments established an independent body called the Arbitration Council of India (ACI) for the promotion of arbitration, mediation, conciliation and other alternative dispute redressal mechanisms.
- **Relaxation of time limits:**
 - Under the earlier Act, arbitral tribunals are required to make their award within a period of 12 months for all arbitration proceedings.
 - The amendment removed this time restriction for international commercial arbitrations.
 - It added that tribunals must try to dispose of international arbitration matters within 12 months.
- **Appointment of arbitrators:**
 - Under the 1996 Act, parties were free to appoint arbitrators. In case of disagreement on an appointment, parties could request the Supreme Court, or the High Court, or any person or institution designated by such Court, to appoint an arbitrator.
 - This was amended. The Supreme Court and High Courts may now designate arbitral institutions, which parties can approach for the appointment of arbitrators.
 - For international commercial arbitration, appointments will be made by the institution designated by the Supreme Court.
- **Written submissions:**
 - A new requirement was added that the written claim and the defence to the claim in an arbitration proceeding, should be completed within six months of the appointment of the arbitrators

Arbitration

- Arbitration is a process in which a neutral third party or parties render a decision based on the merits of the case. In the Indian context the scope of the rules for the arbitration process are set out broadly by the provisions of the Arbitration and Conciliation Act 1998 and in the areas uncovered by the Statute the parties are free to design an arbitration process appropriate and relevant to their disputes.

Mediation

- The Process of mediation aims to facilitate the development of a consensual solution by the disputing parties. The Mediation process is overseen by a non-partisan third party - the Mediator. The authority of the mediator vests on the consent of the parties that he should facilitate their negotiations.

Conciliation

- Conciliation is a less formal form of arbitration. This process does not require an existence of any prior agreement. Any party can request the other party to appoint a conciliator. One conciliator is preferred but two or three are also allowed. In case of multiple conciliators, all must act jointly. If a party rejects an offer to conciliate, there can be no conciliation.

- Parties may submit statements to the conciliator describing the general nature of the dispute and the points at issue. Each party sends a copy of the statement to the other. The conciliator may request further details, may ask to meet the parties, or communicate with the parties orally or in writing. Parties may even submit suggestions for the settlement of the dispute to the conciliator.
- When it appears to the conciliator that elements of settlement exist, he may draw up the terms of settlement and send it to the parties for their acceptance. If both the parties sign the settlement document, it shall be final and binding on both.

Negotiation

- Negotiation is a dialogue intended to resolve disputes, to produce an agreement upon courses of action, to bargain for individual or collective advantage, or to craft outcomes to satisfy various interests. It is the primary method of alternative dispute resolution.

PLI Scheme for Telecom and Networking Products

Economy

Key Highlights of PLI Scheme for Telecom Sector

- The core component of this scheme is to **offset the huge import of telecom equipment worth more than Rs. 50 thousand crores** and reinforce it with "Made in India" products both for domestic markets and exports.
- The **main features** of this scheme are:
 - The scheme outlay is Rs. 12,195 Crores over **five years**.
 - The eligibility for the scheme will be subject to achievement of a **minimum threshold of cumulative incremental investment and incremental sales of manufactured goods net of taxes**.
 - The Financial Year 2019-20 shall be treated as the **Base Year for computation** of cumulative incremental sales of manufactured goods net of taxes.
 - The scheme provides **one percent (1%) higher incentive** in year 1, year 2 and year 3 for MSMEs.
 - The **Minimum Investment threshold** for MSME has been kept at Rs. 10 Crores and for others at Rs. 100 Crores.

myGov
मेरी सरकार

CABINET DECISIONS 17 FEB, 2021

Making India A Global Hub of Telecom Hardware

PLI* Scheme for Telecom and Networking Products Approved (1/3)

- Budgetary outlay of ₹12,195 crore for over 5 years
- The scheme will be operational from 1st April 2021
- To promote manufacture of Telecom & Networking products in India and attract investments
- Qualified investors will be incentivized up to 20 times of minimum investment threshold

*Production Linked Incentive

Significance of PLI Scheme for Telecom Sector

- It addresses the component of Atmanirbhar Bharat to make **India a global hub of manufacturing telecom equipment** including:
 - Core transmission equipment,
 - 4G/5G Next Generation Radio Access Network and Wireless Equipment,
 - Access & Customer Premises Equipment (CPE),
 - Internet of Things (IoT) Access Devices,
 - Other Wireless Equipment and Enterprise equipment like Switches, Routers etc.
- It addresses local manufacturing in MSME category because **Government desires MSMEs to play an important role in the telecom sector** and come out as national champions.
- It will lead to **incremental production of around ₹2.4 Lakh Crores** with exports of around ₹2 Lakh Crores over 5 years.
- It is expected that scheme will **bring investment of more than ₹3,000 crore** and generate **huge direct and indirect employment** and taxes both.

SFURTI clusters

Economy

Why in news?

- Recently, the Union Minister of MSME has said that 5,000 clusters for artisans can be started under the **SFURTI scheme** by fast-tracking the approval processes and reducing red-tape.

About the scheme

- It is an initiative by **Ministry of MSME** to promote Cluster development.
- The **Khadi and Village Industries Commission (KVIC)** is the nodal Agency for promotion of Cluster development for Khadi.
- The following schemes are being **merged into SFURTI**:
 - The Scheme for Enhancing Productivity and Competitiveness of Khadi Industry and Artisans
 - The Scheme for Product Development, Design Intervention and Packaging (PRODIP)
 - The Scheme for Rural Industries Service Centre (RISC) and
 - Other small interventions like Ready Warp Units, Ready to Wear Mission, etc.
- The SFURTI clusters are of two types:
 - Regular Cluster** (500 artisans) with Government assistance of up to Rs.2.5 crore and
 - Major Cluster** (more than 500 artisans) with Government assistance up to Rs.5 crore

Objectives of the SFURTI Scheme

- To provide **sustained employment** for traditional Industry artisans and rural entrepreneurs
- To enhance **marketability of products of clusters** by providing support for new products, design intervention and improved packaging, and also the improvement of marketing Infrastructure
- To equip traditional artisans of the associated clusters with **improved skills and capabilities** through training and exposure visits
- To make provision for common facilities and improved tools and equipment for artisans
- To strengthen the cluster governance systems with **active participation of the stakeholders**, so that they are able to gauge the emerging challenges, opportunities and respond to them in a coherent manner
- To build **innovative and traditional skills, improved technologies, advanced processes, market intelligence** and new models of public-private partnerships, so as to gradually replicate similar models of cluster- based regenerated traditional Industries

Significance of SFURTI Scheme

- Its primary objective is to **organise traditional industries and artisans into clusters** to make them competitive and increase their income.
- It provides **support for creating infrastructure through Common Facility Centres**, procurement of new machineries, creating raw material banks and improved packaging.

Need for revamping SFURTI Scheme

- It is required to **step up the pace of formation of such clusters** since only 82 of the 371 announced so far are actually functional.
- The target of 5,000 clusters is easily achievable if **red-tape can be reduced**.
- The government is looking to **increase the share of MSME sector in the country's GDP** to 40 per cent from the current 30 per cent and share of exports to about 60 per cent from 48 per cent.
- The government has set a target of **creating 5 crore new jobs** in the next five years in MSME.

Eligibility under SFURTI Scheme

- The **institutions eligible under SFURTI Scheme** are Non-Government organizations (NGOs), Institutions of the Central and State Governments, Semi-Government institutions, Field functionaries of State and Central Govt and Panchayati Raj institutions (PRIs).
- The **Eligible agencies/organizations may submit the proposal** to the State Office, KVIC and the same is scrutinized at the State Level and Zonal Level before submitting to the Scheme Steering Committee for approval.

Bad Bank and Developmental Bank

Economy

Why in the news?

- There are proposals to establish these banks.

What are bad banks?

- A **bad bank is an** Asset Reconstruction Company (ARC) or an Asset Management Company (AMC) that **takes over the bad loans of commercial banks, manages them and finally recovers the money** over a period of time.
- The bad bank is not involved in lending and taking deposits, but **helps commercial banks clean up their balance sheets and resolve bad loans.**
- The **takeover of bad loans is normally below the book value** of the loan and the bad bank tries to recover as much as possible subsequently.

Need for bad banks

- After losses in two consecutive years, India's scheduled commercial banks turned profitable in 2019-20.
- State-run banks continued to bleed for the fifth year in a row, but their losses were much more stifled.
- The Reserve Bank of India (RBI) reckons that the first half of 2020-21 saw even greater improvements in banks' vital statistics, with non-performing assets (NPAs) falling to 7.5% of outstanding loans by September 2020.
- The RBI attributed this to the resolution of a few large accounts through the introduction of the Insolvency and Bankruptcy Code (IBC) in 2016.
- Over the course of 2019-20, India's banks were on the mend from a precarious position in March 2018, when bad loans on their books peaked to over ₹10 lakh crore — around 11.5% of all loans.
- Former Chief Economic Adviser Arvind Subramanian had called India's 'twin balance sheet problem' in the Economic Survey for 2016-17.
- He had sent banks down a slippery slope, beset by dangerously high levels of non-performing assets.
- A large part of the problem started in the latter half of 2010s, for post recession development ; several large corporates overzealous in their investment ambitions, thus over-leveraging themselves in the process.
- **Financial Stability Report (FSR):** The RBI noted in its recent FSR that the gross NPAs of the banking sector are expected to shoot up to 13.5% of advances by September 2021, from 7.5% in September 2020.
- **K V Kamath Committee:** Noted that corporate sector debt worth Rs 15.52 lakh crore has come under stress after Covid-19 hit India, while another Rs 22.20 lakh crore was already under stress before the pandemic.
- The committee noted that companies in sectors such as retail trade, wholesale trade, roads and textiles are facing stress.
- Sectors that have been under stress pre-Covid include Non-Banking Financial Company (NBFC), power, steel, real estate and construction.

What are development banks?

- Development banks are financial institutions that provide long-term credit.
- They are also known as term-lending institutions or development finance institutions.
- It generally supports capital-intensive investments spread over a long period and yielding low rates of return.
- E.g. urban infrastructure, mining and heavy industry, irrigation systems
- Such banks often lend at low and stable rates of interest to promote long-term investments with considerable social benefits.

How do they work?

- To lend for long term, development banks require correspondingly long-term sources of finance.
- This is usually obtained by issuing long-dated securities in capital market.
- These are subscribed by long-term savings institutions such as pension and life insurance funds and post office deposits.

- The long-term investments associated here have notable social benefits as well as involve considerable uncertainties.
- Given this, development banks are often supported by governments or international institutions.
- Such support can be in the form of tax incentives and administrative mandates for private sector banks and financial institutions.
- This is to help them invest in securities issued by development banks.

Need of development bank

- Global Financial Crisis of 2008 reignited the need of development banks globally.
- An IMF paper (2016) noted, "the initial hopes that the privatisation wave of the 1980s would fuel a private sector funded greenfield infrastructure investment boom have fallen well short of expectations".
- The World Bank devoted its Global Financial Development Report (2015) to the theme of importance of long-term finance.
- The UNCTAD study asserted "the time is ripe to promote development banks."
- India's economic downturn in recent quarters and the high NPAs of banks affecting their credit culture have forced the government to think about reviving the Development banks to boost the economy through infrastructure financing.

Rise in Prices

Economy

Why in the news?

- Fuel prices are increasing off late.

Reasons for pricing prices

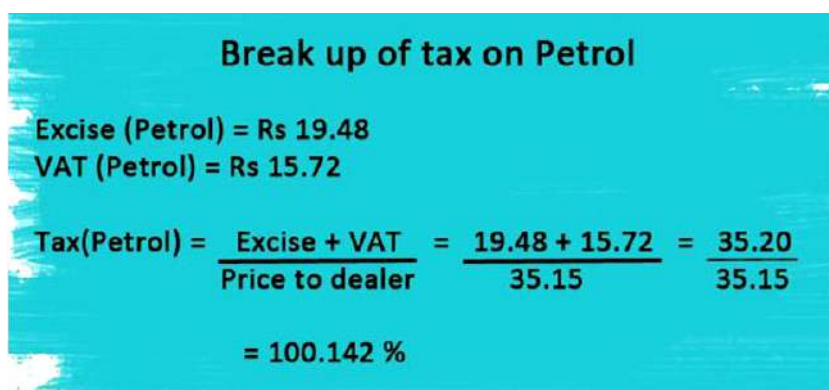
- **Global demand:** Prices collapsed in April 2020 after the pandemic spread around the world, and demand fell away. But as economies have reduced travel restrictions and factory output has picked up, global demand has improved, and prices have been recovering.
- **Dwindling production:** The controlled production of crude amid rising demand has been another key factor in boosting oil prices, with Saudi Arabia voluntarily cutting its daily output.
- **Tax structure:** the government gets almost Rs 11 per litre more than the previous government. Excise duty on petrol has gone up by 105.49 per cent (including the only time when duties were cut by Rs 2 per litre last October in the run-up to the assembly elections in Gujarat), while on diesel it has shot up by over 240 per cent during the time.

Impact on India

- **Higher prices: adverse impact on fiscal deficit:** India imports 1.5 billion barrels of crude oil each year. This comes up to around 86% of its annual crude oil requirement. So, the surge in crude oil prices could increase India's expenditure, thus adversely affecting India's Fiscal deficit. A rise in fiscal deficit could negatively affect the economy as well as markets. The fall in crude oil prices was a major contributing factor in the reduction of India's fiscal deficit between 2014 and 2016.
- **Impact on the rupee:** The rise in crude oil prices has a clear impact on the Indian rupee. On 24 May 2018, the rupee closed at 68.34 against the US dollar. In addition, if crude oil prices remain at these high levels, the rupee is further expected to depreciate by the year end. Rupee depreciation has a reverberating effect on the Indian economy and even the stock market.
- **Impact on Current Account Deficit (CAD):** India's dependency on crude oil imports has only been increasing over the past few years. The dependency rose from 77.3% in FY2014 to 83.7% in FY2018. The rise in crude oil price has a big impact on the Indian Current Account Deficit (CAD).
- **Impact on stocks:** A lot of Indian companies depend on healthy crude oil prices. This includes tyre, lubricants, footwear, refining and airline companies. The profitability of these companies is adversely affected due to higher input costs. This could negatively impact stock prices in the near term. On the other hand, oil exploration companies in the country could benefit from a rise in oil prices.
- **Impact on inflation:** Oil is a very important commodity and it is required to meet domestic fuel needs. And in addition to that, it is a necessary raw material used in a number of industries. An increase in the price of crude oil means that would increase the cost of producing goods. This price rise would finally be passed on to consumers resulting in inflation. Experts believe that an increase of \$10/barrel in crude oil prices could raise inflation by 10 basis points (0.1%).

Pricing of fuel in India

- Currently, the petrol prices are structured by the excise duty + VAT. While the excise duty is collected by the central government, the VAT goes to the state government's revenue. The price of the petrol and diesel is the sum of excise duty, VAT, the price to dealers and the commission pocketed by dealers.



Fuel prices under GST

- If petrol and diesel were to be brought under GST, the prices would fall dramatically. Even under a 28 per cent tax slab under GST, the petrol would cost only Rs 48.59 per litre and diesel would cost Rs 50.41 per litre.

What is the fuel pricing mechanism?

- The Indian basket of crude oil represents a derived basket comprising Sour Grade (Oman and Dubai average) and Sweet Grade (UK based) of crude oil processed in Indian refineries.
- Prices of petrol and diesel have been made market-determined effective June 2010 and October 2014 respectively.
- Since then, the Public Sector Oil Marketing Companies (OMCs) are supposed to take appropriate decisions on the pricing of petrol and diesel.
- It must be in line with international product prices and other market conditions such as exchange rate and the demand-supply situation, among others.

Gilgit Bonds

Economy

Why in the news?

- Recently, the Reserve Bank of India has proposed to allow retail investors to open gilt accounts with the central bank to invest in Government securities (G-secs) directly and without the help of intermediaries.

Need for the current proposal

- The g-sec market is dominated by institutional investors such as banks, mutual funds, and insurance companies. These entities trade in lot sizes of Rs 5 crore or more.
- So, there is no liquidity in the secondary market for small investors who would want to trade in smaller lot sizes. In other words, there is no easy way for them to exit their investments.
- Thus, currently, direct g-secs trading is not popular among retail investors.
- Earlier too, the regulators attempted to popularise g-secs among retail investors – for example, the NSE GoBid app or retail debt market (RDM) segment at the Exchange. But the attempts did not have the desired result due to lack of liquidity.

Impact of current proposal

- The details are not out yet. However, the RBI's intention is to make the whole process of g-sec trading smoother for small investors. By allowing people to open accounts in RBI's e-kuber system, it is hoping to create a market of small investors who will invest in these instruments.

Government securities

- A government security (G-Sec) is a debt obligation of the Indian government to fund their fiscal deficit. These instruments are tradable and are issued either by the central or the state government. These securities are offered for short term as well as long term. Short-term instruments with a maturity of less than one year are typically called treasury bills (T-Bills) whereas long-term instruments are called government bonds or dated securities with a maturity of one year or more.
- However in India, the central government issues T-Bills as well as bonds or dated securities while the state government issues only the bonds or dated securities called State Development Loans (SDL). The central

government also issues not fully tradable savings instruments like savings bonds, national saving certificate etc or special securities like oil bonds, fertilizer bonds, power bonds etc.

Types of G-Sec

1. **Treasury Bills (T-bills):** T-bills are money market short term debt instruments which are issued by the central government in three tenures mainly 91-day, 182-day and 364-day. These instruments are zero coupon bonds which pay no interest but are actually issued at a discount and redeemed at the face value at maturity.
2. **Cash Management Bills (CMBs):** CMBs are a new short-term instrument having common characteristic of T-Bills but with a maturity of less than 91-days. These instruments are issued to meet the temporary disparity in the cash flow of the government. CMBs too are issued at a discount and redeemed at face value on maturity.
3. **Dated Government Securities:** These instruments are long-term securities which carry a fixed or floating coupon (interest) rate paid on the face value, which is payable at fixed time periods generally half-yearly. The maximum tenure of these securities is 30 years.

Types of dated instruments:

- **Fixed Rate Bonds** – These bonds have their coupon rate fixed throughout the maturity. The majority of government bonds are issued as fixed rate bonds.
- **Floating Rate Bonds** – These bonds do not have fixed coupon rate. The coupon rates for these bonds are re-set at the pre-announcement intervals (every six months or 1 year) by adding a spread over a base rate. The base rate is the weighted average cut-off yield on the last three 364-day T-Bills auctions prior the coupon re-set interval while the spread cut-off is decided through the auction.
- **Zero Coupon Bonds** – These bonds are issued at a discount to the face value with no coupon rates.
- **Capital Indexed Bonds** – These are bonds where the principal is linked to an accepted inflation index in order to protect the holder against inflation. The government is planning to issue Inflation Indexed Bonds wherein the final wholesale price index (WPI) will be used for indexation. As per the proposed structure, the principal will be indexed and the coupon will be calculated on the indexed principal.
- **Bonds with Call or Put Options** – These bonds are issued with a feature of buyback option (call option) for the issuer or the sell option (put option) for the investor at par value (equal to face value) after the completion of five years from the date of issuance on any coupon date falling thereafter.
- **Special Securities** – It is a long-term dated security carrying coupon rate with a spread of about 20-25 basis points over the yield of the dated securities of comparable maturity. These bonds are issued by the central government to the oil marketing, fertilizer companies etc as compensation in place of cash subsidies. These companies raise cash by divesting these securities in the secondary market to banks, insurance companies etc.
- **STRIPS (Separate Trading of Registered Interest and Principal of Securities)** - STRIPS are instruments wherein each cash flow of the fixed coupon security is converted into a separate tradable zero coupon bond. For instance, when Rs 100 of the 8% GS2020 is stripped, each cash flow of coupon (Rs 4 each half yearly) will become coupon STRIP and the principal payment (Rs 100 on maturity) will become a principal STRIP. These cash flows are traded separately as independent securities in the secondary market. STRIPS have zero reinvestment risk.
- **State Development Loans (SDLs):** These dated securities are issued by state government to raise loan from the market through an auction wherein the interest is paid half yearly and the principal is repaid on maturity.

How are G-Secs issued?

- These securities are issued through auctions conducted by the RBI on the electronic platform called the NDS (Negotiated Dealing System) – Auction platform. The central bank in consultation with the central government issues an indicative half-yearly auction calendar which contains information about the borrowing amount, tenor and the likely period during which auctions will be held. A notification or press release giving exact particulars of the securities and procedure of auction is issued by the government about a week prior to the actual date of auction.
-

Types of Auctions

- **Yield Based** - A yield based auction is generally conducted when a new government security is issued.
- **Price Based** - A price based auction is conducted when government re-issues securities issued earlier.

Depending upon the method of allocation to successful bidders, auction could be classified as

- **Uniform Price Based** – Successful bidders are required to pay for the allotted quantity of securities at the auction cut-off rate, irrespective of the rate quoted by them.
- **Multiple Price Based** - Successful bidders are required to pay for the allotted quantity of securities at the respective price/yield at which they have bid.

Investors may bid under following categories:

- **Competitive Bidding** – Under this bidding an investor bids at a specific price/yield and is allotted securities if the price/yield quoted is within the cut-off price/yield.
- **Non-Competitive Bidding** - This bidding is open to individuals, HUFs, RRBs, co-operative banks, firms, companies, corporate bodies, institutions, provident funds and trusts. Under this bidding eligible investors apply for a certain amount of securities in an auction without mentioning a specific price/yield and are later allotted securities at the weighted average price/yield of the auction.

Major players in the G- Sec market

- Commercial banks and primary dealers besides institutional investors like insurance companies are the major players. Other players include co-operative banks, regional rural banks, mutual funds, provident and pension funds. FIIs are allowed to participate within the quantitative limits prescribed from time to time whereas corporates buy or sell these securities to manage their overall portfolio risk.

Role of Clearing Corporation of India Limited (CCIL)

- CCIL is the clearing agency for G-Sec and it acts as a central counter party for all transactions between two counterparties.

Off Budget Borrowing

Economy

Why in the news?

- Off Budget loans help meet expenses of the Union Government but are not counted in the fiscal deficit as they are not directly borrowed by the Centre.

What is Off Budget Borrowings?

- The loan which is not directly taken by the Union Government but is used to fund the expenses of the Centre is called Off Budget Borrowings.
- Eg. The loans that public sector undertakings were supposed to take on their behalf or the deferred payments of bills and loans by the Centre.

How are off-budget borrowings raised?

- The government can ask an implementing agency to raise the required funds from the market through loans or by issuing bonds. For Example:
- **Food Corporation of India** was asked to take a **loan from the National Small Savings Fund to fund half of the Budgeted Food Subsidy**. This allowed the Centre to halve its food subsidy bill from Rs 1,51,000 crore to Rs 77,892 crore in 2020-21.
- Public sector **oil marketing companies** were asked to **pay for subsidised gas cylinders for PradhanMantriUjjwalaYojana beneficiaries in the past**.
- **Loans from PSU banks** were used to make up **for the shortfall in the release of fertiliser subsidy**.

Criticism of Off Budget Borrowings:

- **CAG, in its 2019 report**, condemned Off Budget Borrowings **for keeping Executive expenses out of Parliamentary Control**.

- **Disguised Fiscal Deficit:** The CAG pegged the actual fiscal deficit for 2017-18 at 5.85% of GDP instead of the government version of 3.46%.
- **Violation of FRBM Act's spirit:** The Off- Budget Borrowings increase the fiscal deficit by an unknown amount and violate the principle of Fiscal Prudence & Inter-Generational Equity regarding spending capacity.
- The severity of the **Crowding-Out Effect** increases.

Presumptive Taxation scheme

Economy

Why in the news?

- The Union Budget 2021-22 proposed to exclude Limited liability partnerships (LLPs) from Presumptive Taxation.

About Presumptive Taxation scheme

- Presumptive taxation involves the use of indirect methods to calculate tax liability, which differ from the usual rules based on the taxpayer's accounts. Here, the business entity is required to declare a given percentage of his business turnover as his income and has to pay at fixed percentage of it as tax.
- The principle of presumptive taxation is usually imposed on those whose income is low or those who are not covered under usual tax coverage and at the same time have taxable capacity.
- They are aimed to bring small and medium businesses that are sometimes outside the tax net. The scheme asks individuals & businesses to pay tax for their income and makes tax procedure in a quite simple manner.

Advantages of presumptive taxation

- Presumptive technique has certain advantages. One is simplification, particularly in the case of taxpayers with very low turnover. Secondly, presumptive methods of taxation are effective in reducing tax avoidance. Small and medium businesses can be brought into the tax base through presumptive taxation.
- The term "presumptive" is used to indicate that there is a legal presumption that the taxpayer's income is no less than the amount resulting from application of the indirect method.
- Presumptive techniques may be employed for a variety of reasons.
- One is simplification, particularly in relation to the compliance burden on taxpayers with very low turnover.

Presumptive taxation in India

- In India, the Income-tax Act has framed the presumptive taxation scheme under two sections 44AD & 44A.
- The presumptive taxation scheme under section 44AD of the Income Tax Act available for small and medium enterprises (i.e non corporate businesses) sets a limit for presumptive taxation. The limit for such tax has increased to Rs 2 crore of turnover or gross receipts from the existing one crore rupees. The step will help a large number of MSMEs.
- The scheme of sections 44A is designed to give relief to small taxpayers engaged in the business of plying, hiring or leasing goods carriages. Individuals and companies can take advantage of the section.
- In the budget 2016, the government has increased the presumptive taxation turnover limit for MSMEs to Rs 2 crore.
- A person adopting the presumptive taxation scheme can declare income at a prescribed rate and hence will be relieved from tedious job of maintenance of books of account.

ADVAIT (Advanced Analytics in Indirect Taxation)

Economy

Why in news?

- The Ministry of Corporate Affairs (MCA) and Central Board of Indirect Taxes and Customs (CBIC), Ministry of Finance, here today signed a Memorandum of Understanding (MOU) for data exchange between the two organisations.

ADVAIT (Advanced Analytics in Indirect Taxation)

- The data sharing arrangement gains significance in light of development of MCA21 Version 3 which will utilise state of the art technology for enhancing ease of doing business in India and improve the regulatory

enforcement and similar steps by CBIC like the launch of ADVAIT (Advanced Analytics in Indirect Taxation) a 360-degree taxpayer profiling tool.

- The MoU will facilitate the sharing of data and information between MCA and CBIC on an automatic and regular basis.
- It will enable sharing of specific information such as details of Bill of Entry (Imports), Shipping Bill (Exports) Summary from CBIC and financial statements filed with the Registrar by corporates, returns of allotment of shares.
- The MoU will ensure that both MCA and CBIC have seamless linkage for regulatory purposes. In addition to regular exchange of data, MCA and CBIC will also exchange with each other, on request, any information available in their respective databases, for the purpose of carrying out scrutiny, inspection, investigation and prosecution.
- Technology and data will play a critical role going forward in fulfilling the Government's vision of minimum government, maximum governance and both MCA and CBIC are well placed to fulfill this vision.
- The MoU comes into force from the date it was signed and is an ongoing initiative of MCA and CBIC, who are already collaborating through various existing mechanisms.
- A Data Exchange Steering Group also has been constituted for the initiative, which will meet periodically to review the data exchange status and take steps to further improve the effectiveness of the data sharing mechanism.

One Nation on standard

Economy

Why in news?

- Recently, the Consumer Affairs, Food, and Public Distribution Minister Piyush Goyal today laid the foundation to embark on Mission one nation one standard.
- It aims to make India the leader in setting global benchmarks in setting code. It also will review the work of the Bureau of Indian Standards.

Bureau of Indian Standards:

- BIS is the National Standard Body of India constituted under the BIS Act of 2016 for the harmonious improvement of the activities of standardization, marking, and quality certification of goods and for other matters connected through standardization, certification, and verification.
- BIS has been providing traceability and tangibility asset to the national economy in various ways. Providing safe dependable quality goods, curtailing health hazards to users, advertising exports and imports substitute, administering over the proliferation of changes through the methods mentioned above.

Benefits:

- It prepares the industry for more dialogue, participation, and collaboration in this aim of "one nation one standard". The case of giving certification would be kept as simple as possible and duplication of work would be dodged.
- The minister claimed that the plan would ensure the strength and character of the nation through the exemplary standards it sets for the quality of its products and services.
- BIS would explore International partnerships and associations to accomplish exposure in the field.

Feeder Separation

Economy

Why in news?

- The Union Minister for Finance in her budget speech of 2021-22, proposed an outlay of Rs 3,05,984 crore over 5 years for a revamped reforms-based result-linked power distribution sector Scheme. The Scheme will provide assistance to DISCOMS for infrastructure creation, including pre-paid smart metering and feeder separation etc.

About Feeder Separation?

- Feeder separation refers to the **supply of electricity to agricultural and non-agricultural consumers** (domestic and non-domestic) separately through dedicated feeders.

- This arrangement allows the distribution company to regulate power supply to agricultural consumers as and when needed for effective demand side management (DSM).
- The core objective of feeder separation is to provide regulated supply to agricultural consumers and continuous supply to non-agricultural consumers in rural areas.

Current status of Feeder separation in India

- Feeder separation programmes have been successfully completed in Gujarat, Andhra Pradesh, Punjab, Rajasthan, Haryana and Madhya Pradesh, among other states.

Advantages

- It ensures better load management and increased power supply to rural households and small industries.
- It helps in flattening the load curve by shifting the agricultural load to off-peak hours, thus facilitating peak load management.
- For states with low levels of metered sales, feeder segregation allows greater revenue potential for discoms as it helps in reducing the theft and technical losses that prevail in unmetered agricultural consumption.
- It also helps in reducing the peak power purchase cost through better distribution of agricultural load, leading to savings for discoms.
- As per the survey conducted by the World Bank in 2014, prior to feeder segregation, more than 80 per cent of consumers in Rajasthan and Gujarat complained of low voltage problems; post segregation, this came down to 6 per cent.
- Due to the increase in the rural labour force involved in non-agricultural activities, the increase in electricity supply through feeder segregation has also led to several socio-economic benefits, including job creation and improvement in the quality of life.

Feeder Separation under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY):

- Government of India has approved DDUGJY in December, 2014 for separation of agriculture and non-agriculture feeders facilitating judicious rostering of supply to agricultural & non-agricultural consumers in the rural areas, strengthening and augmentation of sub-transmission & distribution infrastructure in rural areas, including metering at distribution transformers/feeders/consumers.
- Feeder separation under DDUGJY involves ensuring judicious rostering of supply to agricultural and non-agricultural consumers in rural areas.
- Under DDUGJY, Feeder separation includes the **physical separation** of high tension (HT) feeders for agricultural and non-agricultural consumers, and the **virtual separation of feeders**
- Virtual feeder separation involves installation of single phase DTs on existing HT lines for domestic consumers
- This entails the erection of HT lines for drawing new feeders and the reorientation/re-alignment of existing lines, installation of new distribution transformers (DTs) and augmentation of existing DTs, and relocation of DTs and associated low tension (LT) lines for re-grouping of agricultural and non-agricultural consumers.
- Feeders already segregated by the utilities are not covered under this scheme

Solar Energy Corporation of India

Economy

Why in news?

- Finance Minister in her budget speech 2021-22 announced capital Augmentation of Solar Energy Corporation of India Limited (SECI)

Budget allocation and its significance:

- To give a further boost to the RE sector, an additional capital infusion of Rs 1,000 crore to SECI has been provided which will enable SECI to float 15,000 MW of tenders on yearly basis.
- On a yearly basis, it will attract investment of more than Rs. 60,000 crore, generate employment of 45,000 job years and reduce emissions of 28.5 million tons of CO₂ per year.
- Capital infusion will also enable SECI to set up innovative projects with investment of around Rs. 17,000 Cr.

About the Solar Energy Corporation of India Limited (SECI)

- It is a Central Public Sector Undertaking (CPSU) under the administrative control of the **Union Ministry of New and Renewable Energy (MNRE)**
- It was established in **2011** to facilitate the implementation of **Jawaharlal Nehru National Solar Mission (JNNSM)** and achievement of targets set therein.
- It is the only CPSU dedicated to the solar energy sector.
- It was originally incorporated as a **section-25 (not for profit)** company under the **Companies Act, 1956**.
- However the company has recently been converted into a **Section-3 company** under the **Companies Act, 2013**.
- The mandate of the company has also been **broadened to cover the entire renewable energy domain**

Role of SECI

- The company is responsible for implementation of a number of schemes of MNRE, major ones being the VGF schemes for large-scale grid-connected projects under JNNSM, solar park scheme and grid-connected solar rooftop scheme, along with a host of other specialised schemes such as defence scheme, canal-top scheme, Indo-Pak border scheme etc.
- In addition, SECI has ventured into solar project development on a turnkey basis for several PSUs.
- The company also has a power trading license and is active in this domain through trading of solar power from projects set up under the schemes being implemented by it.
- It plans and calls for tenders for development of Renewable Energy(RE) projects on a pan-India basis.
- SECI procures RE power at a central level, thereby reducing the off-taker risk of RE developers and sells it to DISCOMs.
- SECI's efforts have resulted in flow of investments from all over the world into the country's RE sector, and in a rapid decline in RE tariffs, which has led to large-scale uptake of RE in the country.
- The cumulative capacity installed in the country as on 31.12.2020 is 91,000 MW and further 50,000 MW of the projects are under implementation of which SECI's share is 54%.

Draft Blue Economy Policy for India

Economy

Why in news?

- The **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

- **The blue economy** is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem".

Evolution of blue economy

- The philosophy of the **Blue Economy** was first introduced in **1994** at the United Nations University (UNU) to reflect the needs of future growth & prosperity, along with the threats posed by global warming.
- The economic philosophy was based on **developing more sustainable models of development** including concepts of engineering based on "no waste and no emissions".
- The concept of Blue Economy assumed greater importance after the **Third Earth Summit Conference - Rio+20 in 2012** which focused on expanding the concept of Green Economy to include the Blue Economy.
- The concept received a fillip when the **United Nations' SDG 14** sought to "conserve and sustainably use the oceans, seas and marine resources for sustainable development" as a guiding principle for global governance.

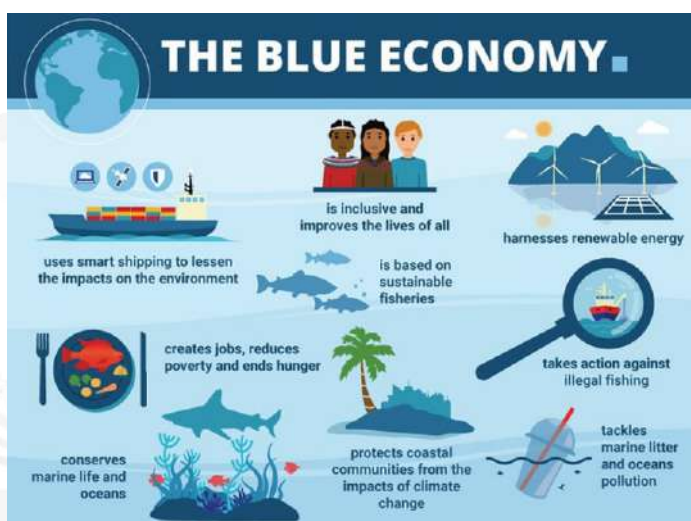
Why India needs a Blue Economy Framework?

- **Increase in global importance of Blue Economy:** The countries like Australia, Brazil, U.K., U.S., Russia, and Norway have developed dedicated national ocean policies with measurable outcomes and budgetary provisions.

- The countries like Canada and Australia have enacted legislation and established hierarchical institutions at federal and state levels to ensure progress and monitoring of Blue Economy targets.
- **Connecting Indian island territories with mainland:** Its objective is to connect our island territories to submarine optical fiber cables to ensure high-speed broadband connectivity for the islands at par with services in the mainland.
- **India has a unique maritime position:** India's Exclusive Economic Zone of over two million square kilometers is rich in living and non-living resources and holds significant recoverable resources of crude oil and of recoverable natural gas.
- **Sizeable contribution of Blue Economy in GDP:** The size of the Blue Economy in India has conservatively been estimated to be about 4% of Gross Domestic Product.

Significance of Blue Economy to India

- **Key Driver in India's Economic Prosperity:** The coastal economy sustains over 4 million fishermen and other coastal communities and with these vast maritime interests, the Blue Economy in India has a vital relationship with the nation's economic growth.
- **Blue Economy is defined as a subset of the national economy:** It should comprise of the entire system of ocean resources and man-made economic infrastructure in marine, maritime and the onshore coastal zones within India's legal jurisdiction.
- It should aid in the production of goods and services and have clear linkages with economic growth, environmental sustainability and national security.
- **Revenue generation from Marine biology and biotechnology:** India has projected revenue generation of USD 100 Million by 2025 through biological and bio-technology industrial growth and therefore there appears to be enormous potential from ocean based resources.
- **Crucial role in sustaining growth for trade and commerce:** The blue economy supports 95% business with sea transportation, oil and petroleum resources using Indian Ocean as the economic hub.



Vision of India's Blue Economy Framework

- **Satellite based initiatives for Indian Coastline:** India has come a long way with the launch of new programmes such as "Deep Ocean Mission," "Oceanography from space" and "Launching of the data buoys" along the Indian coastline.
- The Ministry of Earth Sciences (MoES) has joined the United Nations on the "Clean Seas Programme" to develop strategies for estimating and reducing Marine Litter/Plastic in the ocean.
- **Vision of New India 2030:** It highlighted the Blue Economy as one of the ten core dimensions of growth which called for a coherent policy integrating different sectors so as to improve the lives of the coastal communities and accelerate development and employment.
- **Focus on key parameters of Economic Growth:** The policy framework needs to enhance the country's GDP by promoting sustainable and inclusive economic growth in this new domain.
- It should align India's development agenda with national security goals and international commitments.
- **Blue Economy policy has to encompass many aspects:** It must include economically valuable resources in water, as well as on and under the sea beds, onshore infrastructure, maritime routes connected with domestic and international trade, and offshore energy resources.
- It must envisage new and emerging marine technologies and latest developments in science.
- It must look at production of goods and services from fisheries, marine manufacturing, shipping, and tourism that are connected with the sea and the oceans.
- **Recognition of emerging economic and strategic axis:** India should recognize an important emerging economic and strategic axis that spreads from the East Coast of Africa to the Western Pacific Ocean, which can be called the Seychelles-Singapore-Samoa (SSS) axis.

- **Proper utilization of India's vast oceanic resource:** India should strive for efficient and sustainable utilization of ocean resources and to integrate and Boost Ocean related capabilities, capacities and skills, with a view to accelerate employment and gross value addition.
- **Universal agreed definition of Blue Economy:** It is required that the conceptualization of the Blue Economy has to be multidimensional and inter-sectoral.
- It is critical that each country should define its parameters in its own context.

Challenges to development of blue economy governance in the Indian Ocean

- **Indian Ocean Diversity makes effective regional cooperation difficult:** The Indian Ocean states are connected to each other by historical ties but their diversity in terms of population, country size, natural resources and cultural heritage makes effective regional cooperation difficult.
- **Presence of gaps in governance arrangements of the Indian Ocean:** The complex regulatory landscape that involves divergent sovereign laws, regional arrangements as well as international laws contributes to additional challenges.
- **Lack of teeth in regional blue economy policies:** While most of the Indian Ocean countries have formulated their own fisheries regulations, they lack proper standards, guidelines and enforcement mechanisms owing to limited data and capacity constraints.
- **Regional imbalances in Indian Ocean countries:** The IORCs are faced with the common pressing challenges of increasing urbanisation, industrialisation and migration, resulting in over-exploitation of natural marine resources.
- **Lack of coherent regional arrangement in the Indian Ocean:** The lack of governance mechanism, poor data and resources suggests that there are very few institutions, finance and technical resources available to deal with the challenges.

Measures to be adopted for India's Blue Economy Policy

- **National Accounting Framework for Blue Economy and Ocean Governance:** It will collect data for estimating the Blue Economy in India.
 - Its primary objective will be to identify sectors and sub-sectors/ activities, which fall under the purview of the Blue Economy.
 - It is required to establish active scientific collaborations with leading countries/institutions to develop suitable scientific tools and methodologies relevant to Blue Economy measurement and management.
- **Coastal Marine Spatial Planning and Tourism:** India needs to adapt the Coastal Marine Spatial Planning (CMSP) approach of the Intergovernmental Oceanographic Commission (IOC)-UNESCO (2009) guidelines.
 - India needs to proactively expand domestic human resource capacities needed for the implementation of the CMSP which can be achieved by providing impetus to Blue Knowledge in higher educational institutions.
- **Marine Fisheries, Aquaculture and Fish Processing Sector:** It is required to develop a new national policy for the marine capture fisheries sector, putting in place legal and institutional frameworks for the effective management of marine fisheries.
- **Manufacturing, Emerging Industries, Trade, Technology, Services and Skill Development:** The "Blue" aspect of manufacturing, trade, technology services and skills has to be identified carefully but should remain integrated with the larger interconnections within the national economy.
- **Logistics, Infrastructure and Shipping (Including Transshipments):** The government should formulate a 30-year holistic shipbuilding plan to be implemented across existing and future greenfield indigenous shipyards under the Atmanirbhar initiative to give a boost to shipping and ship-building sector.
- **Coastal and Deep-Sea Mining and Energy:** The development of manned submersibles is a major requirement before mining is commenced and undertaking a manned submersible mission by 2023 is recommended.
- **Security, Strategic Dimensions and International Engagements:** It is required to set up a multi-sectorial and well integrated high level institutional mechanism for policy formulation, implementation and monitoring of various aspects of Blue Economy to ensure greater synergy between sectors and higher budgetary allocations.

Vehicle Scrapping Policy

Economy

Why in news?

- Recently, The Finance Minister announced the "Vehicle Scrapping Policy" in her Budget speech

Features of Vehicle Scrappage Policy

- The policy pitches for mandatory disposal of more than 20-year-old commercial vehicles from 2020 (when BS-IV emission norms come into force). It institutes incentives to encourage voluntary replacement.
- It seeks replacement of old vehicles in a phased manner starting with commercial vehicles and later expanding to private four-wheeled vehicles.
- It proposes lesser tax (GST) of 5% or a complete waiver on replaced commercial vehicles instead of 28% levied currently on commercial vehicles and on those carrying 10 or more persons. This will incentivize scrapping of old vehicles.
- It also moots concessional rates on new vehicles for buyers who replace old vehicles which can be availed by showing documents evidencing sale of an old vehicle. The benefit offered is expected to be around 15% of vehicle price.
- Vehicle scrapping centres will be opened by the department of heavy industries to prepare the ecosystem for implementation of the policy. Many such clusters would be developed in proximity to ports under the Sagarmala initiative. These clusters would process scrap vehicles from across the globe, separate and recycle their components and in turn, bring down prices of automobile parts.



Why we need Vehicle Scrappage Policy?

- According to the Centre for Science and Environment (CSE), **by 2025 India will have over two crore old vehicles nearing the end of their lives.** Not only that, India adds 1,400 vehicles every day. The scrappage policy will reduce the congestion on the roads.
- A logical extension of NGT ruling for Delhi NCR and Scrappage policy of Government Vehicles.**
- In 2015, National Green Tribunal barred diesel vehicles older than 10 years to commute on Delhi NCR roads. The scrappage policy is the next step to prevent them from further commuting on roads.
- Further, the government accepted the Scrappage policy for Central and State Government vehicles older than 15 years on January 25, 2020. The policy will come into effect on April 1st, 2022.
- Apart from that, the government also introduced a draft **Vehicle Fleet Modernization Programme** in 2016. But the project never got materialized.
- IIT Bombay's conducted a multi-city study in 2014. The study estimated that **pre-2005 vehicles were responsible for 70 per cent of the total pollution load from vehicles.** The scrappage policy will be a shot in the arm for these polluting vehicles.

Merits associated with such a policy

- Stimulate the industry :** The policy will stimulate the domestic automobile and automotive industry. The **automobile industry is projected to grow at an annual rate of 22%** if this policy is implemented properly.
- Organized scrapping :** Apart from that, it will provide a massive opportunity for players in the organised scrappage and recycling industry. The scrapping will provide **recovery of steel, aluminium, plastic** etc. and boost the industries associated with it.
- Pollution mitigation:** Old vehicles are not compliant with Bharat Stage VI emission standards. This is leading to more air pollution. For example, one 15-year-old vehicle has emissions equivalent to 25 new-generation vehicles. The scrappage policy will reduce the pollution level by 25 percent as compared to old commuting vehicles.
- Promotes government revenues:** The revival of the automobile and other sectors associated will boost the tax revenues. According to an estimate, taxes from the automobile sector will amount at Rs 10,000 Crores, if scrappage policy is implemented properly.

- **Containing oil imports:** According to the BEE (Bureau of Energy Efficiency) estimates, India has to enforce Scrapping old vehicles and shifting towards higher fuel efficiency norms. If it is achieved, then as per the BEE estimates, "there will be a reduction of 22.97 million tons of fuel demand in India by 2025". This will help in saving oil import and associated costs.
- **Fulfilling India's International commitments:** India has committed to the Paris Agreement on Climate Change and provided national targets for reducing emissions. The Scrappage policy will reduce the pollution level and also fulfil India's commitment to reduce CO2 levels to tackle Climate Change.

Challenges associated with the Policy:

- **Lack of clarity over incentives:** The scrappage industry may provide incentives for scrapping older vehicle (like recovery of scrap, steel etc.). The government is not a direct beneficiary except the environmental cost. Thus, providing incentives from public money might not be feasible.
- **Limited financial resources:** In rural areas, **old vehicles are being used** as the owners have very limited financial resources to purchase new vehicles.
- **Lack of SOP's:** India so far has only one government-authorized scrappage workshop in Greater Noida. Also, the government do **not have any standard operating procedures (SOP)** for setting up of vehicle scrapping centres. Formulating a policy without having the capacity will lead to accumulation of old vehicles like solid wastes.
- **Lack of pollution norms:** Regulation of pollutants released during scrapping. The scrapping of Vehicle will release **toxic metals like mercury, lead, cadmium or hexavalent chromium**. If not properly regulated, it will pollute the environment and have long-lasting consequences.
- **Vintage cars:** Lack of clarity over scrapping of vintage cars creates issues associated with classic cars.

What else is needed?

- Linking scrappage incentives with buying of electric vehicles is necessary. Such a special linkage of policy is necessary at the national level to promote the electric vehicle.
- There must be an exception for Vintage and Classic cars. The government also have to introduce a provision for Modern Classics.
- As suggested by Centre for Science and Environment. There should be a separate effort to **include Extended Producer Responsibility (EPR)** in collecting the car for scrapping. Apart from that, there should be legally binding rules **for scrapping**. The scrappage scheme should **incentivise replacement of old vehicles with EVs**. On the other hand, the government should also frame a policy **to reduce the purchasing of traditional petroleum-powered vehicles**.

Grand Ethiopian Renaissance Dam

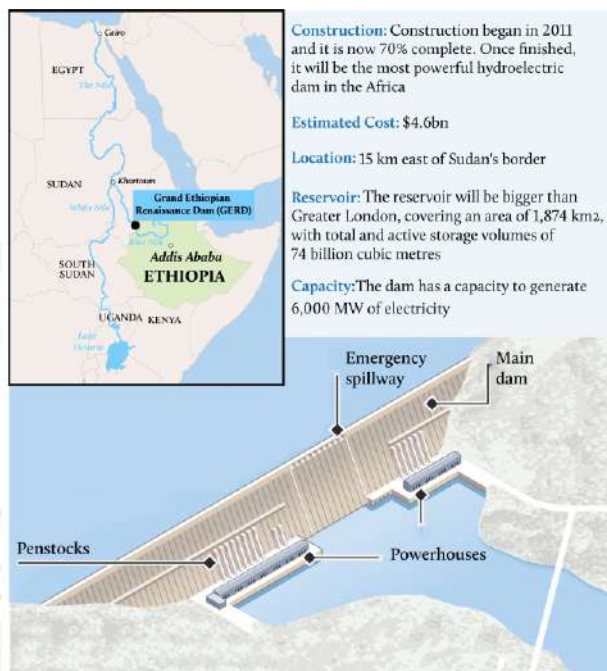
International Relations

Why in the news?

- Ethiopia is building one of the largest dams in the world, the Grand Ethiopian Renaissance Dam (GERD), on the river Nile near the Sudan border.

Grand Ethiopian Renaissance Dam

- Spearheaded by Ethiopia, the 145-meter-tall (475-foot-tall) Grand Renaissance Dam hydropower project, when completed, will be Africa's largest.
- Its construction was initiated in 2011 on the Blue Nile tributary of the river that runs across one part of Ethiopia.
- The Nile is a necessary water source in the region and Egypt has consistently objected to the dam's construction, saying it will impact water flow.
- The long-standing dispute has been a cause of concern for international observers who fear that it may increase conflict between the two nations and spill out into other countries in the Horn of Africa.



What is the dispute?

- The **Nile, Africa's longest river**, has been **at the center of the dispute involving several countries** that are dependent on the river's waters. **Ethiopia and Egypt** are at the forefront of this dispute and **Sudan's location between Egypt up north and Ethiopia down south** has caused it to become an **inadvertent party** to this dispute.

Reasons behind the dispute

- Given the dam's location, it would **potentially allow Ethiopia to gain control of the flow of the river's waters**, which is a cause of concern for Egypt as it lies further downstream.
- Ethiopia's control over the water could result in **lower water levels within Egypt's borders**.
- When the plan was announced in **2019, Egypt proposed a longer timeline** for the project over concerns that the **water level of the Nile could dramatically drop** as the reservoir fills with water in the initial stages.
- Sudan too is concerned about its water levels** in case of Ethiopia gaining control of the river.

Concerns over the dam

- Given the dam's location on the Blue Nile tributary, it would potentially allow Ethiopia to gain control of the flow of the river's waters.
- Egypt lies further downstream and is concerned that Ethiopia's control over the water could result in lower water levels within its own borders.
- In addition, Egypt proposed a longer timeline for the project over concerns that the water level of the Nile could dramatically drop as the reservoir fills with water in the initial stages.
- Sudan's location between Egypt up north and Ethiopia down south has caused it to become an inadvertent party to this dispute.
- But that isn't all; Sudan too is concerned that if Ethiopia were to gain control over the river, it would affect the water levels Sudan receives.

Concerns Around Dispute:

- The dispute has been a cause of concern for international observers who fear that it may increase conflict between the two nations and spill out into other countries in the Horn of Africa.

Ethiopia's Stand:

- Ethiopia's goal is to **secure electricity for its population** and to **sustain and develop its growing manufacturing industry**.
- The dam will generate **approximately 6,000 MW of electricity** which will fulfill the needs of population and industries.
- In order to **generate revenue**, Ethiopia might want to **sell surplus electricity to neighbouring nations** like Kenya, Sudan, Eritrea and South Sudan, that also suffer from electricity shortages.

Pakistan to remain in grey list of FATF**International Relations****Why in the news?**

- The **Financial Action Task Force (FATF)** has decided to retain Pakistan on the "grey list" till the next review of its performance on its recommendations during the June Plenary session.

About FATF decision

- FATF **acknowledged Pakistan's significant progress in combating terrorism**, however it was **still to fully comply with three of the 27-point action plan**.
- The **three points** pertain to **effective steps in terms of financial sanctions and penalties** against the terror funding infrastructure and the entities involved.
- After assessing the measures taken during the June 2021 session, the FATF would verify the implementation and test the sustainability of reforms undertaken by Pakistan, to review its inclusion or exclusion on the grey list.

Significance of the decision

- In Pakistan's case, the **FATF has taken cognisance of the inaction against several banned organisations** involved in raising funds for terror activities and those linked to global terrorists like Jaish-e-Mohammed chief Masood Azhar and **Lashkar-e-Taiba's** Hafiz Saeed and its operations chief Zaki-Ur Rahman Lakhvi.
- On several occasions, India has also raised the involvement of elements within Pakistan in a number of terror cases, including the **26/11 Mumbai** and **Pulwama attacks**.
- Perpetual containment of Pakistan on the grey list of FATF would further pressurise Pakistan to take adequate measures to prevent such terrorist attacks on India from its soil.

Financial Action Task Force:

- It is an inter-governmental body established in 1989 during the **G7 Summit** in Paris.
- The FATF assesses the strength of a country's anti-money laundering and anti- terror financing frameworks, however it does not go by individual cases.
- **Objectives:**
- To set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.
- **Headquarters:**
- Its Secretariat is located at the **Organisation for Economic Cooperation and Development (OECD)** headquarters in **Paris**.
- **Member Countries:**
- The FATF currently has **39 members** including two regional organisations — the European Commission and **Gulf Cooperation Council**. **India** is a member of the FATF.
- **Lists under FATF:**
- **Grey List:**
 - Countries that are considered **safe haven for supporting terror funding and money laundering** are put in the FATF grey list.
 - This inclusion serves as a warning to the country that it may enter the blacklist.

- **Black List:**
 - Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put in the blacklist.
 - These countries support terror funding and money laundering activities.
 - The FATF revises the blacklist regularly, adding or deleting entries.
- **Sessions:** The **FATF Plenary** is the decision making body of the FATF. It meets **three times per year**.

India-Mauritius

International Relations

Why in the news?

- The Union Cabinet has approved signing of the Comprehensive Economic Cooperation and Partnership Agreement (CECPA) between India and Mauritius.

About the agreement

- It is a limited agreement that will cover only select sectors. The agreement covers Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT). Further, the agreement also covers Sanitary and Phytosanitary (SPS) measures, Dispute Settlement, Movement of Natural Persons, Telecom, Customs Procedures and Cooperation.
- The two countries have also agreed to negotiate an **Automatic Trigger Safeguard Mechanism (ATSM)**. They will negotiate on ATSM for a limited number of highly sensitive products within two years of the Signing of the Agreement.

Timeline:

- The Agreement will be signed by both the countries on a mutually convenient date and will come into force from the 1st date of the following month.
- Once signed, this will be the first such trade agreement between India and an African nation.

India-Mauritius Economic Relations:

- Mauritius is an important development partner of India.
- India had extended a '**Special Economic Package**' of USD 353 million to Mauritius in 2016. The new Mauritius Supreme Court building project is one of the projects implemented under this package. This was jointly inaugurated by both the countries in 2020.
- According to the International Trade Centre (ITC), in 2019, **the main import partners of Mauritius** were India (13.85%), China (16.69%), South Africa (8.07%), and UAE (7.28%).
- **The bilateral trade between India and Mauritius** has registered a growth of 233% from USD 206.76 million in the Financial Year (FY) 2005-06 to USD 690.02 million in FY 2019-20.

Mutual benefits

- More than 300 domestic goods from agriculture, textiles, electronics and other sectors will **get market access at concessional customs duties** in Mauritius.
- More than 300 domestic goods from agriculture, textiles, electronics and other sectors will **get market access at concessional customs duties** in Mauritius.

What is Automatic Trigger Safeguard Mechanism (ATSM)?

- It is a special safeguards mechanism included in the agreement. This will protect the country from any sudden or dramatic increase in imports. Under this mechanism, If the imports of a product are rising alarmingly, then after reaching a certain **threshold**, India can impose **safeguard duties** on imports from Mauritius automatically. The same provision applies to Mauritius as well against Indian imports.

India relations with Mauritius

- **Historical Ties**
- Mauritius maintained contacts with India through successive **Dutch, French and British occupation**.
- From the **1820s**, Indian workers started going to Mauritius to work on **sugar plantations**.

- From **1834**, when **slavery was abolished by the British Parliament**, large numbers of Indian workers were taken to Mauritius as **indentured labourers**.
- **2nd November 1834** marks the day when the ship '**Atlas**', carrying the **first batch of Indian indentured labourers**, docked in Mauritius.
- Currently, this day is observed in Mauritius as '**Aapravasi Day**'.
- **Indian origin population** constitutes **about 68%** of the Mauritian population.
- As a tribute to Gandhiji and the Indian freedom struggle, the **National Day of Mauritius** is celebrated on 12th March (the date of the launch of **Dandi Salt March in 1930**).
- **Political Relations**
- **Diplomatic relations** between both countries were **established in 1948**.
- **High-level visits** have been one of the significant aspects of bilateral relations.

Economic Relations

- **Since 2005**, India has been among the **largest trading partners of Mauritius** and has been **one of the largest exporters of goods and services to Mauritius**.
- The bilateral trade between India and Mauritius has registered a **growth of 233% from USD 206.76 million** in the Financial Year (FY) **2005-06 to USD 690.02 million** in **FY 2019-20**.
- India's exports to Mauritius surged 232% from USD 199.43 million in FY 2005-06 to USD 662.13 million in FY 2019-20, while India's imports from Mauritius increased 280% from USD 7.33 million in 2005-06 to USD 27.89 million in FY 2019-20.
- Mauritius was the **second top source of Foreign Direct Investment (FDI) into India** in **2019-20**.
- **India's Exports to Mauritius:** Petroleum products, pharmaceuticals, cereals, cotton, shrimps and prawns, frozen boneless bovine meat.
- **India's Imports from Mauritius:** Vanilla, instruments and apparatus for medical/surgical sciences, needles, Aluminum alloys etc.
- The protocol amending the **India-Mauritius Double Taxation Avoidance Convention (DTAC)** was signed in **May 2016**.
- **Eleven Indian Public Sector Enterprises** are currently functioning in **Mauritius**.
- **For example**, the Bank of Baroda (BoB), Life Insurance Corporation (LIC), and New India Assurance Corporation (NIAC), etc.
- Besides their core activities, the PSUs have also **contributed to various activities** in Mauritius under the **Corporate Social Responsibility (CSR)** schemes.

Defence

- The **naval relationship** between Mauritius and India is **symbiotic**.
- India gets a **reliable partner** in Mauritius and through the coastal radar network has effectively extended its **maritime surveillance capability** into the **Southern Indian Ocean**.
- Mauritius benefits by **drawing on the experience of professional Indian Navy and Air Force officers** as well as being able to **avail itself of naval vessels** being produced at Indian shipyards at competitive prices and attractive financing packages.
- In addition to training carried out during Indian Navy visits, under the **Indian Technical and Economic Cooperation Program II Division (ITEC-II)**, between 45 and 50 personnel of the **Mauritius National Police Force (MPF)**, are trained annually in Indian defence training establishments.
- The **INS Amar**, an **ex-Indian Navy Seaward Defence Boat** was transferred to **Mauritian National Coast Guard (NCG)** in April 1974 and served as the country's only naval vessel for over two decades.
- In addition, **Mauritius has been able to avoid having to create dedicated military forces**, maintaining very modest paramilitary capabilities relative to its neighbours.

Cultural Relations

- The **Indira Gandhi Centre for Indian Culture (IGCIC)**, one of the largest centres of the **Indian Council for Cultural Relations (ICCR)**, has emerged as an important venue for the **promotion of Indian cultural activities** in Mauritius.
- The **Cultural Exchange Programme (CEP)** for **2018-2021** was renewed in March 2018.
- The "**India Week**" was organised in Mauritius in **April 2018** to commemorate the 50th anniversary of Mauritius's independence.

- The **Mahatma Gandhi Institute** (MGI) was founded as a joint venture for the promotion of Indian culture and education.
- Mauritius also hosts the **World Hindi Secretariat**, which is a bilateral organization and was inaugurated in March 2018.
- **Education and Scholarships**
- Mauritius is one of the largest beneficiary countries of the Indian Technical and Economic Cooperation (ITEC) programme.
- Mauritius is the largest beneficiary of Africa Scholarships under the India-Africa Forum Summit (IAFS).
- Every year, about 200 Mauritian students enrol themselves in Indian Universities. India ranks fourth in terms of Mauritian students studying in overseas tertiary education institutions.

India-assisted Projects

- In May 2016, India extended a 'Special Economic Package' of USD 353 million for the execution of projects of priority of the Mauritius Government.
- It was for the Metro Express Project, Supreme Court Building, Social Housing project, etc.
- In August 2018, the Cyber Tower in Ebene (the business district of Mauritius) was renamed as Atal Bihari Vajpayee Tower.

Indian Community and OCI Card

- There are nearly 10,000 Indian nationals in Mauritius and the number of Overseas Citizenship of India (OCI) cardholders in Mauritius is about 8500.
- In January 2017, a special carve-out for OCI Cards, only for Mauritius, without any restriction on the number of generations, was announced.
- In October 2004, Mauritius introduced a visa-free regime for Indian tourists in which Indian tourists visiting Mauritius for a period of up to 30 days do not require a visa.
- Mauritians are entitled to a gratis (free) E-tourist visa for visiting India.

Humanitarian Assistance during Covid-19

- Since the beginning of the coronavirus pandemic, India has extended steadfast support to Mauritius in dealing with the crisis. Mauritius was among the first and largest beneficiaries of India's Covid-19-related assistance.
- Under Mission SAGAR (Security and Growth for All in the Region), India supplied essential medicines and also sent a special Indian Medical Assistance Team.
- Under India's vaccine diplomacy (VaccineMaitri), a consignment of 1 lakh doses of the Covishield vaccine was sent to Mauritius.

Significance of Mauritius as Regional Hub

- It can support India's own African economic outreach as the era of new investments pouring into Africa.
- India deals with the islands of the southwestern Indian Ocean (Comoros, Madagascar, Mauritius, Mayotte, Reunion and Seychelles) on a bilateral basis but if it considers them as a collective, Mauritius could be the axis of India's island policy.
- It can facilitate a number of Indian commercial activities like a banking gateway, a hub for flights to and from Indian cities and tourism in the southwestern Indian ocean.
- India could also contribute to the evolution of Mauritius as a regional centre for technological innovation.
- Being an island nation, climate change, sustainable development and the blue economy are existential challenges for Mauritius so it is the right partner in promoting Indian initiatives in these areas and can also become a valuable place for regional and international maritime scientific research.
- Strategically also, for security cooperation in the southwestern Indian Ocean, Mauritius can serve the demands of all the island nations around it as well as the East African states.

Chinese Dam Projects on Brahmaputra

International Relations

Why is it in news?

- The Chinese government's new five-year plan (2021-2025) is about to approve the construction of dams in the lower stretch of the Brahmaputra River (Yarlung Zangbo in China).

China's plan for dams

- China's draft five-year plan (2021-25) and long-range objectives till 2035 mention the building of hydropower bases on the lower reaches of the Brahmaputra river. The lower reaches refer to the sections of the river in Tibet before it flows into India.
- The dam proposal is among the priority energy projects undertaken by the Chinese government in the next five years. Other projects under the draft five-year plan include "clean energy bases" in the upper and lower reaches of the Jinsha River. (the upper course of the Yangtze River in western China).
- It would be **the first time** that the lower stretch will witness such development of dams, marking a radical change in river water exploitation.
- China had earlier built dams on upper stretches of the river including Zangmu Dam in 2015. **Three more dams** at Dagou, Jiacha and Jeixu are currently **under construction**.



Significance of such dams for China

- The construction would help the country develop **clean energy** and curb the **rising pollution levels**. This would improve citizens' health and augment water security.
- The dam would also allow it to fulfill its **international climate commitments** under multilateral agreements like the **Paris Agreement**.
- China's **location of the upper riparian state** would allow it to control water flow towards the lower riparian states (India and Brahmaputra). This will give **greater bargaining power** to China in international relations.
- Further, the project in the lower stretch is part of the country's significant planned investments in infrastructure for **serving national interests**.

Importance of Brahmaputra to India

- The river Brahmaputra and its tributaries carry more than 30 percent of the total **water resource** potential of India.
- The residents of 22 districts in the Indian state of Assam rely on the Brahmaputra and its tributaries for their **livelihood**. The river system supports the subsistence agriculture of 66 million people.
- The river is also extremely important for the **transportation** of people and materials.
- This region is home to **several species of flora and fauna** that are unique to this part of the world. For example, The Kaziranga National Park houses 15 mammalian species that are listed as threatened in the IUCN conservation list.

Rules or statutes governing Brahmaputra water sharing

- There is a lack of a cooperative framework for managing river systems in South Asia. There are **no binding agreements between India and China on Brahmaputra** water sharing.
- India and China signed a **Memorandum of Understanding (MoU) in 2002** for the sharing of hydrological data. Under this China agreed to share information about the discharge of water at three stations from June 1 to October 15 each year. This would improve planning and flood control in India during the monsoon region.
- The two countries have **even signed an MoU in 2013** regarding the sharing of water flow data.
- A unilateral stoppage in data sharing was seen from the Chinese side during the 2017 Doklam Standoff but data sharing resumed in 2018.

Impacts of China's Dams on India

- China could use dams as a **water weapon during the war and in peacetime**. By building dams China can disrupt the lower riparian states by following ways,
 - First, China could alter the water level in lower riparian states by changing the storage/ discharge capacity of the dam.
 - Second, China's large run-off from river dams can be easily converted into storage dams in the future. This can **deprive water to India in dry seasons or flood it with water during the monsoon**.
 - The Institute for Defence Studies and Analyses (IDSA) has also highlighted this vulnerability.
 - The **ecological character** of the river in lower courses **gets deteriorated**. This is proved by the Siang river (Brahmaputra's name in Arunachal). After the reduction in water level, the river turned black with pollutants. This **impacted the drinking water availability** for the locals.
 - It may also negatively impact the **food security and livelihood of people** residing across the river. Experts have pointed out that dam construction could cause the **river to lose its silt and lead to a reduction in agriculture productivity**.
 - Dam construction by upper riparian states **enhances the disaster's magnitude** in lower riparian states. For instance, a US government-funded study showed that a series of new dams built by China on the Mekong River had worsened the drought conditions in downstream countries.
 - Further Himalayan region is **highly sensitive to construction**. Due to this, the probability of disasters will get enhanced if big dams are created by China. This was proved by the recent Uttarakhand floods and the 2015 Nepal earthquake.
 - It could open **a new front of conflict along the Arunachal Pradesh** region as Brahmaputra enters India through this stretch. Managing this would be a complex task for India as it is already struggling to counter China along the eastern Ladakh region.
 - China may decide to stop the flow of the river as a means of retaliation to **make India submit to China's demands**.

Challenges in bilateral Cooperation on dam construction

- Rising mistrust **between the countries**: The mistrust reached a new peak especially after the **nine-month-long military stand-off** along the Line of Actual Control (LAC). Further, China was reluctant to share the correct information with India under the 2002 MoU.
- Further, China in the past has rejected the claim of building Zangmu Dam on the Brahmaputra till 2010. But in 2010 China not only admitted the construction of the Zangmu Dam but also completed it in a much rapid phase.
- The growing closeness of Indo-U.S relations and **enhanced resentment of Sino- U.S relations** can act as a barrier in concluding a favorable water-sharing agreement.
- **Emerging risks like** climate change, extreme events, landslides, forest fires, and many other environmental threats pose new governance challenges.
- China tries to **encircle India using its neighbors**. It charges approximately \$125,000 for the data it provides to India. On the other hand, it sends similar data to Bangladesh for free.

Way forward

- The construction of **a multi-purpose reservoir in Arunachal Pradesh** to offset the impact of the Chinese Dam should be done promptly. The proposed 9.2 BCM 'Upper Siang' project on the Siang river in Arunachal Pradesh will be able to take the excess load of water discharge. Further, it can even store water in case of any deficit.
- As **water is a state subject**, the riparian states in India should be encouraged to use Brahmaputra's water in a rational way to minimize future shortages.
- The focus of **integrated river basin management** should be based on **hydrological boundaries** and not on administrative state boundaries.
- India needs to **restrengthen its relationship with Bangladesh**. India needs to finalise the Teesta river agreement and restore its image as a responsible upper riparian. By doing that, Bangladesh may also cooperate with India against China.
- The country should engage in bilateral talks and enter into a water-sharing agreement with China similar to the **Indus Water Treaty** between India and Pakistan. The new China-India water-sharing agreement should include provisions like,

- The treaty should regulate the amount of water to be released, preserve the quality of the water and the aquatic life.
- It should have a mechanism for water-sharing during times of droughts and abnormal weather.
- If necessary, the international community should also be involved.

Ceasefire Along Line of Control

International Relations

Why is in news?

- **India and Pakistan** have agreed to observe the **2003 ceasefire agreements** along the **Line of Control (LoC)** and all other sectors.
- The agreement comes in the wake of over 5000 instances of Cross Fire Violations (CFVs) along the Line of Control (LoC) and other areas in Jammu and Kashmir, resulting in 46 fatal casualties in 2020.
- The decision was taken after discussion between the two **Director Generals of Military Operations (DGsMO)**.
- **About the agreement:** The **original ceasefire agreement was reached in November 2003**, four years after the **Kargil War (1999)**.
- The 2003 ceasefire agreement remains a milestone as it **brought peace along the LoC until 2006**. Between 2003 and 2006, not a single bullet was fired by the jawans of India and Pakistan.
- But since 2006, ceasefire violations have become the norm with increasing frequency.



Backchannel Diplomacy

- Several **signs indicate that back channel diplomacy led up to the talks** and helped produce a joint statement between the two sides, beginning with **Pakistan Army chief General's call for resolving the Kashmir issue "peacefully"** earlier in the month of February 2021.
- Pakistan **supported India's five proposals for collaboration at the South Asian level** on containing Covid-19.
- **India allowed the aircraft carrying Pakistan Prime Minister a clear passage to Sri Lanka**, where the Pakistani leader declared a USD 50 million defence line of credit for Colombo.
- However, during these apparent signs of back channel negotiations, **both sides have maintained their respective positions on the Kashmir issue**.
- After the Pakistan government moved to provide **provisional provincial status for Gilgit Baltistan** in November 2020, India hit out saying Gilgit Baltistan was an "integral part of India".

Significance of the Latest Re-commitment to the 2003 Agreement:

- The agreement **may contribute to an improvement of the security situation on ground in Kashmir**.
- India has often alleged that many of the ceasefire violations were aimed at providing cover to infiltrating militants. **Infiltration attempts may now drop**, and go some way in **meeting a key Indian demand on cross-border terrorism**.

Line of Control

- The Line of Control (LoC) **emerged from the 1948 ceasefire line negotiated by the United Nations (UN)** after the Kashmir War.
- It was designated as the LoC in 1972, **following the Shimla Agreement** between the two countries.
- LoC is **demarcated upto the Siachen Glacier (Point NJ9842)**- the world's highest battlefield.
- LoC is delineated on a map signed by the Director General of Military Operations (DGMO) of both armies and has the international sanctity of a legal agreement.

Back Channel Diplomacy

- The back channel diplomacy is **one of the diplomatic tactics practiced by states** to achieve the objectives of foreign policy in solving international disputes **outside official bureaucratic structures and formats**.
- It takes place away from the eyes and lenses of the media in order to ensure the confidentiality of information and keep them away from official and media trading until they reach the target.

Myanmar Military Coup

International Relations

Why in news?

- Myanmar military staged a coup **and** dismissed the democratically elected Daw Aung San Suu Kyi's National League for Democracy (NLD) government **over allegations of rigged election**

What explains the coup?

- The Commander in chief, Senior General Min Aung Hlaing was supposed to retire from the military imminently, and the coup seems to be a last-ditch attempt by him to hold onto political power.

Timeline of Myanmar's Political History

- 1992: Than Shwe** emerged as head of the State Law and Order Restoration Council (SLORC) and commander in chief of the Myanmar Armed Forces. Under military rule, he became ruler.
- 2008: Military** wrote **a new constitution** with the following aims.
 - To safeguard military Generals' interests.
 - To promote Shwe loyalists
- Some controversial provisions of this constitution passed by **Junta (a military or political group that rules a country after taking power by force)** amidst Cyclone Nargis via referendum were:
 - Military held 25 percent of the seats of the parliaments. (Art. 14)
 - Military reserved the nomination of ministers of defence, internal security and border affairs for itself. (Art. 17 b)
 - Military had the right to take over power in a state of emergency. (Art. 40 c)
 - The National Defence and Security Council** was set up as the most powerful body during the crisis with military representatives enjoying an upper hand (Art. 201)
- 2010:** NLD under Ms. Aung San Suu Kyi started protests by boycotting 2010 elections. Military-backed Union Solidarity and Development Party (USDP) won.
- 2010-2015:** Military started loosening its grip on government and society.
 - Political prisoners including Ms Suu Kyi were released
 - Censorship was eased.
 - Barak Obama's 2012 visit marked a thaw in US-Myanmar relations.
 - NLD accepted Army written Constitution
- 2015:** NLD won the country's first free and fair election and formed the government. It raised hopes of Myanmar's full transition to democracy.
- 2017:** Military launched a **campaign targeting Rohingyas** in name of Security in order to gain prominence against Suu Kyi. Commander in Chief **Gen. Min Aung Hlaing** was projected as the saviour of the nation. **Social media was also used** to popularise his activities **forcing 7,00,000 Rohingyas** to flee. None of these tactics helped the USDP in 2020.
- 2017-2020: Ms Suu Kyi tried to buy peace with the Army** by supporting its endeavour in Rohingya but failed. She was also criticised by the UN for the same.
- 2020:** Fresh elections arrived. NLD won nearly 80% seats. USDP raised concerns about the fairness and neutrality of elections.
- 2021:** Just before the start of new Parliament, Military staged a coup, declared an emergency and promised a fresh election without any timeline.



How far are the November 2020 elections responsible?

- The military has alleged that the general elections held in November 2020 were full of "irregularities" and that therefore, the results — a sweep for National League for Democracy, — are not valid.
- It is also rumoured that if the military-backed Union Solidarity and Development Party won in the 2020 elections, Min Aung Hlaing may well have been handed the nomination. So personal political interests do seem to be the major motivation.

International reaction

- **U.S.A. and West condemned the coup and reiterated their support for democracy**
- **India Response: India's foreign ministry said it "noted the developments in Myanmar with deep concern".** India seeks a more pragmatic approach, **engaging the military** while pushing for more freedoms and democracy in Myanmar.

The China and World geopolitical factor

- The critical international player in Myanmar is China. China has appointed specific **envoys for Asian affairs**,
- **China de-facto working** on Myanmar-related issues since 2013. The international community, particularly the West, has to factor in China's multi-layered influence on Myanmar.
- Many international **mechanisms comprising Western and** Asian countries that were formed to coordinate strategies on Myanmar were disbanded after the 2015 election
- The **Tatmadaw**, the armed **forces** of Myanmar. The coup stands to hurt the interests of China, India and even the rest of the international community, all of whom were able to do business with Myanmar in their own unique ways.
- The international community's sharp reactions will likely force the Tatmadaw to turn to China.
- The international sanctions are unlikely to have a major impact on the country's largely inward-looking junta and its Generals with little external interests,
- It would still expect Beijing to give them political & diplomatic support both within the region and globally.

For China:

- The coup has complicated its larger regional economic plans in Myanmar, at least for the time being.
- China has recently been cultivating Ms. Suu Kyi, who was keen on a strong relationship with China given the growing criticism she was facing from the West.
- On the positive side for China, decisive western sanctions will force the military to get closer to China.
- For China, given that it does not come with the 'baggage' of democratic norms, it may simply be a matter of rejigging its schedule in Myanmar and getting used to the new scheme of things there. And China will be its biggest beneficiary.
- The China may, has every reason to go easy on the junta and offer them support in return for increasing the Chinese footprint in the country.
- The **Tatmadaw**, which has traditionally not been an ardent fan of Beijing, would have to change its tune. May China's choices are straightforward; it may far more complicate for others, especially India.

Why is Myanmar important for India's national security?

- Myanmar a "key pillar of India's Act East Policy. Its geographically strategic location makes it important for stabilising the politics of Indian states of Nagaland, Manipur and Assam.
- Myanmar's strategic importance has increased even more as China plans to use Myanmar as a military base in its strings of pearl strategy against India.

Issues concerning India

- **India had invested \$ 1.7 billion of aids** and loans to Myanmar for infrastructure development which is inclusive of schools and health care centers.
- India is the second largest market for Burmese exports after **Thailand**. The bilateral **trade stands at approximately \$3 billion** (2019-20).
- India shares **nearly 1600 km** long terrestrial border with Myanmar and a long maritime border with Myanmar and touches Indian states of Mizoram, Nagaland, Manipur and Arunachal Pradesh have security concern.
- **India-Myanmar-Thailand trilateral highway and** the Kaladan Multi-Modal Transit Transport Project. The project will link "**Kolkata to Sittwe**" in Myanmar and then from Myanmar's Kaladan river to India's north-east.
- **An ADSL project for high-speed data links in** 32 Myanmar cities has been completed by TCIL. ONGC Videsh Ltd. (OVL), GAIL, and ESSAR are participants in the energy sector in Myanmar.

India's Dilemma

- **India faces the most challenging dilemma** on how to respond to the military coup in Myanmar.
- The dual power centres of the military and the civilian government suited India quite well as it did not have to worry about hurting the international community's normative concerns or sacrificing its national interests while engaging them both.
- India Myanmar policy was not shaped by a difficult choice between norms and interests:
- Ms. Suu Kyi's political experiment without its faults nor was India's national interests hurt by Tatmadaw.
- **India's national interests, under** the new circumstances, would clearly lie in dealing with whoever is in power in Myanmar,
- India would find it difficult to **openly support the junta** given the strong western and American stance.
- It can ill-afford to offend the junta by actively seeking a restoration of democracy there. Being a close neighbour with clear strategic interests in Myanmar, offending the junta would be counter-productive.
- Ms. Suu Kyi was getting cozy with China, it was the Myanmar military that had been more circumspect, to India delight of course. With Ms. Suu Kyi in detention, Beijing will focus its energies on wooing the Generals
- The tightrope between Idealism and Realpolitik: India's wish and support for democracy in Myanmar may backfire with the presence of a deeper state like Pakistan.

Why Myanmar needs good relation with India ?

- Myanmar is demonstrating its resistance to China's mega infrastructure projects to avoid getting in a debt trap like Pakistan, Sri Lanka and Maldives.
- Myanmar has not been able to attract much-needed large-scale foreign investment to create jobs and looks increasingly towards countries like India to reduce its reliance on Chinese investment.
- India has several infrastructure and development projects with Myanmar, such as India-Myanmar-Thailand Trilateral highway, Kaladan Multi-modal transit transport network, Special Economic Zone at the Sittwe deep-water port.
- Myanmar is developing deeper security cooperation with India as it plans to diversify the procurement of military hardware away from China. In 2019, India emerged as Myanmar's top arms supplier, selling \$100 million of military hardware compared with China's \$47 million. India has also gifted INS Sindhuvir, a Kilo-class submarine, to Myanmar Navy to boost maritime security ties with the country.
- India's commitment to provide humanitarian assistance amid the Covid-19 pandemic makes it a valuable partner. Myanmar has already received 1.5 million doses of a vaccine supplied by India.

Rice exports to Singapore

International Relations

Why in the news?

- **Uttar Pradesh** is set to send a **consignment of 20 tonnes of Buddha Rice**, popularly known as "**Kala Namak**" Rice, one of the **finest varieties of aromatic rice in India**, to Singapore soon
- **About Kala Namak Rice**
- Also known as '**Buddha ka Mahaprasad**' (an offering to Lord Buddha), the Kala Namak Rice has been rebranded as '**Buddha Rice**', presenting it as an offering made to the Buddhist monks, in order to promote it in **Buddhist countries**.
- The packaging of the rice carries a popular quote of Mahatma Buddha saying '**The unique aroma of the rice will remind people about me**'.
- The export of the rice is being seen as a morale booster for farmers cultivating Buddha Rice in Gorakhpur, Deoria, Kushinagar, Maharajganj, Siddharth Nagar, Sant Kabir Nagar, Bahraich, Balrampur, Gonda, Shravasti, which according to the Geographical Indications (GI) share a similar climate.
- In order to promote the production, processing, packaging, and **branding of Kala Namak Rice**, the UP Government has declared it as the **One District One Product (ODOP)** of Siddharth Nagar whereas the Central Government has announced it as ODOP of Basti, Gorakhpur, Maharajganj and Sant Kabir Nagar as well.
- The historically **Kala Namak Rice** was grown at Bajaha Village in Siddharth Nagar district during the period of Mahatma Buddha.
- Meanwhile, a **Kala Namak Rice festival on the pattern of Strawberry Festival** will be held in the state in near future.
- There is also a plan to set up a **Kala Namak Rice Research Centre at Siddharth Nagar** in cooperation with the **International Rice Research Centre, Varanasi**.

International Criminal Court

International Relations

Why in news?

- The International Criminal Court convicted a former commander (Dominic Ongwen) in the notorious Ugandan rebel group the Lord's Resistance Army of dozens of war crimes and crimes against humanity ranging from multiple murders to forced marriages

What is International Criminal Court ?

- The **International Criminal Court** is an intergovernmental organization and international tribunal that sits in The Hague, Netherlands.
- The ICC has **jurisdiction to prosecute individuals for the international crimes of genocide, crimes against humanity, war crimes, and the crime of aggression.**
- The ICC **lacks universal territorial jurisdiction, and may only investigate and prosecute crimes committed within member states, crimes committed by nationals of member states, or crimes in situations referred to the Court by the United Nations Security Council.**
- The ICC began functioning on **1 July 2002, the date that the Rome Statute entered into force.**

The Rome Statute

- **The Rome Statute is a multilateral treaty that serves as the ICC's foundational and governing document. States which become party to the Rome Statute become member states of the ICC.**

Organisation Structure

- The Assembly of States Parties **provides management oversight for the Court, including electing judges and the Prosecutor and approving the ICC's budget.**

Four organs of the ICC

1. **Presidency** conducts external relations with States, coordinates judicial matters such as assigning judges, situations and cases to divisions, and oversees the Registry's administrative work.
 2. **Judicial Divisions** (18 judges in 3 divisions) Pre-Trial, Trial and Appeals – conduct judicial proceedings
 3. **Office of the Prosecutor** conducts preliminary examinations, investigations, and prosecutions.
 4. **Registry** conducts non-judicial activities, such as security, interpretation, outreach, support to Defence and victims' lawyers etc.
- **Trust Fund for Victims provides assistance,** support and reparations to victims.
 - The ICC has **field offices in several of the countries** in which investigations are being conducted.
 - The ICC **detention centre is used to hold in safe, secure and humane custody** those detained by the ICC.
 - The **International Committee of the Red Cross (ICRC) is the Detention Centre's inspecting authority and as such has unrestricted access and examine,** on unannounced visits.

Member Nations

Facts and Figures

- As of November 2019, **123 nations are States Parties to the Rome Statute** and recognize the ICC's authority; the notable **exceptions being the US, China, Russia, and India.**
- 42 states are non-party, non-signatory states.
- India is not a member of the ICC.
- It has **6 official languages** :English, French, Arabic, Chinese, Russian and Spanish.
- It has **2 working languages**:English and French.
- ICC **Headquarters at The Hague, the Netherlands.**
- The Court seeks global cooperation to **protect all people from the crimes codified in the Rome Statute.**

Jurisdiction and Working of Court

- **The Rome Statute, grants the ICC jurisdiction over four main crimes:**
 - 1. **The Crime of Genocide**
 - 2. **Crimes against Humanity**
 - 3. **War Crimes**
 - 4. **Crime of Aggression**
- **The crimes were committed by a State Party national, or in the territory of a State Party, or in a State that has accepted the jurisdiction of the Court**
- **The crimes were referred to the ICC Prosecutor by the United Nations Security Council (UNSC) pursuant to a resolution adopted under chapter VII of the UN charter.**
- **The ICC is intended to complement, not to replace, national criminal systems; it prosecutes cases only when States do not are unwilling or unable to do so genuinely.**
- ICC is not a UN organization but is has a cooperation agreement with the United Nations.
- When a situation is not within the Court's jurisdiction, the **United Nations Security Council can refer the situation to the ICC granting it jurisdiction.**

Limitations of ICC

- **ICC does not have its own police force or enforcement body.**
- ICC acts inconsistently in its selection of cases, is prevented from taking on hard cases and loses legitimacy.
- There is **insufficient checks and balances** on the authority of the ICC prosecutor and judges.
- ICC has been accused of being a **tool of Western imperialism and biased** in favour of powerful countries against weak states.
- ICC **cannot impose a death sentence**; it can impose lengthy terms of imprisonment of up to 30 years or life when so justified by the gravity of the cases.
- The ICC court has **no retrospective jurisdiction** as it can deal only with crimes committed after 1 July 2002 when the 1998 Rome Statute came into force.
- ICC has **automatic jurisdiction only for crimes committed on the territory of a state** which has ratified the treaty; or by a citizen of such a state; or when the United Nations Security Council refers a case to it.
- It also faces **scarcity of human resources and funds.**
- **Procedural and substantive deficiencies leading to delays and frustration**, have questioned the efficacy of the court.

INDIA AND ICC

- **India did not signed the Rome Statute**, and thus, is **not a member of ICC** because of following reasons
 - **State sovereignty**
 - **Crime definition**
 - **National interests**
 - **Difficulty in collection of evidences**
 - **Problem to find impartial prosecutors**

ICC and ICJ

- **Unlike the International Court of Justice (ICJ), the ICC is not part of the United Nations system, with the UN-ICC relationship being governed by a separate agreement.**
- **The ICJ, which is among the UN's 6 principal organs, mainly hears disputes between nations.**
- **The ICC, on the other hand, prosecutes individuals– its authority extending to offences committed in a member state or by a national of such a state.**

Sri Lanka pushes India out of Colombo Terminal Project

International Relations

Why in news?

- Sri Lankan government has been forced to revoke a 2019 deal with India and Japan. The deal was to build the East Container Terminal (ECT) at Colombo Port. They cancelled the deal after facing intense resistance from trade unions across the region

About the project

- The tripartite agreement, signed by India, Sri Lanka and Japan, proposes to develop the ECT, which is located at the newly expanded southern part of the Colombo Port.
- The ECT is located 3 km away from the China-backed international financial city, known as Port City, currently being built in Colombo.
- A Chinese company was behind the controversial 2018 Hambantota port project, signed its first contract in the Port City last month.
- It is also on the map of China's Belt and Road Initiative (BRI).

Significance

- The \$500-million project aims to upgrade the port to allow large container ships to enter with the aim of enhancing Sri Lanka's status as a maritime hub.
- New Delhi is said to be keen on the deal as about 70 percent of the transshipment business at the port is linked to India.
- **Geopolitics:** The ECT is located 3 km away from the China-backed international financial city, known as Port City, currently being built in Colombo.
- **Free and Open Indo-Pacific Strategy:** Japan has also been pushing to be a player in the region under its 'Free and Open Indo-Pacific Strategy'.

What made Sri Lanka break the tripartite agreement on ECT project?

- **First, pressure from Colombo port trade unions** – The government of Sri Lanka was under intense pressure. Because the trade unions opposed port's privatization and demanded cancellation of the 2019 agreement.
- **Second, China's involvement** – there were reports the Chinese had played a role in inducing port unions to protest against India's interest.
- However, Sri Lanka has approved another proposal to develop the **West Container Terminal [WCT] of the Colombo port** with Japan and India. India has not commented on the proposal.

India's reaction

- A few weeks ago EAM S. Jaishankar visited Sri Lanka where he discussed the development of the stalled project.
- India's first response was that the island nation should not be taking a decision in a unilateral manner on an existing tripartite agreement.

Compensatory offer to India

- After the decision on revoking the 2019 agreement, SL has approved another proposal to develop the west terminal of the Colombo port with Japan and India.
- Commercially, the west terminal offer is better for India as it gives 85% stake for developers of the West Terminal against the 49% in ECT.

Sri Lanka reaction

- Indian response to this compensatory offer is unclear since there was no formal communication by SL authorities.
- Geo-politically, west terminal is almost the same India considers the security aspect and the necessity to have a port terminal in Sri Lanka.
- There is no difference between East and West Terminals except for the fact that development of the ECT is partially completed while the development of the West Terminal has to start from scratch.

Impact on India-Sri Lanka relationship

- India's first response was that the island nation should not be taking a decision in a unilateral manner on an existing tripartite agreement.
- India can make life tough for Sri Lanka, isolating the tiny island nation, geo-politically and on the economic front.
- However, the Indian side may agree with WTC offer as a compromise formula with a promise that the private stake will be 85% in WTC instead of 49% at ECT.

East terminal vs West terminal

- Commercially, the west terminal offer is better for India as it gives 85% stake for developers of the West Terminal against the 49% in ECT. West Terminal is no smaller in size or depth compared to the East Terminal.
- Geo-politically, the West Terminal has the same security aspect and fulfills the necessity to have a port terminal in Sri Lanka.

Shahtoot Dam in Kabul

International Relations

Why in news?

- **India and Afghanistan have signed an agreement to build the Shahtoot Dam in the Afghan capital.**

About the dam

- The project is a part of the **New Development Partnership** between **India and Afghanistan**. This is the **second major dam** being built by India in Afghanistan, after the **India-Afghanistan Friendship Dam** (also known as **Salma Dam**), which was inaugurated in **June 2016**. Under the development partnership with Afghanistan, India has **completed more than 400 projects covering all 34 provinces** of Afghanistan.

Benefits

- Meet the **safe drinking water needs of Kabul City**.
- **Provide irrigation water** to nearby areas.
- **Rehabilitate the existing irrigation and drainage** network.
- **Aid in flood protection and management** efforts in the area.
- **Provide electricity** to the region.

Significance

- The signing of the MoU highlights **India's strong and long-term commitment towards the socio-economic development of Afghanistan** and the **long-lasting partnership** between the two countries.

Ethylene Glycol

Science & Technology

Why in the news?

- Eleven US soldiers recently fell sick after accidentally drinking ethylene glycol, a chemical found in antifreeze.

What is ethylene glycol?

- This organic compound is highly toxic. It is also known as Ethane-1,2-diol or Monoethylene glycol. It has no smell and is viscous. It is colourless and has a sweet taste. It appears as a clear, colourless, liquid. It is widely used as an antifreeze and a raw material in the plastic industry. Ethylene Glycol is produced when ethylene oxide reacts with water.
- Ethylene glycol has been the most abundantly produced diol because it is one of the monomers of polyethylene terephthalate. Ethylene glycol has been synthesized by the oxidation of ethylene with O₂ to ethylene oxide and the subsequent hydration of ethylene oxide to ethylene glycol. Usually, ethylene is supplied from the thermal cracking of naphtha from petroleum refining.

Uses of ethylene glycol

- Ethylene Glycol is an organic compound that is sweet-tasting and odourless in nature. It is mainly used in antifreeze formulations and as raw material for polyester fibre manufacturing. It is used in antifreeze for automobiles, as a heat transfer agent in liquid-cooled computers and automobiles, precursor to polymers like polyethylene terephthalate (PET), etc.

Start Dust 1.0

Science & Technology

Why in the news?

- Stardust 1.0 was recently launched from Maine, the US has become the first commercial space launch powered by biofuel.

What is Stardust 1.0?

- Stardust 1.0 is a launch vehicle suited for student and budget payloads.
- The rocket is 20 feet tall and has a mass of roughly 250 kg.
- Payloads:** The rocket can carry a maximum payload mass of 8 kg and during its first launch carried three payloads. The payloads included:
 - a cubesat prototype built by highschool students
 - a metal alloy designed to lessen vibrations, which is developed by Kellogg's Research Labs
 - a cubesat from software company Rocket Insights
- Manufactured by:** The rocket is manufactured by bluShift, an aerospace company based in Maine, that is developing rockets powered by bio-derived fuels. Other rockets being developed by the company include
 - Stardust Gen. 2, Starless Rouge and Red Dwarf, which is a low-Earth orbit (LEO) vehicle and is designed to fly a maximum payload of 30 kg.



What are biofuels?

- Biofuels are liquid or gaseous fuels primarily produced from biomass, and can be used to replace or can be used in addition to diesel, petrol or other fossil fuels for transport, stationary, portable and other applications. Crops used to make biofuels are generally either high in sugar (such as sugarcane, sugarbeet, and sweet sorghum), starch (such as maize and tapioca) or oils (such as soybean, rapeseed, coconut, sunflower).

Categories of bio fuels

- Biofuels are generally classified into three categories. They are**
- First generation biofuels** - First-generation biofuels are made from sugar, starch, vegetable oil, or animal fats using conventional technology. Common first-generation biofuels include Bioalcohols, Biodiesel, Vegetable oil, Bioethers, Biogas.

- **Second generation biofuels** - These are produced from non-food crops, such as cellulosic biofuels and waste biomass (stalks of wheat and corn, and wood). Examples include advanced biofuels like biohydrogen, biomethanol.
- Third generation biofuels - These are produced from micro-organisms like algae

National Policy on biofuels- salient features:

- **Categorization:** The Policy categorises biofuels as "Basic Biofuels" viz. First Generation (1G) bioethanol & biodiesel and "Advanced Biofuels" – Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc. to enable extension of appropriate financial and fiscal incentives under each category.
- **Scope of raw materials:** The Policy expands the scope of raw material for ethanol production by allowing use of Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum, Starch containing materials like Corn, Cassava, Damaged food grains like wheat, broken rice, Rotten Potatoes, unfit for human consumption for ethanol production.
- **Protection to farmers:** Farmers are at a risk of not getting appropriate price for their produce during the surplus production phase. Taking this into account, the Policy allows use of surplus food grains for production of ethanol for blending with petrol with the approval of National Biofuel Coordination Committee.
- **Viability gap funding:** With a thrust on Advanced Biofuels, the Policy indicates a viability gap funding scheme for 2G ethanol Bio refineries of Rs.5000 crore in 6 years in addition to additional tax incentives, higher purchase price as compared to 1G biofuels.
- **Boost to biodiesel production:** The Policy encourages setting up of supply chain mechanisms for biodiesel production from non-edible oilseeds, Used Cooking Oil, short gestation crops.

Square Kilometer Array Observatory

Science & Technology

Why in the news?

- The Square Kilometer Array Observatory (SKAO) Council held its maiden meeting and approved the establishment of the world's largest radio telescope

About SKAO:

- SKAO is a new intergovernmental organisation dedicated to radio astronomy
- The operation, maintenance and construction of SKA will be overseen by Square Kilometre Array Observatory (SKAO).
- Headquarters: The SKAO is headquartered in the UK.

Square Kilometre Array (SKA) Project

- It is an international effort to build the world's largest radio telescope. It is not a single telescope. It consists of an array of antennas strategically designed and set up in South Africa and Australia.
- **South Africa** – host high and mid-frequency dish antennas
- **Australia** – Low-frequency antennas.

Aim: To allow astronomers to look deeper into the universe and unravel secrets about its evolution.

Goals:

- To study the universe and its evolution, origin and evolution of cosmic magnetism and dark energy and evolution of galaxies.
- To detect very weak extra-terrestrial signals and search for molecules that support life.

Member Countries: South Africa, Australia, UK, Canada, China, France, Germany, **India**, Japan, Italy, the Netherlands, Portugal, South Korea, Spain, Sweden and Switzerland.

- **Note:** India's SKA membership is currently under review with India's Department of Atomic Energy(DAE) and Department of Science and Technology (DST) and is expected to be completed sometime this year.

What are radio telescopes?

- The radio telescopes can detect invisible gas which the optical telescopes are unable to detect.
- The radio telescopes can reveal areas of space that may be obscured by cosmic dust.
- The first radio signals were detected by physicist Karl Jansky in the 1930s.

The astronomers have used radio telescopes to detect radio waves emitted by different objects in the universe and explore it.

Significance of Square Kilometre Array Telescope

- The telescope is proposed to be the largest radio telescope in the world.
- It will be located in Africa and Australia whose operation, maintenance and construction will be overseen by SKAO.
- The scientists will be able to address various questions through the telescope such as:
 - The beginning of the universe,
 - How and when the first stars were born,
 - The life-cycle of a galaxy,
 - Exploring the possibility of detecting technologically-active civilisations elsewhere in our galaxy and
 - Understanding where gravitational waves come from
- The telescope will accomplish its scientific goals by:
 - Measuring neutral hydrogen over cosmic time,
 - Accurately timing the signals from pulsars in the Milky Way, and
 - Detecting millions of galaxies out to high redshifts



Role of India in SKAO

- India is participating in SKAO through the Department of Atomic Energy (DAE) and the Department of Science and Technology (DST).
- Pune-based TIFR-National Centre for Radio Astrophysics leads a team of researchers including from Raman Research Institute, Indian Institute of Science, Inter University Centre for Astronomy and Astrophysics, IITs of Kanpur, Kharagpur and Indore, Tata Institute of Fundamental Research, Presidency College and IISER-Mohali.
- The Indian team was among the first to submit and get the design approval of a highly sophisticated Telescope Manager (TM), nicknamed "nervous system", of the SKA observatory.
- The Indian team has now been chosen to lead the construction of the TM system, which will be responsible for end-to-end operations of SKAO.
- India will also contribute towards building digital hardware for the SKA low-frequency receiver systems.

JATP- CENTER OF EXCELLENCE

Science & Technology

Why in the news?

- DRDO signed an MoU with the Indian Institute of Science (IISc), Bengaluru for the creation of JATP–Center of Excellence (JATP – CoE) in the premises of IISc to expand the scope and objective of the existing Joint Advanced Technology Program.

About JATP

- The JATP-CoE located in the campus of IISc, Bengaluru will enable Directed Basic & Applied Research and engage with premier research institutes through multi-disciplinary & multi-institutional collaboration.
- The focused research efforts at the centre will lead to realization of indigenous technologies in the critical areas to develop state of art technologies.
- As per the MoU, DRDO will support JATP in equipping it with advanced and unique research facilities that will enable the faculty and scholars to conduct advanced research.
- DRDO will facilitate advanced research to utilize technology outcomes in futuristic applications.

- DRDO scientists and engineers will work with the academic research faculty and scholars in addressing challenging scientific problems to find an innovative solution in advanced areas of research namely Advanced Aerospace Systems & Materials, High Temperature Materials, Micro & Nano Systems Science and Technology, Artificial Intelligence & Robotics, Quantum Technologies etc.
- JATP-CoE may also involve other premier institutions in the country, based on their research strengths.
- JATP was created by Late Hon'ble President of India Dr. APJ Abdul Kalam in 1983, where the DRDO scientists actively collaborated with the faculty of IISc to work on various missile technologies.

Indian institute of science

- The Indian Institute of Science (IISc) was established in 1909 by a visionary partnership between the industrialist Jamsetji Nusserwanji Tata, the Mysore royal family and the Government of India.
- Over the last 111 years, IISc has become India's premier institute for advanced scientific and technological research and education.
- Its mandate is "to provide for advanced instruction and to conduct original investigations in all branches of knowledge as are likely to promote the material and industrial welfare of India."
- In keeping with this guiding principle, the Institute has strived to foster a balance between the pursuit of basic knowledge and applying its research for industrial and social benefit.
- IISc's reputation and pre-eminence ensures that it attracts the best young faculty members trained in the best laboratories around the world.
- In 2018, IISc was selected as an Institution of Eminence (IoE) by the Government of India, and it consistently figures among the top Indian institutions in world university rankings.

Defense Research and Development Organization (DRDO)

- DRDO is the R&D wing of the Ministry of Defense, Govt of India.
- Vision to empower India with cutting-edge defence technologies.
- Mission to achieve self-reliance in critical defence technologies and systems, while equipping our armed forces with state-of-the-art weapon systems and equipment in accordance with requirements laid down by the three Services.
- DRDO's pursuit of self-reliance and successful indigenous development and production of strategic systems and platforms such as Agni and Prithvi series of missiles; light combat aircraft, Tejas; multi-barrel rocket launcher, Pinaka; air defence system, Akash.
- DRDO was formed in 1958 from the amalgamation of the then already functioning
- Technical Development Establishment (TDEs) of the Indian Army
- Directorate of Technical Development & Production (DTDP)
- Defence Science Organisation (DSO).
- DRDO started with just 10 different laboratories in the country and now has more than 50 labs across the nation researching in different sectors of technology and defense.

Einsteinium

Science & Technology

Why in the news?

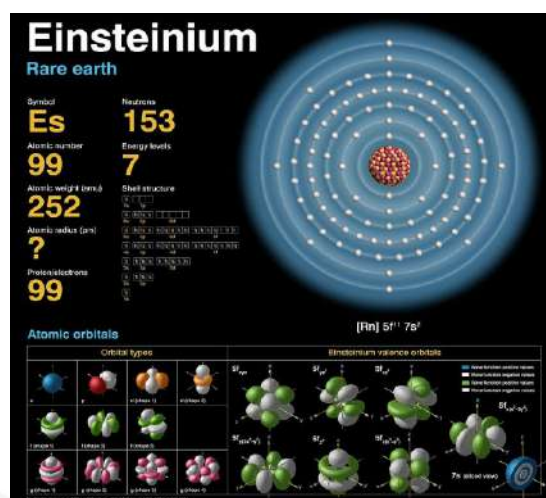
- **A team of scientists at the Berkeley Lab has reported some of the properties of element 99 in the periodic table called "Einsteinium", named after Albert Einstein.**

What is Einsteinium?

- It was discovered in 1952 in the debris of the first hydrogen bomb (the detonation of a thermonuclear device called "Ivy Mike" in the Pacific Ocean).
- Since its discovery, scientists have not been able to perform a lot of experiments with it because it is difficult to create and is highly radioactive.
- Therefore, very little is known about this element.
- With this new study published in the journal Nature last week, for the first time researchers have been able to characterize some of the properties of the element.

Properties of the element

- Einsteinium has a half-life of 20 days.
- Because of its high radioactivity and short half-life of all einsteinium isotopes, even if the element was present on Earth during its formation, it has most certainly decayed.
- This is the reason that it cannot be found in nature and needs to be manufactured using very precise and intense processes.
- Therefore, so far, the element has been produced in very small quantities and its usage is limited except for the purposes of scientific research.
- The element is also not visible to the naked eye and after it was discovered, it took over nine years to manufacture enough of it so that it could be seen with the naked eye.



Uses of Einsteinium

- As per the Chemical World podcast, "in part, the tiny quantities of Einsteinium that have been made reflect the difficulty of producing it. But it also receives the sad accolade of having no known uses. There really isn't any reason for making einsteinium, except as a waypoint on the route to producing something else. It's an element without a role in life." This means that Einsteinium has found no such use in the medical or chemical industry so far. This is due to the small amount of the element present in the world.

UAE Hope Mission

Science & Technology

Why in the news?

- Recently, the United Arab Emirates' (UAE's) first-ever interplanetary Hope Probe mission has successfully entered orbit around Mars.**

Hope Mission

- Due to Amal's arrival, UAE has joined a league of just five space agencies in history that have pulled off a functioning Mars mission.
- It was the country's first venture beyond Earth's orbit.
- It will study the Mars Atmosphere.



Objectives of the mission

- Once it launches, Hope will orbit Mars for around 200 days, after which it will enter the Red planet's orbit by 2021, coinciding with the 50th anniversary of the founding of UAE.
- The mission is being executed by the Mohammed bin Rashid Space Centre, UAE's space agency.
- It will help answer key questions about the global Martian atmosphere and the loss of hydrogen and oxygen gases into space over the span of one Martian year.

Successful Mars Missions	Nation/ Space Agency
Marine series Viking series Pathfinder Rovers: Spirit, Opportunity Phoenix (2007) Curiosity (2011) Maven (2013-14)	USA(Nasa)
Mangalyaan (MOM)	ISRO
Mars Express (2001)	European Space Agency (EU)

Geo Spatial Sector

Science & Technology

Why in the news?

- Recently, the Ministry of Science & Technology has released the new guidelines for the **Geo-spatial sector in India**.

What is Geo-spatial data?

- Geo-spatial data (also known as "spatial data") represents the data-linked to features or objects on the Earth's surface. In simple terms, data is referenced to locations on the earth (some portion of data is spatial).
- Man-made or natural objects (or features) can get linked to location and act as geospatial data.
- The geospatial data **can be static**, like the location of a road, an earthquake event, malnutrition among children, etc. **or dynamic** like a moving vehicle or pedestrian, the spread of an infectious disease.
- The application of Geospatial data in our daily lives is increasing. For example, food delivery apps like Swiggy or Zomato, e-commerce app like Amazon, Weather apps, etc., are dependent on Geospatial data.
- Geospatial data **combines** the following information:
 - Location information**
 - Attribute information** (the characteristics of the object, event, or phenomena concerned): For example, in addition to the spatial information of building it also provides other information like the number of stories in the building, number of owners, etc.
 - Temporal information** or the time at which the location and attributes exist

Applications

- Terrestrial, Aerial and Marine Navigation:** This is one of the biggest applications of geospatial data. From Google Maps to product delivery at home, everything is linked with geospatial mapping today. The data can also aid in marine and aerial navigations. Further, it can provide visual and voice navigation for drivers, tourists, etc.
- Disaster Management:** Geospatial data can help in making data-backed decisions. Apart from that, it will also help in creating contingency plans and foreseeing any obstacles the rescue team might face.
- Humanitarian Relief:** Using Geospatial data, one can decide where change can be brought to improve living conditions, standards of living, or even spaces where basic amenities are missing. Thus, poverty, hunger, and sanitation can be identified and solved strategically.
- Improved efficiency in various sectors:** Geospatial mapping can improve identifying and managing natural resources. They can reduce cost savings in the logistics sector, mining sector etc.
- Better effectiveness of services:** Geospatial mapping can improve transparency in citizen services by government and private sector. The private sector can identify the potential market for their product and services. On the other hand, the government can identify the target area for a scheme. Defence sector can identify the potential targets and manpower required.

Challenges of Current policy on geo-spatial data

- The current policy put strict restrictions on the collection, storage, use, sale, dissemination of geo-spatial data and mapping under the current regime.
- The policy had not been renewed in decades and has been driven by internal as well as external security concerns.
- The sector is dominated by the Indian government such as the Survey of India and private companies need to navigate a system of permissions to be able to collect, create or disseminate geo-spatial data.
- The policy was initially conceptualised as a matter solely concerned with security, geo-spatial data collection was the prerogative of the defence forces and the government.
- The GIS mapping was also rudimentary, with the government investing heavily in it after the Kargil war highlighted the dependence on foreign data and the need for indigenous sources of data.
- There is also a huge lack of data in the country which impedes planning for infrastructure, development and businesses which are data-based.

Reasons for Liberalizing Geo-spatial Sector

- India is rapidly moving towards infrastructural development that has become necessary to be at par with countries across the world.
- The geospatial data is of key importance to undertake mapping to ensure proper development with initiatives like Smart Cities and Digital India.
- The government has not only allowed more hands to come on deck for the completion of this mammoth task, but it might just also be counting on the competitiveness in the private sector.
- The private sector entities would be able to self-certify and adhere to the guidelines without having the government looking at their every move.
- It would make the private entities more independent and also freeing up governmental resources.
- The private sector would be able to bring innovation in this sector and produce more solutions based on it, resulting in an increase in employment in the geospatial sector.

Why has the government deregulated geo-spatial data?

- The system of acquiring licenses or permission, and the red tape involved, can take months, delaying projects, especially those that are in mission mode.
- The deregulation eliminates the requirement of permissions as well as scrutiny, even for security concerns.
- The Indian companies now can self-attest, conforming to government guidelines without actually having to be monitored by a government agency.
- The government therefore felt an urgent need to incentivise the geo-spatial sector for Indian companies and increased investment from private players in the sector.

Issues

- **Privacy, data and surveillance-related issues:** The collection of geospatial mapping and data involves various privacy-related issues and **violate the individual's right to privacy**. The major issues were:
 - Data of persons can be captured through geospatial tagging via social media.
 - Data generated from mobile devices can get captured by the private sector, and they might use it for profit motive.
 - There is also a possibility to capture sensitive personal information.
 - Unintended or unknown surveillance of persons.
- **National security-related issues:** Private companies by collecting data on a large scale can threaten national security. Like:
 - Majority of the present geospatial data is in the hands of the US and European companies. Chinese also started many startups recently. They can tie with an Indian startup (or create a startup) in India and indulge in data mining activities.
 - India at present doesn't have enough manpower to monitor the violation in Geospatial data. This can be exploited by any potential national security threat.

Green Hydrogen

Science & Technology

Why in the news?

- Recently, the Finance Minister in her budget speech formally announced the National Hydrogen Energy Mission which aims for generation of hydrogen from green power resources.

Hydrogen

- Hydrogen is a non-toxic colorless gas, even when it's referred to as green hydrogen. It's the most abundant element – it's estimated that 90% of all atoms are hydrogen atoms, comprising around three quarters of the total mass in the universe.



Green hydrogen generation

- Hydrogen can also be produced by the electrolysis of water (using an electric current to break water, H₂O, into its component elements of hydrogen and oxygen). If this electric current is produced by a renewable source (e.g. Solar PV or a wind turbine), the clean hydrogen produced is known as green hydrogen.

Storage:

- Hydrogen can be stored physically as either a gas or a liquid.
- Storage of hydrogen as a gas typically requires high-pressure tanks.
- Storage of hydrogen as a liquid requires cryogenic temperatures because the boiling point of hydrogen at one atmosphere pressure is -252.8°C .
- Hydrogen can also be stored on the surfaces of solids (by adsorption) or within solids (by absorption).

Potential of clean hydrogen industry in reducing greenhouse gas emissions:

- The only by-product or emission that results from the usage of hydrogen fuel is water — making the fuel 100 per cent clean.
- Hydrogen is considered an alternative fuel. It is due to its ability to power fuel cells in zero-emission electric vehicles, its potential for domestic production, and the fuel cell's potential for high efficiency.
- In fact, a fuel cell coupled with an electric motor is two to three times more efficient than an internal combustion engine running on gasoline.
- Hydrogen can also serve as fuel for internal combustion engines.
- The energy in 2.2 pounds (1 kilogram) of hydrogen gas contains about the same as the energy in 1 gallon (6.2 pounds, 2.8 kilograms) of gasoline.

Issues with H-Fuel cells

- A big barrier to the adoption of hydrogen fuel cell vehicles has been a lack of fuelling station infrastructure.
- There are fewer than 500 operational hydrogen stations in the world today, mostly in Europe, followed by Japan and South Korea.
- Safety is seen as a concern. Hydrogen is pressurized and stored in a cryogenic tank, from there it is fed to a lower-pressure cell and put through an electrochemical reaction to generate electricity.
- Scaling up the technology and achieving critical mass remains the big challenge.
- More vehicles on the road and more supporting infrastructure can lower costs. India's proposed mission is seen as a step in that direction.

India Urban Data Exchange**Science & Technology****Why in news?**

- Recently, the Ministry of Housing & Urban Affairs (MoHUA) has launched **National Urban Digital Mission, India Urban Data Exchange (IUDX), SmartCode and Geospatial Management Information System (GMIS)** in order to realise the Prime Minister's vision of Digital India and AtmaNirbhar Bharat.

What is National Urban Digital Mission (NUDM)?

- It will create a shared digital infrastructure for urban India, working across the three pillars of people, process, and platform to provide holistic support to cities and towns.
- It will institutionalise a citizen-centric and ecosystem-driven approach to urban governance and service delivery in 2022 cities by 2022 and across all cities and towns in India by 2024.
- It will create the ideal space to harness immense synergies from the domain of urban and technology towards creating citizen-centric governance i.e. 'minimum government and maximum governance'.
- The NUDM will create a shared digital infrastructure that can consolidate and cross-leverage the various digital initiatives of the MoHUA.
- It will enable cities and towns across India to benefit from holistic and diverse forms of support, in keeping with their needs and local challenges.
- The NUDM is citizen-centric, ecosystem-driven, and principles-based in both design and implementation.
- It has articulated a set of governing principles, and inherits the technology design principles of the National Urban Innovation Stack (NUIS)

About India Urban Data Exchange (IUDX)

- It is an open-source software platform which facilitates the secure, authenticated, and managed exchange of data amongst various data platforms.

- It has been developed in partnership between the Smart Cities Mission and the Indian Institute of Science (IISc), Bengaluru.
- It is funded by MoHUA and has support from the Ministry of Electronics and Information Technology and NITI Aayog.
- It serves as a seamless interface for data providers and data users to share, request, and access datasets related to cities, urban governance, and urban service delivery.
- It is designed to address the problem of data silos, both within and across cities.
- It creates a secure and reliable channel for data producers or owners to share their data, with complete control over what is shared and with whom, in order to enable sharing while addressing security and privacy protections by design.

About SmartCode Platform

- It is a platform that enables all ecosystem stakeholders to contribute to a repository of open-source code for various solutions and applications for urban governance.
- It is designed to address the challenges that ULBs face in the development and deployment of digital applications by enabling cities to take advantage of existing codes and customising them to suit local needs, rather than having to develop new solutions from scratch.
- It is a repository of open-source software.

Sandes

Science & Technology

Why in the news?

- **In a bid to provide a secure way for people to communicate, the National Informatics Centre (NIC) has launched Sandes.**

About the Sandes platform:

- It is an instant messaging platform like WhatsApp. It was previously named Government Instant Messaging System (GIMS).
- The platform can be used for all kinds of communications by anyone with a mobile number or email id.
- Initially, the platform was available to only government officers. It is now available for the common public as well.

Why was it launched?

- The platform built by the government to mitigate potential security risks. It allows the government employees to switch from mainstream social media applications to a secured Sandes platform.
- The platform is also a part of the government strategy to push for use of India-made software. Thus, it will develop an ecosystem of indigenously developed products.

Features of the platform:

- The platform has an interface similar to many other apps currently available in the market.
- The chats on the platform can be backed up to a user's email. However, there is no option to transfer the chat history between two platforms.
- It also offers features such as group making, broadcast message, message forwarding, and emojis.
- It allows a user to mark a message as confidential. It will make the recipient aware that the message should not be shared with others. However, the confidential tag does not change the way the message is sent from one user to another.

Issues

- The app does not allow the user to change their email id or registered phone number. The user will have to re-register as a new user in case they wish to change their registered email id or phone number on the app.

Bhuvan Satellite

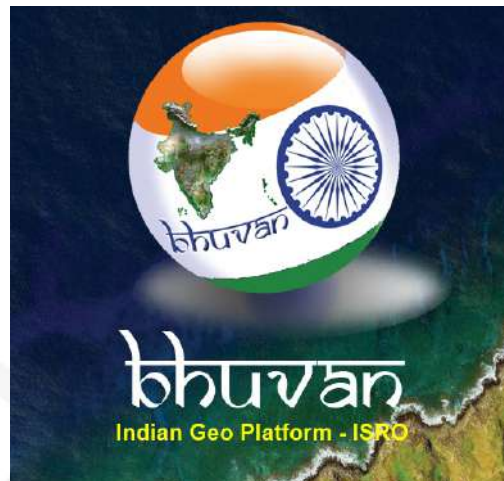
Science & Technology

Why in the news?

- Department of Science and Technology recently signed an MoU with MapmyIndia.

Key Highlights:

- It is a collaboration between Indian Space Research Organisation (ISRO) and digital mapping and navigation technology solutions provider MapmyIndia.
- It is an attempt to compete with Google Maps and launch an indigenous mapping portal and geospatial service.
- The geospatial portals will be called 'Bhuvan', 'VEDAS' and 'MOSDAC'.
- **Bhuvan:** National geo-portal developed and hosted by ISRO comprising geospatial data, services, and tools for analysis.
- **VEDAS (Visualisation of Earth observation Data and Archival System):** Online geoprocessing platform that uses optical, microwave, thermal, and hyperspectral EO data covering applications particularly meant for **academia, research and problem solving.**
- **MOSDAC (Meteorological and Oceanographic Satellite Data Archival Centre):**
 - Data repository for all the meteorological missions of ISRO.
 - Deals with weather-related information, oceanography, and tropical water cycles.



Significance:

- With ISRO, MapmyIndia's end-user maps, apps and services will now integrate with ISRO's huge catalogue of satellite imagery and earth observation data.
- It will promote 'Aatmanirbhar Bharat' as Indian users would not be dependent on foreign organizations for maps, navigation, and geospatial services, and instead they can leverage made-in-India solutions.
- It will enable to jointly identify and build a holistic geospatial portal utilising earth observation dataset, 'NavIC', Web Services and APIs (application programming interface) available in MapmyIndia.
- Foreign mapping solutions come with a lot of hidden costs. They make money by targeting the same users with advertising based on invading user privacy and auctioning those user's private location and movement data.
 - MapmyIndia **does not have an advertising business model** and has an **ethical point of view** against advertising led business models of such companies. By using its maps users can **better protect their privacy.**

Navigation in Indian Constellation (NavIC):

- The Indian Regional Navigation Satellite System (IRNSS), with an operational name of NavIC, is an autonomous regional satellite navigation system.
- NavIC was developed by the Indian Space Research Organization (ISRO).
- IRNSS consists of eight satellites:
 - Three satellites in **geostationary orbit**
 - Five satellites in **geosynchronous orbit**
- The main objective is to provide reliable position, navigation and timing services over India and its neighborhood.
- It works just like the established and popular U.S. Global Positioning System (GPS) but within a 1,500-km radius over the sub-continent.

Services provided

1. Standard Positioning Service (SPS) which is provided to all the users
 2. Restricted Service (RS), which is an encrypted service provided only to the authorized users.
- It can provide accurate position information service in India and the region, extending up to 1,500 km from

its boundary which is its Primary Service Area. It will provide a position accuracy of better than 20 m in the primary service area.

- An extended service area lies between the primary service area and a rectangle area enclosed by the 30th parallel south to the 50th parallel north and the 30th meridian east to the 130th meridian east.
- **Potential Uses:**
 - Terrestrial, aerial and marine navigation.
 - Disaster management.
 - Vehicle tracking and fleet management (especially for mining and transportation sector).
 - Integration with mobile phones.
 - Precise timing (as for ATMs and power grids).
 - Mapping and geodetic data capture.
- It has been certified by the 3rd Generation Partnership Project (3GPP), a global body for coordinating mobile telephony standards.

Hemorrhagic Septicemia

Science & Technology

Why in the news?

- Six elephants died of haemorrhagic septicaemia in Karlapat Wildlife Sanctuary in Odisha's Kalahandi district within 14 days of time.

About H haemorrhagic septicaemia

- Haemorrhagic septicaemia is a contagious bacterial disease which infects animals that come in contact with contaminated water or soil.
- It is caused by certain serotypes of *Pasteurella multocida*, a Gramnegative coccobacillus residing mostly as a commensal in the nasopharynx of animals.
- The disease generally spreads in the period right before and after the monsoons. It can affect cattle, buffalo and other animals.
- Haemorrhagic septicaemia occurs in parts of Asia and Africa and is often fatal.
- It can be transmitted by ingesting contaminated food and water or through respiratory secretions.
- Hemorrhagic septicaemia is an important disease in Asia, Africa, and the Middle East. It has never been confirmed in Mexico, Central or South America.

Karlapat sanctuary

- Karlapat sanctuary is spread over an area of 175 square km in Odisha's Kalahandi district.
- The sanctuary home to tigers, leopards, sambars, nilgais, barking deer, mouse deer and a wide variety of birds like green munia, great eared-nightjar and various reptiles, apart from elephants.
- The forest consists of flora like Sal, Bija, Asan, Harida, Amala, Bahada and Bamboo and varieties of medicinal plants.
- There are several small and big waterfalls inside the sanctuary like Phurlijharan, Ghusrigudi, Dumnijhola, Kamalajharan, Koyirupa, Kuang and Raja Rani.

M-sand

Science & Technology

Why is the news?

- The Rajasthan government has brought a policy on manufactured sand (M-sand). It will provide an industry status to the units producing manufactured sand for construction work.

What is M-Sand?

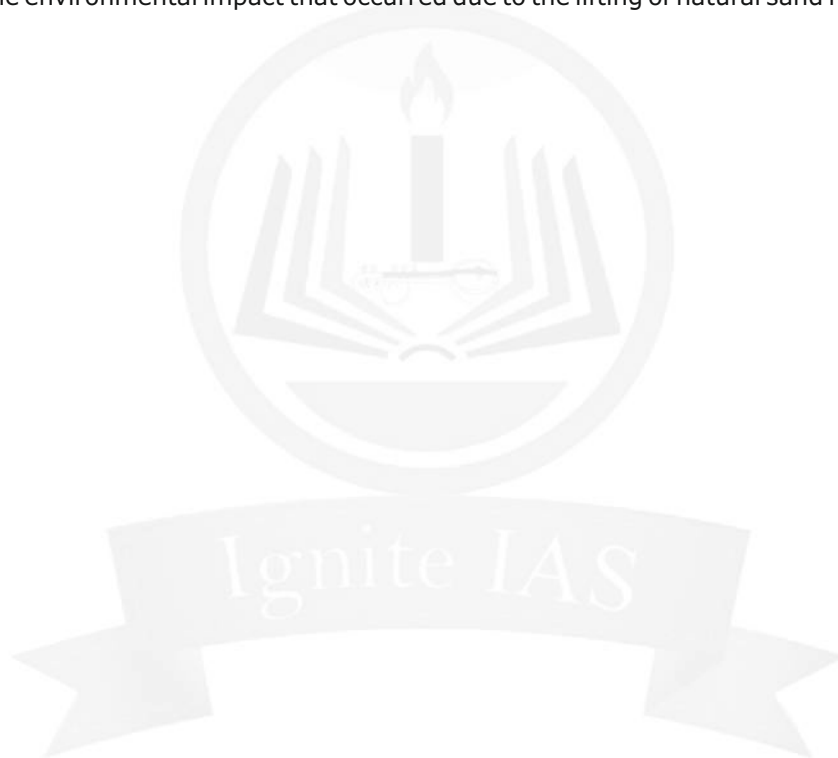
- M-sand is a substitute of river sand for concrete construction.
- Manufactured sand is produced from hard granite stone by crushing.
- The crushed sand is of cubical shape with grounded edges, washed and graded to as a construction material.
- The size of manufactured sand (M-Sand) is less than 4.75mm.

Usage of Manufactured Sand

- Due to the fast-growing construction industry, the demand for sand has increased tremendously causing deficiency of suitable river sand in most parts of the world.
- Hence, to avoid the depletion of good quality river sand for the use of construction, the use of manufactured sand has been increased.

Benefits of M-Sand:

- It is easily available and has less transportation cost.
- It does not contain organic and soluble compounds that affect the setting time and properties of cement, thus the required strength of concrete can be maintained.
- M-Sand does not have the presence of impurities such as clay, dust and silt coatings which help in producing better quality concrete.
- Furthermore, it can be dust-free and the sizes of m-sand can be controlled easily so that it meets the required grading for the given construction.
- It eliminates the environmental impact that occurred due to the lifting of natural sand from the river bed.



Global Housing Technology Challenge

Reports

Why is in the news?

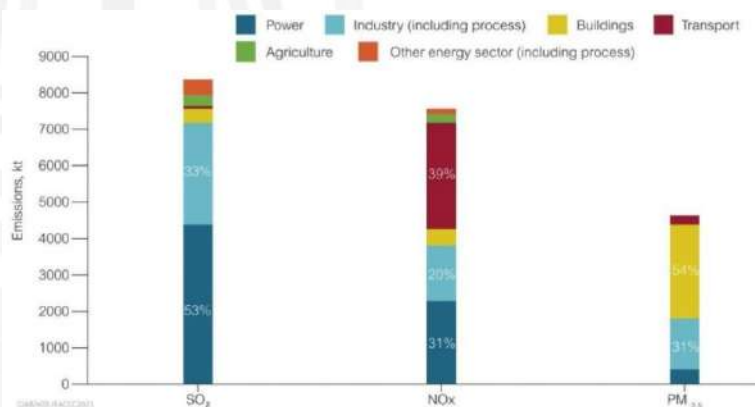
- According to a study by the International Energy Agency's Clean Coal Centre (IEACCC) Coal-based thermal power stations with no pollution control technology are responsible for over half sulphur dioxide (SO₂), 30 per cent oxides of nitrogen (NO_x), about 20 per cent particulate matter (PM), among other man-made emissions in the country.

Findings of study:

- Unabated burning of coal in thermal power stations and a delay in implementation of latest carbon capture storage technology are among major reasons of air pollution in India, according to a recent study.
- The study by the International Energy Agency's Clean Coal Centre (IEACCC) recommended implementation of emission norms at coal-based thermal power stations (TPP) at the earliest.
- It was techno-economically possible to meet the norms if there were no further delay or dilution, the study released February 13, 2021 added.
- It added that transport and other industrial sectors stand second to coal-based thermal power stations as a contributor to air pollution.

India's SO₂, NO_x, and PM_{2.5} (primary) emission by sources:

- Assessments by the Delhi-based think tank Centre for Science and Environment have found very little implementation of the emission norms happening on the ground. They also found that stakeholders tried to delay implementation of emission norms notified in December 2015.
- CSE recently cautioned the Union Ministry of Environment, Forest and Climate Change (MoEF&CC) against extending the deadline of meeting emission norms for coal-based thermal power plants in the country.
- The Union Ministry of Power had requested MoEF&CC to extend the deadline from 2022 to 2024; according to media reports, the environment ministry might be working on a graded plan to achieve this.



Retire old fleet and upgrade

- The IEACCC study recommended retirement of old coal-fired power stations to limit pollution and improve the fleet efficiency. The study underlined the "lip-service stand" taken by the Union governments in running cleaner coal power plants in India.
- It noted that the most new advanced technology plants in India — such as Mundra and Sassan in Gujarat — are struggling financially, causing stakeholders to lose confidence in investing in cleaner and advanced technology.
- The Union government's long-term strategy underline the nationally determined contributions submitted as a part of the Paris Agreement 2015, which mention the Indian government's position to run cleaner advance technology. And yet, it is legally feasible for businesses in India to use less efficient technologies to burn coal.
- The current energy efficiency schemes, including performance and achieve trade scheme, efficiency standards scheme and carbon pricing schemes, are not ambitious enough to drive significant improvement, noted the study. Retirement of inefficient fleet and adoption of clean coal technology can only bring in a noticeable change, it said.

Carbon capture storage

- Adopting carbon-capture storage (CCUS) is equally important to reduce emissions, according to the study.

What is carbon capture storage?

- CCUS is the process of capturing waste carbon dioxide, transporting it to a storage site and depositing it where it will not enter the atmosphere.

- The report added that land forms along the coasts of Maharashtra, Andhra Pradesh and Tamil Nadu as well as parts of Rajasthan can act as good reserves. The study called the international community through multi-national banks and other sources to invest in deployment of CCUS in India. It also urged the country to include it as a part of its climate commitment.
- If pilot demonstrations are carried out by the next few years, commercial installation of CCUS can begin by 2030, according to the study.
- Among other suggestions that could reduce CO2 emissions from the coal sector or cut it up to 26 per cent were:
 - Retiring old sub-critical thermal power generating units 23 gigawatt
 - Running priority-advanced technology plants
 - Deploying carbon capture technology in 10 per cent capacity of overall fleet
- The situation demanded quicker regional reforms to curb pollution from vehicles, industry, power plants and waste burning to further bend the air pollution curve on a regional scale.

Corruption Perception Index 2020

Reports

Why is this in News?

- India's rank has slipped six places to **86th among 180 countries** in **Corruption Perception Index (CPI)** released by **Transparency International**.
- India was ranked 80th out of 180 countries in 2019.

Transparency International:

- Transparency International is an international non-governmental organisation founded in 1993 based in Berlin, Germany
- Its non-profit purpose is to take action to combat global Corruption with civil societal anti-corruption measures and to prevent criminal activities arising from corruption.
- Its most notable publications include the Global Corruption Barometer & the Corruption Perception Index.

Findings of the index:

- The index ranks 180 countries and territories by the perceived level of public sector corruption according to experts and business people.
- It uses a scale of zero (highly corrupt) to 100 (very clean).
- CPI 2020 paints a grim picture of the state of corruption worldwide. While most countries have made little to no progress in tackling corruption in nearly a decade, more than two-thirds of countries score below 50, with an average score of just 43.
- Moreover, corruption not only undermines the global health response to Cover-19 but contributes to a continuing crisis of democracy.

Top Performers:

- The top countries on the Corruption Perception Index (CPI) are Denmark and New Zealand, with scores of 88, followed by Finland, Singapore, Sweden and Switzerland, with scores of 85 each.

Poor Performers:

- South Sudan and Somalia are the bottom Countries with scores of 12 each, followed by Syria (14), Yemen (15) and Venezuela (15).

Regional Specific:

- The highest scoring region is Western Europe and the European Union with an average score of 66.
- The lowest scoring regions are Sub-Saharan Africa (32) and Eastern Europe and Central Asia (36).

India Specific:

- In 2020, India's score is 40 (41 in 2019).
- India experienced slow progress in anti-corruption efforts, with several government commitments to reform not yet materialising effectively.

Corruption, Health & Covid-19:

- Corruption shifts public spending away from essential public services. Countries with higher levels of corruption, regardless of economic development, tend to spend less on health.
- Higher levels of corruption are associated with lower universal health care coverage and higher rates of infant and maternal mortality and deaths from cancer, diabetes, respiratory and cardiovascular diseases.
- Corruption is one of the key barriers to achieving the United Nations' Sustainable Development Goals (SDGs), and the covid-19 pandemic is making those goals even more difficult to attain.
- Covid-19 is not just a health and economic crisis, but a corruption crisis as well, with countless lives lost due to the insidious effects of corruption undermining a fair and equitable global response.
- The Covid-19 response exposed vulnerabilities of weak oversight and inadequate transparency. Countries with higher levels of corruption tend to be the worst perpetrators of democratic and rule-of-law breaches while managing the COVID-19 crisis.

Recommendations by the report:

- Strengthen oversight institutions to ensure resources reach those most in need. Anti-corruption authorities and oversight institutions must have sufficient funds, resources and independence to perform their duties
- Ensure open and transparent contracting to combat wrong doing, identify conflicts of interest and ensure fair pricing.
- Defend Democracy, Promote Civic Space by enabling civil society groups and the media to hold governments accountable.
- Publish relevant data and guarantee access to information to ensure the public receives easy, accessible, timely and meaningful information.

International Energy Agency(IEA) releases the India Energy Outlook 2021 Report

Reports

About the India Energy Outlook 2021

- This report aims to ensure reliable, affordable, and sustainable energy for a growing population. It explores the opportunities and challenges ahead for India.
- It examines the long-term impacts of the pandemic on India's energy supply, demand, and investment using the latest available energy data. Furthermore, it also suggests pathways out of the crisis.

Key Findings of the Report:

- **Energy Consumer:** Currently, India is the fourth-largest global energy consumer behind China, the United States, and the European Union (EU). By 2030, India may overtake the EU as the world's 3rd biggest energy consumer.
- **Natural Gas Demand:** India will become the fastest-growing market for Natural gas with demand more than tripling by 2040. Natural gas import dependency will also increase from 20% in 2010 to almost 50% in 2019. It will grow further to more than 60% in 2040.
- **More Oil import:** India is currently the world's second-biggest net oil importer after China. It currently imports about 76% of its crude oil needs. That reliance on overseas oil is expected to rise to 90% by 2030 and 92% by 2040.
- **Renewable Energy:** India's share in the growth in renewable energy is the second-largest in the world after China.
- **Coal Demand:** Over 80% of India's energy needs are met by three fuels: coal, oil, and solid biomass. Among them, coal currently dominates India's electricity sector. It accounts for over 70% of overall generation with only about 4% produced through solar energy.
- **Global Emitter:** India is currently the 3rd-largest global emitter of CO₂, despite low per capita CO₂ emissions. By 2040, India's emissions of carbon dioxide could rise as much as 50%. That would make India the second-largest emitter of carbon dioxide, trailing only behind China.
- **Urban Population:** By 2040, an estimated 270 million people are likely to be added to India's urban population. However, even with such rapid urbanization, the share of India's population living in urban areas in 2040 is still expected to be less than 50%.