

AN INITIATIVE BY
VETRI IAS

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CURRENT AFFAIRS

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Index

1. POLITY & GOVERNANCE

1.	India's Interim Government, 1946	5
2.	Designating Terrorist Under UAPA	7
3.	High Court Judges Transfer	8
4.	Tribal Area Status for Ladakh	10
5.	Jammu & Kashmir Public Safety Act	13
6.	Zonal Councils	15
7.	Right to Have Access to Internet	16
8.	Multipurpose National Identity Card (MPNIC)	17
9.	How a US President can be Impeached	18

2. SOCIAL ISSUES

1.	Centre to bring ordinance to ban e-cigarettes in country	21
2.	New Fast-Track Courts to Conduct Speedy Trial of Sexual Offences	22
3.	Two out of Three Child Deaths due to Malnutrition	23
4.	Poshan Abhiyaan or National Nutrition Mission (NNM)	24
5.	All India Survey on Higher Education: 2018-19	26
6.	Govt Launches New Framework to sustain India's '100% ODF status'	28

3. INTERNATIONAL RELATIONS AND ORGANISATIONS

1.	China's One Country Two Systems Policy	31
2.	What is an Interpol Red Notice, What Does It Do?	33
3.	India Takes Over COP Presidency from China	34
4.	Joint Statement on Cooperation between India and Russia	35
5.	PM Unveils 'Act Far East' Policy	36
6.	Regional Comprehensive Economic Partnership (RCEP)	37
7.	India-China Face-off at Pangong Tso Lake	39
8.	Delhi-Dhaka ties best ever now: Bangladesh Minister	41

4. ECONOMY

1.	India To Get Swiss Bank Details of Indians	42
2.	External Benchmark-Based Lending	43
3.	Ujjwala Yojana Achieves Target	44
4.	One Nation One Ration Card	46

5. Kisan Man Dhan Yojana	46
6. India's second Multi-Modal Terminal	47
7. The National Agricultural Cooperative Marketing Federation of India (NAFED)	48
8. Market Intervention Price Scheme	50
9. Govt Imposes Minimum Export Price on Onion	51
10. New Measures to Boost Exports and Housing Sector	52
11. Nirvik Scheme	54
12. Government to Peg MGNREGA Wages to Inflation in Bid to Hike Incomes	55
13. 37 th GST Council Meeting	56
14. Pradhan Mantri Matru Vandana Yojana	57
15. A deep cut in the Corporate Taxes	57
16. Participatory Guarantee System (PGS)	59
17. Addressing the Demand Drought in Our Economy	61

5. ENVIRONMENT

1. Compensatory Afforestation Fund	64
2. Impact of Climate Change on India's Banana Crop	64
3. Government to Develop A Master Plan for Tigers at High Altitude	66
4. COP14 of United Nations Convention to Combat Desertification (UNCCD)	67
5. How Are Vehicles Tested for Pollution?	67
6. Desertification of Land Around the World	68
7. India Lost 31% of Grasslands in a Decade	71
8. Vulture Culture: How the Bird Was Saved from Extinction	73
9. Tamil Nadu Electric Vehicle Policy, 2019	75
10. India Cooling Action Plan	76
11. Paraquat Herbicide	77
12. Invasive Species May Soon Wipe Out Shola Vegetation from Nilgiris: Report	78
13. National framework for Recycling of Plastic Waste.	79
14. Blooming of Microalgae Kills Coral Reefs in Gulf of Mannar	81
15. Clean Air Coalition	82
16. Drought Action Plan	84
17. Emissions Trading Scheme (ETS)	85
18. National Green Tribunal	86
19. Special Report on the Ocean and Cryosphere in a Changing Climate	89
20. Waste Management on Siachen Glacier	91

21. Shrinking Buffer Zone at Sathyamangalam Tiger Reserve	92
22. India, Nepal, Bhutan to Count Tigers in High Altitudes	94
23. Forest-PLUS 2.0	95

6. SCIENCE AND TECHNOLOGY

1. Economics Behind E-Vehicle Batteries	97
2. Asteroid Impact Deflection Assessment (AIDA)	98
3. Ethanol Blended Petrol (EBP) Programme	99
4. Genome Sequencing of Bacteria to Help with Biocontrol in Farming	101
5. India Declared Avian Influenza Free	102
6. ISRO's Vikram Lander Is Lost, But This Hardly Matters	104
7. Classification of Influenza as H5N1, H1N1 and Other Kinds	105
8. Eradicating Malaria By 2050	106
9. National Animal Disease Control Program	108
10. Water Found for First Time on Potentially Habitable Planet	110
11. IIT Madras finds an eco-friendly way to degrade plastics	111
12. Lunar Reconnaissance Orbiter (LRO)	112
13. Transgenic Mosquitoes Transfer Genes to Native Mosquito Species	113
14. Controlled Human Infection Model (CHIM)	115
15. Chandrayaan-2 and the Approaching Lunar Night	115
16. Methane-Powered Rocket Engine	117
17. First Indigenous Fuel Cell System launched	118
18. Radioactive Cesium Technology for measuring Soil Erosion	118
19. Project NETRA	119
20. How Gravity Distorts our View of a Black Hole	121

7. MISCELLANEOUS

1. Great Barrier Reef	123
2. Who is a Professor Emeritus?	123
3. Sea Route from Chennai to Vladivostok	124
4. 'Eat Right India' Campaign	126
5. Institutions of Eminence (IoE) Scheme	128
6. Global Liveability Ranking 2019	129
7. Mapping Lightning Across India	130
8. 'ANGAN'- International Conference on Energy Efficiency in Building Sector	133

9. India Accounted for 2.8 Million Displaced People in 2018: IDMC Report	134
10. District Mineral Foundation	135
11. Scientific Social Responsibility (SSR) Policy	137
12. Central Equipment Identity Register (CEIR)	138
13. Akademik Lomonosov- Russia's Floating Nuclear Power Plant	138
14. Impact of Attack on Saudi Arabia's Oil Facility	140
15. National Institute of Ocean Technology (NIOT)	141
16. India Is the Top Source of Immigrants Across the Globe	142
17. Atlantic Meridional Overturning Circulation (AMOC)	142
18. Mochi Swabhimaan Initiative	144
19. Paika Rebellion (1817)	145
20. Industry 4.0	146



1. POLITY & GOVERNANCE

1. India's Interim Government, 1946

Why in News?

- ▶ On September 2, 1946, the interim government of India led by Jawaharlal Nehru was formed. It was the only such cabinet in India's history in which arch-rivals Congress and the Muslim League shared power at the Centre. The interim government functioned with a great degree of autonomy, and remained in power until the end of British rule, after which it was succeeded by the Dominions of India and Pakistan.

Events That Led to The Formation of Interim Government:

- ▶ Starting with the Cripps mission in 1942, a number of attempts were made by colonial authorities to form an interim government in India.
- ▶ In 1946, elections to the Constituent Assembly were held following the proposals of the British Cabinet Mission dispatched by the British Prime Minister Clement Attlee.
- ▶ In this election, the Congress obtained a majority in the Assembly, and the Muslim League consolidated its support among the Muslim electorate.
- ▶ Viceroy Wavell subsequently called upon Indian representatives to join the interim government.
- ▶ A federal scheme had been visualised under the Government of India Act of 1935, but this component was never implemented due to the opposition from India's princely states.
- ▶ As a result, the interim government functioned according to the older Government of India Act of 1919.

The Interim Cabinet:

- ▶ On September 2, 1946, the Congress party formed the government. On September 23, the All-India Congress Committee (AICC) ratified the Congress Working Committee's decision.
- ▶ The Muslim League initially decided to sit out of the government, and three of the five ministries reserved for Muslims were occupied by Asaf Ali, Sir Shafaat Ahmad Khan, and Syed Ali Zaheer, all non-League Muslim representatives. Two posts remained vacant.
- ▶ However, after Lord Wavell agreed to allot all five reserved portfolios to the Muslim League if it agreed to cooperate, the latter finally joined.
- ▶ In October, the cabinet was reshuffled to accommodate the new Muslim League members, and Sarat Chandra Bose, Sir Shafaat Ahmad Khan and Syed Ali Zaheer from the earlier team were dropped. Baldev Singh, C.H. Bhabha, and John Matthai continued to represent minority communities.

The cabinet after October 1946 was as follows:

MEMBERS	PORTFOLIOS HELD
Jawaharlal Nehru	External Affairs & Commonwealth Relations
Sardar Vallabhai Patel	Home, Information & Broadcasting
Dr. Rajendra Prasad	Food & Agriculture
Dr. John Mathai	Industries & Supplies
Jagjivan Ram	Labour
Sardar Baldev Singh	Defence
C.H. Bhabha	Works, Mines & Power
Liaquat Ali Khan	Finance
Abdur Rab Nishtar	Posts & Air
Asaf Ali	Railways & Transport
C. Rajagopalachari	Education & Arts
I.I. Chundrigar	Commerce
Ghaznafar Ali Khan	Health
Joginder Nath Mandal	Law

Significant Decisions by Interim Cabinet:

- ▶▶ On September 26, 1946, Nehru declared the government's plan to engage in direct diplomatic relations with all countries and goodwill missions. He also expressed support for the independence of colonised nations.
- ▶▶ In November 1946, **India ratified the Convention on International Civil Aviation.** In the same month, a committee was appointed to advise the government on nationalising the armed forces.
- ▶▶ In December, Maulana Abul Kalam Azad was inducted into the cabinet.
- ▶▶ The year 1947 saw the opening of diplomatic channels between India and many countries. In April 1947, the US announced the appointment of Dr. Henry F. Grady as its ambassador to India. Embassy level diplomatic relations with the USSR and the Netherlands also started in April. In May, the first Chinese ambassador Dr. Lo Chia Luen arrived, and the Belgian Consul-General in Kolkata was appointed Belgium's ambassador to India.
- ▶▶ On June 1, the Indian Commonwealth Relations Department and the External Affairs Department were merged to form the single Department of External Affairs and Commonwealth Relations.
- ▶▶ After Partition was announced on June 3, a dedicated cabinet sub-committee was formed to deal with the situation on June 5, and consisted of Jawaharlal Nehru, Sardar Vallabhai Patel, Liaquat Ali Khan, Abdur Rab Nishtar and Baldev Singh.

2. Designating Terrorist Under UAPA

Context:

- ▶ Maulana Masood Azhar, Hafiz Saeed, Zaki-ur-Rehman Lakhvi and Dawood Ibrahim, who are on India's most-wanted list, became the first individuals to be declared terrorists invoking the **new Amendments to the Unlawful Activities (Prevention) Act Passed** by Parliament recently.

Designation of Terrorist:

- ▶ Jaish-e-Mohammad (JeM) chief Azhar figures as the first name in list in Fourth Schedule of UAPA followed by Lashkar-e-Taiba (LeT) chief Saeed, LeT chief commander Lakhvi and underworld don Dawood. **All of them have already been designated global terrorists by the United Nations** earlier for their involvement in terrorist acts and have red corner notices issued against them by the Interpol.

UAPA new Amendment Provision:

- ▶ According to the amendment, individuals could also be declared as terrorists. Earlier, only groups or organisations could be declared as terrorists.
- ▶ The notification was issued based on **clause (a) of sub-section (1) of section 35 of the Unlawful Activities (Prevention) Act** which empowers the Central government to notify the name of an individual in the fourth schedule to the Act, if it believes that the individual is involved in terrorism. The new Amendment seek “to introduce fourth schedule to add or remove the name of individual terrorists.
- ▶ This will allow the Central government to designate individual terrorist and bring in embargo on arms/assets seizures. The individual however can appeal against the inclusion of his/her name and seek a hearing before the review committee, constituted by the Central government under UAPA.

United Nations:

- ▶ Azhar has been designated as a global terrorist by the United Nations under the **United Nations Security Council** Resolution 1267 on May 1 this year.
- ▶ Dawood is also designated as a global terrorist by the United Nations under the United Nations Security Council Resolution 1267 and listed in Al-Qaeda sanction list on November 3, 2003.

Issues already with Unlawful Activities Prevention Act, 1967 (UAPA):

- ▶ It casts such a wide net of offences that it makes all kinds of legitimate, constitutionally protected activity an offence: the police can choose who they want to prosecute, when and for what reason.

- ▶▶ It allows for persons to be held in custody for six months before they get to know the case against them. Bail is so stringent as to be almost unavailable, this is an affront to the 'dignity' and the 'presumption of innocence' that our Constitution entitles all of us to. It reverses the presumption of innocence and presumes guilt, a guarantee of wrongful imprisonment and false convictions.

3. High Court Judges Transfer

Context:

- ▶▶ Supreme Court collegium consisting of five senior-most judges recommended the transfer of Madras High Court Chief Justice VK Tahilramani to the Meghalaya High Court.

Background:

- ▶▶ This recommendation was part of a series of appointments and transfers effected by the Supreme Court collegium in the last week of August.
- ▶▶ As per the norm, Tahilramani was given an opportunity to present her views on the transfer to the collegium.
- ▶▶ On September 3, another resolution of the collegium said that her request to reconsider the transfer could not be accepted. "On reconsideration, the collegium is of the considered view that it is not possible to accede to her request," said the resolution.

Concern:

- ▶▶ The transfer has led to a barrage of criticism against the collegium and its opaque process of appointments and transfers. Tahilramani is the senior-most among the High Court judges currently holding office. Supreme Court collegium's opaque process of transfers turning High Courts into subservient units of the apex court, even though that violates Constitutional principles. If justice is not being administered efficiently in one High Court under a specific chief justice, could another High Court function smoothly under the same official? On the other hand, can a chief justice consider one High Court to be more important than another and refuse a posting, given that the Constitutional position of all High Courts are equal?

Position of High Court:

- ▶▶ The Supreme Court has appellate powers over all High Courts.
- ▶▶ But this does not mean the High Courts are subordinate or subservient to the Supreme Court in any manner.
- ▶▶ The judicial system in India has its origins in the colonial era and borrows heavily from the British system.

- ▶▶ In legal parlance, both the Supreme Court and the High Courts are designated as “**courts of record**”.
- ▶▶ This means that the court proceedings are preserved for future, including for the purposes of appeal.
- ▶▶ Under the Constitution, **Article 129** expressly declared Supreme Court to be a court of record, the High Courts are declared so under **Article 215**.
- ▶▶ **Case laws**
 1. In MV Elisabeth vs Harwan Investment and Trading Private Limited, the Supreme Court said, “High Courts have unlimited jurisdiction to determine their own powers.”
 2. In Tirupati Balaji Developers vs State of Bihar, following a controversy about some directions issued by the Supreme Court registrar to the Patna High Court, the Supreme Court elaborated on the relationship between the High Courts and the Supreme Courts.
 3. The Supreme Court acknowledged the Constitutional scheme where the powers of the High Courts are even wider than that of the Supreme Court in certain circumstances.
 4. For example, a High Court is granted power of superintendence over subordinate courts but the Supreme Court does not have any superintendence powers over the High Courts.

Transfer of High Courts Judges:

- ▶▶ The Supreme Court has recognised the importance of judicial transfers in the High Courts and the effect that such transfers have on the administration of justice.
- ▶▶ Given the experience of the Emergency era, when transfers were used as a form of punishment by the executive, the Supreme Court, through what is now known as the “**Three Judges cases**”, **has monopolised transfer powers in its collegium**.
- ▶▶ Unlike the appointment of High Court judges, which is done by a collegium of three senior-most Supreme Court justices, **transfers are so important, they are collectively decided by the full collegium of the five senior-most judges**.
- ▶▶ By law, a **judicial appointment or transfer is made through orders of the President**.
- ▶▶ But **Article 222** of the Constitution as interpreted by the Supreme Court has put in place an implicit restriction on the President by making the concurrence of the chief justice of India a condition for the transfer.
- ▶▶ No transfer order can be issued by the President without the advice of the chief justice of India. On the other hand, the chief justice can advise such a transfer only after a resolution in the collegium.

- ▶▶ The collegium may also take the opinion of a Supreme Court judge hailing from the concerned High Court of the judge being transferred or the relevant High Court chief justice to effect a transfer.
- ▶▶ However, the consultative process that had been put into place to guard the judiciary against arbitrary transfers has been criticised over the years for itself becoming arbitrary. The case of Justice Tahilramani fits into this framework where the public is left with no information on why the transfer was made.

4. Tribal Area Status for Ladakh

Context:

- ▶▶ THE NATIONAL Commission for Scheduled Tribes (NCST) has sent a formal recommendation to the Ministry of Home Affairs (MHA) to declare Ladakh a “tribal area” in the Sixth Schedule of the Constitution.

What is Tribal Area:

- ▶▶ The Constitution of India makes special provisions for the administration of the tribal dominated areas in four states viz. Assam, Meghalaya, Tripura and Mizoram.
- ▶▶ As per article 244 and 6th Schedule, these areas are called “Tribal Areas“, which are technically different from the Scheduled Areas under fifth schedule.

Why Such Move?

- ▶▶ According to the NCST, this will help “**democratic devolution of powers, preserve and promote distinct culture of the region**, protect agrarian rights including rights on land and enhance transfer of funds for speedy development of the region.
- ▶▶ There is also same demand from tribal population of Ladakh area.
- ▶▶ Within J&K’s budget, Ladakh usually got the short shrift. Fund transfer was usually delayed — by which time, the construction season was over. Devolution of tribal development funds (TDPs) was based primarily on population, and didn’t take into consideration area and geographical spread, relative inaccessibility, relative backwardness, and the presence and demography of nomadic tribes. As a result, development of this region has been generally neglected.

Strategic Location of Ladakh:

- ▶▶ The passes of Ladakh connect Central Asia, South Asia and China, and the region is cut off from the rest of India for six months during winter.
- ▶▶ The tribes here have limited means of livelihood, poor roads, impossible telecom and internet connectivity, undeveloped markets for their produce and low employment

opportunities. The proximity of the India-Pakistan-China border, and the ubiquitous presence of Indian Army and paramilitary forces, underlines not only Ladakh's strategic sensitivity, but also its people's vulnerability.

▶▶ Tribes

1. Tribes constitute 90% of the population of Ladakh — made up of the districts of Leh and Kargil. Gujjars, Bakarwals, Bots, Changpas, Baltis and Purigpas have played an important role in various wars that have been fought, and have been displaced and disturbed by border tensions.

▶▶ Agriculture

1. Ladakh's terrain is essentially inhospitable to agriculture and has been badly neglected by government agencies. In the apricot cluster of Kargil — which accounts for about half of J&K's total apricot plantation — the crop has been annually afflicted by the codling moth for a decade. No solution for this blight has been sought yet.
2. Kargil's famous apples were quarantined by Kashmiri lobbies from going beyond Kargil, and the produce was forced to be locally consumed.
3. If some of the nomadic tribes in Ladakh are trained and funded to grow their livestock on a commercial scale, it could prevent a net outflow of as much as Rs 800 crore from going out of the region to other states.

Way Forward:

- ▶▶ The erstwhile state of J&K was indifferent to the needs of the tribes of Ladakh. Tribal affairs officers should be established in Leh and Kargil, as there are in other states. In fact, there is need for a separate tribal development budget head to facilitate their development.
- ▶▶ With Ladakh as a Union territory, humane laws such as the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, and the vigilance of national watchdogs, like the National Commission for Scheduled Tribes (NCST), can be duly applicable to safeguard the welfare of the tribes of this region.

Difference Between 5th Schedule and 6th Schedule Areas:

- ▶▶ While both the areas under 5th schedule and 6th schedule have dominance of the tribal people, constitution calls them with different names viz. Scheduled Area under 5th schedule while Tribal areas under 6th schedule.
- ▶▶ While executive powers of the union extend in Scheduled areas with respect to their administration in 5th schedule; the 6th schedule areas remain within executive authority of the state.

- ▶▶ While 5th schedule envisages creation of Tribal Advisory Council, 6th schedule provides for District Councils and Regional Councils with certain legislative and judicial powers.

Legislative Powers of the Sixth Schedule Councils:

- ▶▶ The district councils and regional councils have powers to make laws on certain matters of local importance but all such laws require the assent of the governor. The subjects on which these councils can make laws include: **Roads, bridges, ferries etc.** modes of transport Animal husbandry, veterinary training & practice Primary and Secondary Education
- ▶▶ Agriculture including farm research and education Fisheries
- ▶▶ Social security and social insurance employment and unemployment Flood control
- ▶▶ Entertainment including Cinemas and Theatres Public health, sanitation, hospitals and dispensaries Minor irrigation. Trade and commerce in certain products such as food, cattle fodder, raw cotton, raw jute etc. Libraries, museums, monuments etc. Alienation of land.

Judicial Powers of the Sixth Schedule Council:

- ▶▶ The laws made by the state legislature on any subject that comes within the jurisdiction of the council, would not extend within the jurisdiction of the autonomous council unless the council so directs by public notification.
- ▶▶ The President in regard to a Central Act and the Governor in regard to a State Act may direct that the Central Act or State Act shall not apply to an autonomous district or shall apply with such modifications as may be specified.
- ▶▶ The Councils have also been endowed with wide civil and criminal judicial powers, for example establishing village courts etc.

National Commission for Scheduled Tribes:

- ▶▶ The National Commission for Scheduled Tribes (NCST) was established by amending **Article 338** and inserting a new **Article 338A** in the Constitution through the Constitution (89th Amendment) Act, 2003.
- ▶▶ By this amendment, the erstwhile National Commission for Scheduled Castes and Scheduled Tribes was replaced by two separate Commissions namely-
 - (i) the National Commission for Scheduled Castes (NCSC), and
 - (ii) the National Commission for Scheduled Tribes (NCST).

Functions of the Commission:

- ▶▶ To investigate & Monitor matters relating to Safeguards provided for STs under the Constitution or under other laws or under Govt. Order, to evaluate the working of such Safeguards.

- ▶▶ To inquire into specific complaints relating to Rights & Safeguards of STs;
- ▶▶ To participate and advise in the Planning Process relating to Socio-economic development of STs, and to evaluate the progress of their development under the Union and any State;
- ▶▶ To submit report to the President annually and at such other times as the Commission may deem fit, upon/ working of Safeguards, Measures required for effective implementation of Programmers/ Schemes relating to Welfare and Socio-economic development of STs;
- ▶▶ To discharge such other functions in relation to STs as the President may, subject to the provisions of any law made by Parliament, by rule specify;

5. Jammu & Kashmir Public Safety Act

Why in News?

- ▶▶ National Conference leader and former Jammu and Kashmir chief minister Farooq Abdullah has been detained under the Jammu and Kashmir Public Safety Act.
- ▶▶ Last month, former IAS officer Shah Faesal was stopped at New Delhi airport and sent back to Kashmir, where he has been detained under the Public Safety Act (PSA).

About Jammu & Kashmir Public Safety Act (PSA):

- ▶▶ Jammu and Kashmir Public Safety Act 1978, was enacted "in the interest of the security of the State and public order".
- ▶▶ It contains provisions for designating protected and prohibited areas, prevention of circulation of documents in the interests of communal harmony, etc.
- ▶▶ The Government can order the detention of a person:
 - ❖ To prevent him from acting in any manner prejudicial to security of the State or maintenance of the public order.
 - ❖ If he is a foreigner within the meaning of Foreigners Act
 - ❖ If he is a person residing in the area of the State under the occupation of Pakistan and it is necessary to regulate his presence or to expel him.
- ▶▶ As per the definition given in the Act, "acting in any manner prejudicial to the maintenance of public order" means:
 1. Promoting, Propagating, or attempting to create, feelings of enmity or hatred or disharmony on grounds of religion, race, caste, community, or region;
 2. Making preparations for using, or attempting its use, or using, or instigating, inciting, or otherwise abetting the use of force where such preparation, using, attempting, instigating, inciting, provoking or abetting, disturbs or is likely to disturb public order;

3. Attempting to commit, or committing, or instigating, inciting, provoking or otherwise abetting the commission of mischief within the meaning of section 425 of the Ranbir Penal Code where the commission of such mischief disturbs, or is likely to disturb public order.

▶▶ Detention orders under PSA can be issued by **Divisional Commissioners or District Magistrates.**

The detaining authority need not disclose any facts about the detention “which it considers to be against the public interest to disclose”. As per section 13(1), the authority making the detention should communicate to the detenu the reasons of detention. This is to enable the detenu to make a representation against the order of detention in exercise of the Fundamental Right guaranteed under Article 22(5) of the Constitution of India.

▶▶ However, the authority need not disclose such facts to the detenu which it considers to be against public interest to disclose (Section 13(2)). Therefore, the right under Section 13(1) can be effectively defeated if the authority chooses not to disclose whole facts in public interest.

Period of Detention:

▶▶ The Maximum period of detention in the case of persons acting in any manner prejudicial to the security of the state is two years.

▶▶ In Case of a person acting prejudicial to the maintenance of public order, the maximum period of detention is 12 months. Within four weeks of passing a detention order, the Government has to refer the case to an Advisory Board, which consists of a chairperson, who is or has been a judge of the High Court, and two other members who are, or have been, or are qualified to be appointed as Judges of the High Court.

▶▶ The Advisory Board has to give its opinion within 8 weeks of detention order.

▶▶ If the Advisory Board opines that there are sufficient causes for preventive detention, the Government can keep the person under detention for such period as it thinks fit, subject to the maximum limit.

Can the Detention be Challenged?

▶▶ The Advisory Board is supposed to examine if there are sufficient reasons for preventive detention.

▶▶ It is pertinent to note that the detenu has no right to engage a legal practitioner before the Advisory Board. The Advisory Board can also decide if the disclosure of grounds of detention to the detenu will affect public interest.

▶▶ The detenu is not entitled to the report of the Advisory Board, if the Board decides that it should remain confidential.

- ▶▶ **The detention can be challenged in habeas corpus petitions filed before High Court under Article 226.** However, the scope of challenge is limited to grounds of procedural violations.
- ▶▶ If there is non-application of mind by the detaining authority, or non-communication of the grounds of detention to the detenu, the High Court can quash the detention order as illegal.
- ▶▶ It is important that the District Magistrate forms independent opinion regarding the necessity of ordering preventive detention. If the Magistrate merely copies the report of the police, it will be a case of non-application of mind. Non-supply of relevant material documents to the detenu is also a ground for setting aside detention order (Bilal Ahmed Dar v State of J&K).
- ▶▶ The grounds of detention are not to be formulated in shorthand, or in a language of abbreviations or acronyms only known to the detaining authority. (Tanveer Ahmed v State of J&K)

Concerns/Criticisms of the Act:

- ▶▶ Global human rights organisations such as Commonwealth Human Rights Initiative (CHRI) and Amnesty International have noted in their reports that responses by various government authorities to applications filed under the Right to Information (RTI) Act, 2005 suggest that no Rules have so far been framed to lay down procedures for the implementation of the provisions of the PSA.
- ▶▶ An Amnesty report published earlier this year, which analysed over 2000 case studies of PSA detainees between 2007 and 2016, over 2,400 PSA detention orders were passed, of which about 58% were quashed by the courts. J&K parties have often blamed each other for the rampant misuse of the PSA.

6. Zonal Councils

Why in News?

- ▶▶ The 29th meeting of the Northern Zonal Council will be held on 20th September at Chandigarh.

Zonal Councils:

- ▶▶ Zonal Councils are statutory bodies established under the State's Reorganisation Act 1956.
- ▶▶ They are advisory bodies and were established to promote interstate cooperation and coordination.
- ▶▶ There are five zonal councils in India, as follows:

- ❖ Northern Zonal Council: Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, and Rajasthan
- ❖ Central Zonal Council: Chhattisgarh, Madhya Pradesh, Uttarakhand and Uttar Pradesh. Eastern Zonal Council: Bihar, Jharkhand, Odisha, and West Bengal
- ❖ Southern Zonal Council: Andhra Pradesh, Karnataka, Kerala, Puducherry, Tamil Nadu, and Telangana. Western Zonal Council: Dadra and Nagar Haveli, Daman and Diu, Goa, Gujarat, and Maharashtra. Andaman and Nicobar Islands, as well as Lakshadweep, are not members but are special invitees to the Southern Zonal Council. The north-eastern states are not members of any of the above councils. Their problems are addressed by another statutory body, the North Eastern Council, created by the North Eastern Council Act, 1971.

7. Right to Have Access to Internet

Why in News?

- ▶▶ In a landmark judgment, the **High Court of Kerala** held that right to have access to internet is a fundamental right forming **part of right to privacy under Article 21** of the Constitution. The court also observed that the right to Internet access **also forms part of Right to Education**.

Background:

- ▶▶ The order came on a petition filed by a student at Sree Narayana College, Chelanur, Kozhikode challenging restrictions on usage of mobile phones in girls' hostel.
- ▶▶ The student alleged that she was expelled from the college for not abiding by the restrictions on mobile phones in the hostel. According to her, the inmates are not allowed to use mobile phones between 6 pm and 10 pm.
- ▶▶ The court accepted the petitioner's contention that the restrictions on the use of mobile phones amounted to violation of **fundamental right to freedom of speech and expression under Article 19 (1) (a)**.

Observations by Kerala High Court:

- ▶▶ **The Human Rights Council of the United Nations** has found that the right of access to Internet is a fundamental freedom and a tool to ensure right to education, a rule or instruction which impairs the said right of the students cannot be permitted to stand in the eye of law. The court observed that the action of the college authorities infringed the fundamental freedom as well as privacy and would adversely affect the future and career of students who want to acquire knowledge and compete with their peers, such restriction could not be permitted to be enforced.

- ▶▶ The court while citing the observations of the Supreme Court in the **S. Rengarajan and others v. P. Jagjivan Ram (1989)** case said “the fundamental freedom under Article 19(1)(a) can be reasonably restricted only for the purposes mentioned in Article 19(2) and the restriction must be justified on the anvil of necessity and not the quicksand of convenience or expediency.”
- ▶▶ The court observed that the hostel authorities were expected to enforce only those rules and regulations for enforcing discipline. Enforcement of discipline shall not be by blocking the ways and means of the students to acquire knowledge.
- ▶▶ The court also observed that mobile phones, once a luxury, have now become "part and parcel of the day to day life and even to a stage that it is unavoidable to survive with dignity and freedom".
- ▶▶ “A Student above the age of 18 Years shall be given the freedom to choose the mode for her studies provided it does not cause any disturbance to others.
- ▶▶ The Schools in Kerala promotes digitalisation with smart class rooms and the modern technology has taken its place in all the fields even from primary section.
- ▶▶ Thus, the usage of mobile phones in order to enable the students to have access to internet will only enhance the opportunities of students to acquire knowledge from all available sources based on which they can achieve excellence and enhance quality and standard of education”.

Information Technology Policy of the Kerala Government:

- ▶▶ The Petitioner referred to the Budget Speech made by Kerala Finance Minister in 2017, where it was announced that **Kerala Government had recognized ‘right to internet’ as a human right and was making efforts to make internet accessible to all.**
- ▶▶ Reference was made to the **Information Technology Policy of the Kerala Government**, as per which Government was stated to be adopting “Mobile first” approach for e-governance services by leveraging high mobile penetration and coverage in the state.

8. Multipurpose National Identity Card (MPNIC)

Why in News?

- ▶▶ Announcing that the 2021 census exercise would be carried out digitally, Union Home Minister Amit Shah suggested **one card for all utilities** in future.
- ▶▶ The Home Minister’s suggestion resembles the so-called Multipurpose National Identity Card (MPNIC) that was first suggested in 2001.

Background:

- ▶▶ The Multipurpose National Identity Card (MPNIC) was first suggested by a 2001 report on “Reforming the National Security System” by an empowered Group of Ministers (eGOM) during the Atal Bihari Vajpayee government.
- ▶▶ The eGOM report itself was a response to the K Subrahmanyam-led Kargil Review Committee, which was instituted in the wake of the Kargil conflict of 1999.
- ▶▶ The eGOM recommended MPNIC in relation to the growing threat from illegal migration.
- ▶▶ It said that all citizens should be given a Multi-Purpose National Identity Card (MPNIC) and non-citizens should be issued identity cards of a different colour and design. This should be introduced initially in the border districts or maybe in a 20 Kms border belt and extended to the hinterland progressively.

Highlights of Home Minister’s Statement:

- ▶▶ Home Minister has clarified that there is no specific scheme that is in the offing. But the government would want to link various databases if it intends to create a card that works as a single point of access to various accounts held by an individual.
- ▶▶ He hinted at the **possibility of linking the registration of birth and death with the country’s voter list**, this way no one would have to apply for a voter card when they reach the voting age – it would happen on its own. Similarly, if someone dies, the voter list would be updated on its own. Home Minister clarified that it was possible to get rid of excess processes and cards such as the Aadhaar card, the voter card, the identity card etc.
- ▶▶ He further argued that if this Census was done properly and in the right format, it was possible that there could be just one single card in which all the other cards could reside. In other words, a single card that has your bank card, voter id card, Aadhaar card, and passport.

9. How a US President can be Impeached

Why in News?

- ▶▶ US House of Representatives Speaker Nancy Pelosi announced that the House would launch an impeachment inquiry against President Donald Trump, over his alleged efforts to pressure Ukraine to investigate Joe Biden, Trump’s potential rival in the 2020 elections.

Background:

- ▶▶ No US President has ever been removed as a direct result of impeachment.
- ▶▶ The House did impeach two Presidents – Andrew Johnson (1968) and Bill Clinton (1998) but the Senate did not convict them.
- ▶▶ In between, President Richard Nixon (1974) resigned before he could be removed.

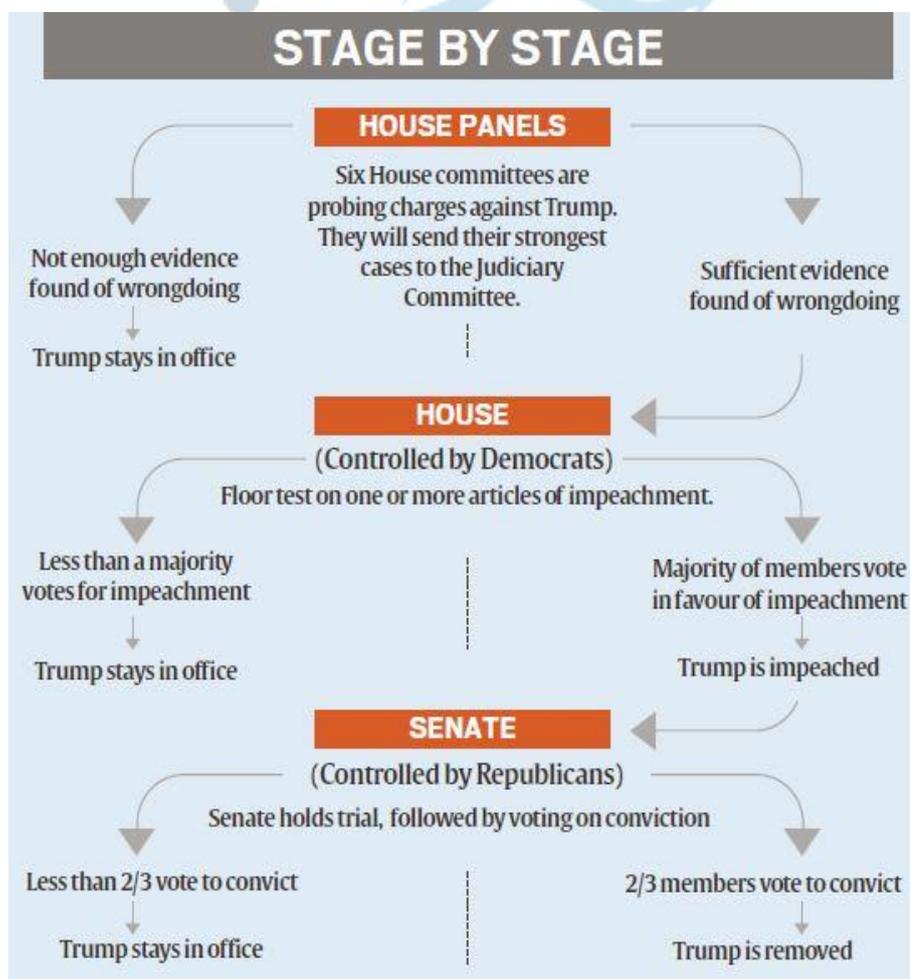
What is Impeachment?

- ▶▶ Impeachment is a provision that allows Congress to remove the President of the United States. Under the US Constitution, the House of Representatives (Lower House) has the “the sole power of impeachment” while the Senate (Upper House) has “the sole power to try all impeachments”. The Chief Justice of the US Supreme Court has the duty of presiding over impeachment trials in the Senate.

Grounds for Impeachment:

- ▶▶ The President can be removed from office for “treason, bribery, or other high crimes and misdemeanors”. What constitutes these “high crimes” and “misdemeanors” (misdemeanors), however, is not clearly spelt out.
- ▶▶ The New York Times explained that the expression “high crimes and misdemeanors” came out of the British common law tradition. “Essentially, it means an abuse of power by a high-level public official. This does not necessarily have to be a violation of an ordinary criminal statute,”. Historically, in the US, it has encompassed corruption and other abuses, including trying to obstruct judicial proceedings.

Impeachment Procedure:



- ▶▶ **HOUSE VOTE:** It begins with an investigation by a House committee. In the Nixon and Clinton cases, the House Judiciary Committee held that investigation and recommended articles of impeachment to the full House.
- ▶▶ If they find that there is enough evidence of wrongdoing, it will refer the matter to the full House (see flow chart).
- ▶▶ **HOUSE VOTE:** When the full House votes, if one or more of the articles of impeachment gets a majority vote, the President is impeached. Next, the proceedings move to the Senate.
- ▶▶ **SENATE TRIAL & VOTE:** The Senate holds a trial, overseen by the chief justice of the Supreme Court. A team of lawmakers from the House, known as managers, play the role of prosecutors, The NYT explained.
- ▶▶ The President has defence lawyers, and the Senate serves as the jury. If at least two-thirds of the Senators present find the President guilty, he is removed and the Vice President takes over as President.

What Lies Ahead?

- ▶▶ The House has 235 Democrats, 199 Republicans, and one independent. The Democrats could, therefore, impeach Trump with no Republican support.
- ▶▶ The Senate has 53 Republicans, 45 Democrats and two independents who usually vote with the Democrats.
- ▶▶ Conviction of the President would require 67 votes, which cannot happen unless some Republicans vote against him.

2. SOCIAL ISSUES

1. Centre to bring ordinance to ban e-cigarettes in country

Why in News?

- ▶▶ The Union Cabinet is likely to approve an ordinance prohibiting the manufacture and sale of e-cigarettes in the country.

Highlights:

- ▶▶ The law would make production, manufacture, import, export, transport, sale, distribution or advertisements of e-cigarettes a cognizable offence.
- ▶▶ As per the draft bill, the offence will be punishable with jail up to one year or fine up to Rs. 1 lakh or both for first-time offenders, and jail of up to three years and fine up to 5 lakhs for repeat offenders. Storage of e-cigarettes shall also be punishable with imprisonment up to six months or fine up to 50,000 or both.
- ▶▶ Experts from various fields have welcomed the move and urged the government to pass the ordinance in the larger interest of public health.
- ▶▶ E-Cigarettes are banned in about 30 countries.
- ▶▶ While anti-tobacco health experts are calling it a move in the right direction, the tobacco industry and its allies state that if enforced, this would be a draconian law hitting at the livelihood of many.

What are e-cigarettes?

- ▶▶ An electronic cigarette (or e-cig) is a battery-powered vaporizer that mimics tobacco smoking.
- ▶▶ It works by heating up a nicotine liquid.
- ▶▶ Nicotine juice comes in various flavors and nicotine levels.
- ▶▶ e-liquid is composed of five ingredients: vegetable glycerin (a material used in all types of food and personal care products, like toothpaste) and propylene glycol (a solvent most commonly used in fog machines.) propylene glycol is the ingredient that produces thicker clouds of vapor. Electronic cigarettes, do not burn or use tobacco leaves but instead vaporise a solution the user then inhales.

Concerns:

- ▶▶ India has the second largest number of tobacco users (268 million) in the world – of these at least 12 lakhs die every year from tobacco-related diseases.
- ▶▶ Electronic Nicotine Delivery Systems (ENDS) solutions and emissions contain other chemicals, some of them considered to be toxicants.

- ▶▶ ENDS contain nicotine solution which is highly addictive.
- ▶▶ The flavouring agents and vaporizers used in e-cigarettes are also harmful for health.
- ▶▶ Use of e-cigarettes has documented adverse effects on humans like DNA damage, carcinogenesis, cellular, molecular and immunological toxicity.
- ▶▶ It can cause respiratory, cardiovascular and neurological disorders.
- ▶▶ They are also known to have adverse effects on pregnancy and foetal development.
- ▶▶ Lack of knowledge about negative effects of nicotine and easy accessibility of these products make the youth prone to addiction.

2. New Fast-Track Courts to Conduct Speedy Trial of Sexual Offences

Why in News?

- ▶▶ India will soon have 1,023 new fast-track special courts for speedy trial of over 1.66 lakh pending cases of crime against women and children.
- ▶▶ The proposal has been sent by the Union government, which estimates that each of these special courts is likely to dispose of at least 165 such cases per year.

Background:

- ▶▶ The Supreme Court has directed the Centre to set up special courts in each district across the country that have over a 100 cases of child abuse and sexual assault pending trial under the Protection of Children from Sexual Offences (POCSO) Act.

Jurisdiction of The Court:

- ▶▶ According to the Department of Justice under Union Law Ministry, out of the 1,023 fast-track special courts (FTSCs), 389 courts, according to a Supreme Court direction, will exclusively handle cases registered under Protection of Children from Sexual Offences (POCSO) Act.
- ▶▶ The remaining 634 FTSCs will deal with either rape or both rape and POCSO Act cases depending upon the pendency and requirement. It is expected that each fast-track special court will dispose 41-42 cases each quarter.

Key Facts About the Pendency:

- ▶▶ According to official data with the Department of Justice, a total of 1,66,882 cases of rape and those under POCSO Act are pending trial in various courts in the country.
- ▶▶ There are 389 districts in the country where the number of pending cases under the POCSO Act exceeds 100. Therefore, as per the apex court directives, each such district will have one exclusive POCSO court, which will try no other cases, the note said.

Need for Special Courts:

- ▶▶ Present Slow pace of action on protection of children from sexual predators. As per available data, number of victims compensated under Pocso were 3% in 2015, 4% in 2016 and 5% in 2017.
- ▶▶ Around 1.5 lakh cases are pending trial before 670 designated courts.
- ▶▶ Though the Act mandates trial to be completed in one year, the deadline is impossible to achieve as each designated trial judge is saddled with a few hundred cases in addition to the trial of other cases.

Guidelines by The SC for Setting up of Special Courts:

1. **Funding:** Such courts will be funded by the central government. The fund will not only take care of the appointment of the presiding officer but also appointments of support persons, special public prosecutors, court staff and infrastructure, including creation of child-friendly environment and vulnerable witness court rooms.
2. **Awareness:** WCD ministry shall facilitate screening of “short clips intended to spread awareness of the subject in general, namely, prevention of child abuse and prosecution of crimes against children, in every movie hall and could also be transmitted by various television channels at regular intervals.
3. **A Child Helpline Number** should also be displayed in such clips and at schools and other public places.

3. Two out of Three Child Deaths due to Malnutrition

Why in News?

- ▶▶ A report regarding Under five mortality rate was recently published by **India State-Level Disease Burden Initiative** in The Lancet Child & Adolescent journal.

Key Findings of the Report:

- ▶▶ The report says the overall under-five death rate and the death rate due to malnutrition has decreased substantially from 1990 to 2017. But malnutrition is still the leading risk factor for death in children under five years.
- ▶▶ Two-thirds of the 1.04 million deaths in children under five years in India are still attributable to malnutrition.
- ▶▶ The report states that the disability-adjusted life year (DALY) rate attributable to malnutrition in children varies 7-fold among the States and is highest in Rajasthan, Uttar Pradesh, Bihar and Assam, followed by Madhya Pradesh, Chhattisgarh, Odisha, Nagaland and Tripura.

- ▶▶ The report also states that **low birth weight** needs particular policy attention in India as it is the biggest contributor to child death among all malnutrition indications and its rate of decline is among the lowest.
- ▶▶ Another important revelation is that **overweight** among a subset of children is becoming a significant public health problem as it is increasing rapidly across all States.

About India State-Level Disease Burden Initiative:

- ▶▶ The India State-Level Disease Burden Initiative is a joint initiative of the Indian Council of Medical Research (ICMR), Public Health Foundation of India, and Institute for Health Metrics and Evaluation in collaboration with the Ministry of Health and Family Welfare along with experts and stakeholders associated with over 100 Indian institutions, involving many leading health scientists and policy makers from India.

4. Poshan Abhiyaan or National Nutrition Mission (NNM)

Context:

- ▶▶ A study by Lancet has shown that India is unlikely to meet "Poshan Abhiyaan" scheme targets.

About Poshan Abhiyaan:

- ▶▶ Poshan Abhiyaan is Government of India's flagship programme to improve nutritional outcomes for children, pregnant women and lactating mothers.
- ▶▶ It was launched by Ministry of Women and Child Development in 2018.
- ▶▶ This initiative is aimed at sensitising public on healthy eating, addressing twin issues of malnutrition and undernutrition and obesity in some sections and also intensifying existing nationwide campaign for 'malnutrition-free India'.

▶▶ Targets:

- ❖ Poshan Abhiyaan, the world's largest nutrition programme, expected to benefit 10 crore people and launched in 2018 by government.
- ❖ Aims to reduce stunting, underweight, and low birth weight, each by 2% per year; and anaemia among young children, adolescents and women each by 3% per year until 2022. A special target for stunting is set at 25% by 2022.

Global Burden of Disease Study:

- ▶▶ Poshan Abhiyaan or National Nutrition Mission (NNM) for reduction in prevalence of stunting, underweight, low birth weight and anaemia in women and children by 2022 **if there is no progress achieved in improving the rate of decline observed between 1990 and 2017.**

- ▶▶ The study points out that India will miss its target for
 - ❖ Stunting Levels of 25% by 9.6%;
 - ❖ Underweight Target of 22.7% by 4.8%;
 - ❖ Desired Low Birth level of 11.4% by 8.9%;
 - ❖ Anaemia Level Among Women of 39.4% by 13.8%; and
 - ❖ Anaemia Level Among Children of 44.7% by 11.7%.

About the Report:

- ▶▶ The report is a joint initiative of Indian Council of Medical Research, Public Health Foundation of India (PHFI) and the Ministry of Health and Family Welfare.

For implementation of POSHAN Abhiyaan the four-point strategy/pillars of the Mission are:

- ▶▶ Inter-sectoral convergence for better service delivery
- ▶▶ Use of technology (ICT) for real time growth monitoring and tracking of women and children
- ▶▶ Intensified health and nutrition services for the first 1000 days
- ▶▶ Jan Andolan.

Monitoring:

- ▶▶ As a part of its mandate, NITI Aayog is required to submit implementation status reports of POSHAN Abhiyaan every six months to the PMO.

Background:

What is Malnutrition?

- ▶▶ Malnutrition indicates that children are either too short for their age or too thin.
- ▶▶ **Children** whose height is below the average for their age are considered to be stunted.
- ▶▶ Similarly, children whose weight is below the average for their age are considered thin for their height or wasted.
- ▶▶ Together, the stunted and wasted children are considered to be underweight – indicating a lack of proper nutritional intake and inadequate care post childbirth.

Malnutrition in India:

- ▶▶ India's performance on key malnutrition indicators is poor according to national and international studies.
- ▶▶ According to UNICEF, India was at the 10th spot among countries with the highest number of underweight children, and at the 17th spot for the highest number of stunted children in the world.

- ▶▶ Malnutrition affects chances of survival for children, increases their susceptibility to illness, reduces their ability to learn, and makes them less productive in later life.
- ▶▶ It is estimated that malnutrition is a contributing factor in about one-third of all deaths of children under the age of 5.

National Nutrition Strategy:

- ▶▶ Various government initiatives have been launched over the years which seek to improve the nutrition status in the country.
- ▶▶ These include the Integrated Child Development Services (ICDS), the National Health Mission, the Janani Suraksha Yojana, the Matritva Sahyog Yojana, the Mid-Day Meal Scheme, and the National Food Security Mission, among others. However, concerns regarding malnutrition have persisted despite improvements over the years. It is in this context that the National Nutrition Strategy has been released.

State-wide data on malnutrition presented by the Indian Council of Medical Research (ICMR).

- ▶▶ Malnutrition was the predominant risk factor for death in children younger than five in every state of India in 2017, accounting for 68.2 per cent of the total under-5 deaths, translating into 706,000 deaths (due to malnutrition).
- ▶▶ It was also the leading risk factor of loss of health among all age groups.
- ▶▶ These findings also raise concern about a host of policies in India which have been in practice since 1990 to tackle malnutrition, the key ones being **Integrated Child Development Scheme launched in 1975, the National Nutrition Policy 1993, the Mid Day Meal Scheme for school children 1995, and the National Food Security Act 2013**, as the prevalence of stunting, wasting and underweight remains high.

5. All India Survey on Higher Education: 2018-19

Context:

- ▶▶ The Human Resource Development Ministry has recently published the 2018-19 edition of the AISHE Report 2019, which has thrown up some startling findings and revelations about the higher education sector in the country.

About AISHE Report:

- ▶▶ AISHE is a Pan India, annual web-based survey which covers all the Higher Educational Institutions in the country conducted by Ministry of Human Resource Development in order to give an overview and understand about the latest developments in the field of higher education.

- ▶ Various parameters on which the data is collected are teachers, student enrolment, programs, examination results, education finance, infrastructure etc.

Key Findings of the Report:

- 1. Gross Enrolment Ratio (GER):** GER is statistical measure for determining number of students enrolled in undergraduate, postgraduate and research-level studies within country and expressed as a percentage of population.
 - ▶ Gross Enrolment Ratio (GER) in Higher education in India is **26.3%** which is a marginal increase from **25.8%** in 2017-18, which is calculated for 18-23 years of age group.
- 2. Gender parity among teachers:** The total number of teachers are 14,16,299, out of which about 57.8% are male teachers and 42.2% are female teachers. At All-India level there are merely 73 female teachers per 100 male teachers.
- 3. Gender parity among students:** It may be seen that ratio of male is higher than female in almost every level, except M.Phil., Post Graduate and Certificate.
Student enrolment at Under Graduate level has 51% male and 49% female. Diploma has a skewed distribution with 66.8% males and 33.2% females. Ph.D. level has 56.18% male and 43.82% female.
- 4. Narrowing Gender Gap:** Total enrolment in higher education has been estimated to be 37.4 million and among them female constitute of 48.6% of the total enrolment. It was a slight improvement from earlier 47.6% in 2017-18.
- 5. Number of Higher Educational institutes:** The number of universities has grown to 993 in 2018-2019 from 903 in 2017-18 and there is a 3.3% increase in the number of colleges in the country.
- 6. Preference to Higher studies:** Of the total student enrolment in higher studies, about 79.8% of the students belongs to Undergraduate level programme, while only 0.5% of students of the total enrolment enrolls for a Ph.D. programme.
- 7. Pupil Teacher Ratio (PTR):** PTR in Universities and Colleges is 29 and PTR for Universities and its Constituent Units is 18.

Other key Facts:

1. Share of female students is lowest in Institutions of National Importance followed by State Private Open Universities, Deemed Universities-Government.
2. Uttar Pradesh comes at number one with the highest student enrolment followed by Maharashtra and Tamil Nadu.

3. In **Uttar Pradesh and Karnataka**, there are now more females in the age group of 18-23 enrolling for higher education than male students.

State of Higher Education in India

- ▶▶ India's Higher Education sector is one of the largest in the world. However, it still lags behind other countries such as USA, China, Thailand etc. This has been aptly proved by the absence of India's top Universities in the world ranking list annually.

Some of the Key Challenges Faced by the Sector are as:

- ▶▶ **Dominance of private sector** that has caused skewed regional and sectoral growth.
- ▶▶ **Lack of focus on Skill Development:** Education system has been plagued with outdated syllabus, rote learning, lack of employability and lack of focus on skill development.
- ▶▶ **Overregulation:** Higher Education System is regulated by many bodies that causes overlap of power and confusion. This has drastically reduced the autonomy of Universities.
- ▶▶ **Lack of resources** and required funds and largely linear model with very little focus on specialization.
- ▶▶ **More emphasis only on few specialised branches** such as social sciences and absence of due importance on diversified fields.

Government Interventions:

- ▶▶ **Higher Education Financing Agency (HEFA)** scheme has been sanctioned to improve the development of infrastructure in premier education institutions.
- ▶▶ **Madhyamik and Uchchatar Shiksha Kosh:** Non lapsable funds for secondary and higher education sectors respectively.
- ▶▶ **New Delhi Declaration on Education:** It reiterates India's commitment to achieve SDG 4 and improve quality of education.

6. Govt Launches New Framework to sustain India's '100% ODF status'

Why in News?

- ▶▶ The Union Jal Shakti Ministry's Department of Drinking Water and Sanitation (DDWS), launched a 10-year national rural sanitation strategy **to sustain India's 100 per cent Open Defecation Free (ODF) status.**

About the Framework:

1. **Sustaining the Success:** The framework, to be in place from 2019 to 2029, will ensure that people sustain their usage of toilets.

2. **A District-level training management unit (TMU)** will be set up to provide oversight and support to gram panchayats (GPs) so that they ensure the operation and maintenance of sanitation infrastructure. The GPs are also supposed to conduct rapid assessment of water and sanitation gaps.
3. **Filling the Existing Gaps:** While there are still houses that have been left behind under the Swachh Bharat Mission (SBM) and gaps which need to be addressed, the Centre has said India will be declared ODF on October 2, 2019, the target it had set itself five years ago.
 - ▶▶ The government acknowledges there might be some gaps but those are miniscule in number and the ministry will fix them under its ODF plus mission.
4. **Solid Waste and Sludge management:** It will also focus on proper implementation of solid and liquid waste management (SLWM) — plastic waste, organic waste, grey water, and faecal sludge in rural areas.
5. **Updation of existing Toilets:** A report was released on the occasion and outlined the steps that the government intends to take under the framework.
 - ▶▶ They include the retrofitting of single pit toilets to twin pits or making provisions to empty pits every five years, repair of defunct ones, and construction of soak pits for septic tanks wherever not already present.
6. **Funding Strategy:** While government funding is the primary source of financing in the sanitation sector, the strategy mentioned in the framework also suggests alternative self-financing by gradual leveraging of community resources in the form of tariffs for ODF plus activities.
 - ▶▶ It will follow the same 60:40 financing model as being followed till now in Swachh Bharat. It will be finalised after the cabinet's approval.
7. **Focus on Menstrual Hygiene Management:** The framework also talks about state-specific strategies on menstrual hygiene management, including menstrual waste management, which may be supported under the ODF plus strategy.
8. **Coercive Action:** Any coercive action taken by anybody, including government or elected officials, or private individuals with respect to sanitation behaviour of any kind is 'totally unacceptable', the advisory said. This statement was issued in the wake of the murder of two children in Madhya Pradesh's Shivpuri district over Open Defecation.

What is ODF PLUS Status:

- ▶▶ The Swachh Bharat Abhiyan's guidelines, prepared by the Ministry of Drinking Water and Sanitation (MDWS) defines ODF plus as an area where along with regular availability and usage of toilets, management of solid and liquid waste, cleanliness of water resources, maintenance of public and household toilets and awareness on personal hygiene are at their highest.
- ▶▶ The Ministry, on several occasions has said that ODF plus is not just a label, but a sustained campaign to achieve all-round cleanliness in an area.



3. INTERNATIONAL RELATIONS AND ORGANISATIONS

1. China's One Country Two Systems Policy

Why in News?

- ▶▶ Protests in Hong Kong are now in its 13th consecutive week which have brought a decades-old policy of the People's Republic of China back into focus – **One Country Two Systems**.
- ▶▶ The protesters, who started occupying the city's streets in April after the local government proposed a controversial extradition law, say **Beijing is trying to violate this policy by infringing on Hong Kong's autonomy**.
- ▶▶ They want China to end its interference, while Beijing has likened the protesters to terrorists and have said that it won't tolerate any challenge to its sovereignty over Hong Kong.

One Country, Two Systems Policy:

- ▶▶ To put it simply, it means that the Hong Kong and Macau Special Administrative Regions, both former colonies, can have different economic and political systems from that of mainland China, while being part of the People's Republic of China.
- ▶▶ The One Country Two Systems policy was **originally proposed by Deng Xiaoping** shortly after he took the reins of the country in the **late 1970s**.
- ▶▶ Deng's **plan was to unify China and Taiwan under the One Country Two Systems policy**. He promised high autonomy to Taiwan. China's nationalist government, which was defeated in a civil war by the communists in 1949, had been exiled to Taiwan.
- ▶▶ Under Deng's plan, **the island could follow its capitalist economic system, run a separate administration and keep its own army but under Chinese sovereignty. Taiwan, however, rejected the Communist Party's offer**.
- ▶▶ The island has since been run as a separate entity from the mainland China, though Beijing never gave up its claim over Taiwan.

Re-Surface of The Policy:

- ▶▶ The idea of two systems in one country resurfaced when Beijing started talks with Britain and Portugal, who were running Hong Kong and Macau, respectively.
- ▶▶ The British had taken control of Hong Kong in 1842 after the First Opium War. In 1898, the British government and the Qing dynasty of China signed the Second Convention of Peking, which allowed the British to take control of the islands surrounding Hong Kong, known as New Territories, on lease for 99 years.

- ▶▶ London promised Peking that the islands would be returned to China after the expiry of the lease, in 1997. Macau, on the other side, had been ruled by the Portuguese from 1557. They started withdrawing troops in the mid-1970s.
- ▶▶ In the 1980s, Deng's China initiated talks with both Britain and Portugal for the transfer of the two territories. In talks, Beijing promised to respect the region's autonomy under the One Country Two Systems proposal. On December 19, 1984, China and the U.K. signed the Sino-British Joint Declaration in Beijing, which set the terms for the autonomy and the legal, economic and governmental systems for Hong Kong post 1997.
- ▶▶ Similarly, on March 26, 1987, China and Portugal signed the Joint Declaration on the Question of Macau in which China made similar promises for the region of Macau after it was handed over to Beijing.
- ▶▶ Hong Kong returned to Chinese control on July 1, 1997, and Macau's sovereignty was transferred on December 20, 1999. Both regions became Special Administrative Regions of China.
- ▶▶ The regions would have their own currencies, economic and legal systems, but defence and diplomacy would be decided by Beijing. Their mini-Constitutions would remain valid for 50 years — till 2047 for Hong Kong and 2049 for Macau. It is unclear what will happen after this term.

Genesis Behind Current Crisis:

- ▶▶ In recent years, there has been a growing outcry from Hong Kong's pro-democracy civil society against China's alleged attempts to erode the city's autonomy. This has created tensions between the city's youth and the local government, which is effectively chosen by Beijing. In 2016-17, six legislators critical of Beijing were debarred. In 2018, the Hong Kong National Party, a localist party that has been critical of Beijing, was outlawed.
- ▶▶ This year, Carrie Lam, the Chief Executive of Hong Kong, proposed the extradition Bill, which sought to extradite Hong Kongers to places with which the city doesn't have extradition agreements.
- ▶▶ Critics said it would allow the city government to extradite Beijing critics to mainland China where the judicial system is subservient to the ruling Communist Party. This triggered the protests, and they went on despite Ms. Lam's decision to suspend the Bill.
- ▶▶ The protesters, who often clashed with the police, now want the Bill to be formally withdrawn, Ms. Lam to resign, the arrested protesters to be released and the city's electoral system to be reformed.

2. What is an Interpol Red Notice, What Does It Do?

Why in News?

- ▶ Home Minister of India has conveyed to Interpol Secretary-General Jurgen Stock that India would like the international police agency to expedite its process of publishing Red Notices (RNs). As many as 18 requests for RNs from India are pending with Interpol, including against fugitive jeweller Mehul Choksi and Nirav Modi, a key accused in the Rs 13,500 crore Punjab National Bank scam.

About Red Notices:

- ▶ Criminals or suspects often flee to other countries to evade facing justice. An RN alerts police forces across the world about fugitives who are wanted internationally.
- ▶ Interpol describes an RN as “a request to law enforcement worldwide to locate and provisionally arrest a person pending extradition, surrender, or similar legal action”.
- ▶ RNs contain information that helps identify wanted persons, such as their names, dates of birth, nationality, and physical attributes such as the colour of their hair and eyes, as well as pictures and biometric data such as fingerprints, if they are available. RNs also mention the crime(s) they are wanted for.
- ▶ An RN is published by Interpol at the request of a member country. The fugitives may be wanted for prosecution or to serve a sentence. **The country issuing the request need not be the home country of the fugitive**; Interpol acts on the request of a country where the alleged crime has been committed.
- ▶ The Interpol itself does not want individuals; they are wanted by a country or an international tribunal.
- ▶ Also, an RN is an international wanted persons’ notice; it is not an international arrest warrant. Which means that the Interpol cannot compel the law enforcement authorities in any country to arrest the subject of an RN. It is up to individual member countries to decide what legal value to give to an RN, and the authority of their national law enforcement officers to make arrests.
- ▶ RNs are issued to simultaneously alert police in all member countries about internationally wanted fugitives. An RN can help bring a fugitive to justice, sometimes many years after the crime was committed.
- ▶ However, because an RN is not an arrest warrant, action against a fugitive frequently rests on the diplomatic clout that the country making the request has with the country where the fugitive is located. Nations with a big international profile, and economic or political heft, are often more successful than the rest.

Other Types of Notices by The Interpol:

- ▶▶ **Blue Notice:** To collect additional information about a person's identity, location or activities in relation to a crime.
- ▶▶ **Green Notice:** To provide warnings and intelligence about persons who have committed criminal offences and are likely to repeat these crimes in other countries.
- ▶▶ **Yellow Notice:** To help locate missing persons, often minors, or to help identify persons who are unable to identify themselves.
- ▶▶ **Black Notice:** To seek information on unidentified bodies.
- ▶▶ **Orange Notice:** To warn of an event, a person, an object or a process representing a serious and imminent threat to public safety.
- ▶▶ **Purple Notice:** To seek or provide information on modus operandi, objects, devices and concealment methods used by criminals.
- ▶▶ **The INTERPOL-United Nations Security Council Special Notice:** Issued for individuals and entities that are subject to sanctions imposed by the United Nations Security Council (UNSC).

3. India Takes Over COP Presidency from China

Why in News?

- ▶▶ Union Minister for Environment, Forest & Climate Change (MoEF&CC), and Executive Secretary, UN Convention to Combat Desertification (UNCCD), jointly inaugurated the 14th Conference of Parties (COP14) to UNCCD.

Conference of the Parties (COP):

- ▶▶ The COP is the supreme decision-making body of the UNFCCC (United Nations Framework Convention on Climate Change).
- ▶▶ All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention. A key task for the COP is to review the national communications and emission inventories submitted by Parties.
- ▶▶ Based on this information, the COP assesses the effects of the measures taken by Parties and the progress made in achieving the ultimate objective of the Convention.

India and COP 14:

- ▶▶ The Indian union Environment Minister who is also the elected COP President for next two years, expressed India's resounding commitment to finding a long-term solution for minimizing the impact of desertification and land degradation.

- ▶▶ India being the global host for COP 14 will take over the COP Presidency from China for the next two years till 2021. Through hosting COP 14, India will highlight its leadership in navigating the land management agenda at global level. It will also provide a stage to mainstream sustainable land management in country's national development policies.
- ▶▶ The objective of the COP 14, is to discuss on various issues of land such as sustainable land management, reversing land degradation, mitigating drought, halting desertification, addressing sand and dust storms, linkages with gender, tenure, etc.

UNCCD:

- ▶▶ United Nations Convention to Combat Desertification (UNCCD) was adopted in Paris on June 1994 and ratified by 196 countries & European Union.
- ▶▶ This convention can be called as "Mother convention" of the other two Rio Conventions that emerged as a major outcome of the 1992 Rio Earth Summit viz. United Nations Framework Convention on Climate Change (UNFCCC) and Convention on Biological Diversity (CBD).

4. Joint Statement on Cooperation between India and Russia

Why in News?

- ▶▶ Joint statement on cooperation for 2019-24 with Russia, which was issued in Vladivostok, Russia after Prime Minister Shri. Narendra Modi's annual bilateral summit with Russian President Mr. Vladimir Putin.

Natural Gas Sector:

- ▶▶ Both sides recognize the significance of Liquefied Natural Gas (LNG) supplied from Russia to India and agree to strengthen LNG imports to India to promote India's bid to transform itself into a gas-based economy.
- ▶▶ Russia will encourage its public and private sector companies to participate in gas projects in India, particularly in the development of gas pipeline networks and city gas distribution infrastructure in India.
- ▶▶ India's private and public companies will explore the possibility of collaborating in LNG projects, including in the Arctic. In regards to cooperation in the Arctic, Indian companies will examine the possibility of development of closer cooperation with Russian companies, including the LNG Arctic projects of JSC NOVATEK.
- ▶▶ Both Sides welcome the interest of JSC NOVATEK to enhance LNG supplies to India and joint development of gas market in India including but not limited to LNG infrastructure projects in collaboration with Indian companies.

Training, Technology, Third Country Cooperation:

- ▶▶ Both Sides will strengthen and diversify existing training exchange program and create new ways of enhancing knowledge exchange, joint research in energy sector, including those in emerging technologies.
- ▶▶ Both Sides agree to explore possibility of undertaking joint projects in third countries in the energy sector.

5. PM Unveils 'Act Far East' Policy

Why in News?

- ▶▶ In the presence of Russian President Vladimir Putin, Prime Minister Narendra Modi unveiled the 'Act Far East' policy to boost India's engagement with the Russian region, at the plenary session of the Fifth Eastern Economic Forum (EEF).

Background:

- ▶▶ PM Narendra Modi was in Russia as the chief guest of the 5th Eastern Economic Forum.
- ▶▶ It is an international forum held each year in Vladivostok, Russia, for the purpose of encouraging foreign investment in the Russian Far East.
- ▶▶ Modi is the first Indian prime minister to visit to the Russian Far East Region.

Highlights:

- ▶▶ India concluded around 50 agreements worth \$5 billion at the EEF-2019.
- ▶▶ PM announced a \$1 billion line of credit for the development of the resource-rich region.
- ▶▶ Modi appreciated Mr. Putin's vision for the welfare for Russia's Far East, saying the President had opened up investment opportunities for India in the region.
- ▶▶ India's connection to Russia's Far East go back a long way. Indian firms have invested over \$7 billion in taking stake in Russian oil and gas fields.
- ▶▶ India's largest state-owned companies, as well as private business conglomerates, have been investing in the Far East, which includes ONGC's investments in oil and gas projects, the development of coal and gold deposits by Tata Power and Sun Group, diamond polishing factories set up recently by KGK group and M Suresh, among others.
- ▶▶ India ventured into Russia when its flagship overseas firm ONGC Videsh in 2001 acquired a 20 per cent stake in Sakhalin-1 oil and gas field in Far East Russia.
- ▶▶ OVL later bought Imperial Energy, which has fields in Siberia, as also stakes in Vankor oilfield in eastern Siberia.
- ▶▶ IOC and its partners have picked up 29.9 per cent stake in a separate Taas-Yuryakh oilfield in East Siberia.

- ▶▶ Russian oil firm Rosneft in 2017 bought Essar Oil, which operates in Vadinar oil refinery in Gujarat and some 5,500 petrol pumps, for USD 12.9 billion.

Why India is so interested in Russian Far East?

- ▶▶ This is a region situated in the cold Siberian climate but more significantly, it shares borders with China, Mongolia, North Korea and Japan (maritime).
- ▶▶ On its own, it could be the eight largest – just behind India – in terms of area, and fourth least densely populated country. Both China and the US have been competing to have an upper hand in this region. Realising its geostrategic significance, India opened a consulate in Vladivostok in 1992. India was the first country to have a resident consulate in Vladivostok then. An understanding for Vladivostok-Chennai sea link was reached in 2018 when late Sushma Swaraj visited Russia as foreign minister.
- ▶▶ This Vladivostok-Chennai sea link is somewhat a counter to China's Maritime Silk Route (MSR) plan as part of One Belt One Road project. China's ambitious MSR plan is about establishing and hence directly controlling Asia-Africa sea route.
- ▶▶ Vladivostok-Chennai shipping link is likely to pass through or very close to the South China Sea, which China has turned into an international geostrategic hotspot by claiming exclusive control over the resource-rich maritime zone in the Pacific Ocean. Vietnam, the Philippines, Malaysia, Brunei and Taiwan have counter claims over the sea.
- ▶▶ There is an alternate possibility as well that Vladivostok-Chennai link would become an extension of existing India-Japan Pacific to Indian Ocean Corridor, which China considers as a challenge to its maritime OBOR plan in the region.
- ▶▶ Russian Far East is a resource rich region in a hostile climate. It is rich in oil, natural gas, timber, gold and diamond among other resources. India requires all of them.
- ▶▶ A busy Vladivostok-Chennai link means India strengthening its checks and balances equation with China.

6. Regional Comprehensive Economic Partnership (RCEP)

Context:

- ▶▶ India will host a two-day meeting of representatives from the Regional Comprehensive Economic Partnership (RCEP) countries this month to discuss ideas to strengthen the proposed pact between the 16 partner countries.

Background:

- ▶▶ Talks are ongoing to negotiate the China-initiated Regional Comprehensive Economic Partnership (RCEP).

- ▶▶ RCEP grouping resolved to conclude negotiations for a free trade agreement by the year end while recognizing that growing protectionism may impact negotiating positions.

What is RECP:

- ▶▶ The proposed **Regional Comprehensive Economic Partnership** (RCEP) is gigantic in size and scope. It aims to create a free trade zone of 10 Asean nations and Australia, China, India, Japan, South Korea and New Zealand.
- ▶▶ This means a zero-customs duty zone in a geography that contributes 34% of global gross **Domestic Product** (GDP) and 40% of world trade.
- ▶▶ The region is also home to almost half of the world's population
- ▶▶ **RCEP**— Regional Comprehensive Economic Partnership (RCEP) is an ASEAN-centred proposal for a regional free trade area. 10 ASEAN states: (Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, Vietnam) **CLIMBB-PSTV** +Six states with which ASEAN has existing FTAs (Australia, China, India, Japan, South Korea a and New Zealand) **JACSIN**.

Issue:

- ▶▶ The RCEP is a proposed trade pact between the 10 countries of the Association of Southeast Asian Nations and their six FTA partners, including Australia, China, India, Japan, Korea, and New Zealand.
- ▶▶ It accounts for 25% of global gross domestic product, 30% of global trade, 26% of foreign direct investment flows, and 45% of the world's population.

Concern:

- ▶▶ India has been seeking a more balanced outcome of the RCEP deal with a strong agreement on services trade, including a deal on easier movement of skilled manpower.
- ▶▶ However, most members are reluctant to accept India's proposal. With India's trade deficit with China and RCEP in 2018-19 standing at \$53.6 billion and \$105 billion, respectively, it is apprehensive that further liberalisation in tariffs to China could be detrimental to its domestic industries.

Government Intervention:

- ▶▶ **National Logistics Policy** and a multi-modal transportation bill will be soon taken to the Cabinet for clearance to reduce logistics cost for domestic industry.
- ▶▶ Look East Policy
 - ❖ India's Act East Policy focusses on the extended neighbourhood in the Asia-Pacific region.

- ❖ The policy which was originally conceived as an economic initiative, has gained political, strategic and cultural dimensions including establishment of institutional mechanisms for dialogue and cooperation.

What is Indian demand in RECP.

- ▶▶ Under services, India wants greater market access for its professionals in the proposed agreement.
- ▶▶ However, lower level of ambitions in services and investments, a key area of interest for India, does not augur well for the agreement that seeks to be comprehensive in nature.

Two Broad Interest groups in RCEP

1. **Export- Driven Trading Economy:** Many ASEAN countries argue that even minor processing should qualify a product for FTA benefits.
2. **Manufacturing Economy:** China or India argues that processing should be substantial else non-FTA country products will enter the domestic market.

7. India-China Face-off at Pangong Tso Lake

Why in News?

- ▶▶ According to a PTI report Indian and Chinese soldiers had a heated exchange in Ladakh near the Pangong Tso lake and the issue has now been resolved. The report said the exchange happened after Chinese Army personnel objected to patrolling by Indian soldiers. Differing perceptions about the Line of Actual Control (LAC) was responsible for the incident.
- ▶▶ The incident recalls a similar incident almost exactly two years ago, in the same area in Eastern Ladakh. Differing perceptions of where exactly the LAC lies has often been the reason for such incidents.

About Pangong Tso:

- ▶▶ In the Ladakhi language, Pangong means extensive concavity, and Tso is lake in Tibetan.
- ▶▶ Pangong Tso is a long narrow, deep, endorheic (landlocked) lake situated at a height of more than 14,000 ft in the Ladakh Himalayas.
- ▶▶ The western end of Pangong Tso lies 54 km to the southeast of Leh. The 135 km-long lake sprawls over 604 sq km in the shape of a boomerang, and is 6 km wide at its broadest point. The brackish water lake freezes over in winter, and becomes ideal for ice skating and polo. The legendary 19th century Dogra general Zorawar Singh is said to have trained his soldiers and horses on the frozen Pangong lake before invading Tibet.

Strategic Location of Pangong Tso Lake:

- ▶▶ The LAC cuts through the lake, but India and China do not agree on its exact location. As things stand, a 45 km-long western portion of the lake is in Indian control, while the rest is under China's control. Most of the clashes between the two armies occur in the disputed portion of the lake.
- ▶▶ By itself, the lake does not have major tactical significance. But it lies in the path of the **Chushul approach**, one of the main approaches that China can use for an offensive into Indian-held territory. Indian assessments show that a major Chinese offensive, if it comes, will flow across both the north and south of the lake.
- ▶▶ During the 1962 war, this was where China launched its main offensive — the Indian Army fought heroically at Rezang La, the mountain pass on the southeastern approach to Chushul valley. Over the years, the Chinese have built motorable roads along their banks of the Pangong Tso. At the People's Liberation Army's Huangyangtan base at Minningzhen, southwest of Yinchuan, the capital of China's Ningxia Hui Autonomous Region, stands a massive to-scale model of this disputed area in Aksai Chin. It points to the importance accorded by the Chinese to the area.

The Dispute:

- ▶▶ The difference in perception over where the LAC lies on the northern bank of the lake, makes this contested terrain. In 1999, when the Army unit from the area was moved to Kargil for Operation Vijay, China took the opportunity to build 5 km of road inside Indian territory along the lake's bank. The August 2017 skirmish took place in this area.
- ▶▶ The 1999 road added to the extensive network of roads built by the Chinese in the area, which connect with each other and to the G219 Karakoram Highway. From one of these roads, Chinese positions physically overlook Indian positions on the northern tip of the Pangong lake. The mountains on the lake's northern bank jut forward in major spurs, which the Army calls "fingers". India claims that the LAC is coterminous with Finger 8.

Induction of High-Speed Boats by India:

- ▶▶ On the water, the Chinese had a major advantage until a few years ago, but India purchased better boats some seven years ago, leading to a quicker and more aggressive response. Although there are well-established drills for disengagement of patrol boats of both sides, the confrontations on the waters have led to tense situations in the past few years.
- ▶▶ The induction of high-speed boats has ostensibly provoked the Chinese, who have responded by increasing the number of transgressions in this area in recent years.

8. Delhi-Dhaka ties best ever now: Bangladesh Minister

Why in News?

- ▶▶ Bangladesh and India are currently enjoying “best ever” relations, Foreign Minister of Bangladesh **Dr. A.K. Abdul Momen** said during an interaction with the media in Dhaka.

Highlights:

- ▶▶ The observations form the backdrop to the October 3-6, 2019 visit of Prime Minister Sheikh Hasina that will include a summit-level meeting with Prime Minister Narendra Modi. Sheikh Hasina is also expected to participate in the India Economic Forum.
- ▶▶ Bangladesh has recently been in the spotlight after the final list of the National Register of Citizens (NRC) in Assam was published on 31st August 2019.
- ▶▶ The exercise excluded more than 1.9 million individuals.
- ▶▶ However, India’s External Affairs Minister S. Jaishankar had assured Bangladesh that the future of the NRC-excluded Bengali-speaking people in Assam is an internal issue of India.
- ▶▶ Subsequently, however, Home Minister Amit Shah had said the people excluded from the NRC will not find space in India.
- ▶▶ Bangladesh has steadfastly refused to be drawn into the debate.

India-Bangladesh:

- ▶▶ The relations between Bangladesh and India, the South Asian neighbours have been friendly, although sometimes there are border disputes.
- ▶▶ The historic land boundary agreement was signed on 6 June 2015 which opened a new era in the relations and further stopped all irritants in ties.
- ▶▶ They are common members of SAARC, BIMSTEC, IORA and the Commonwealth.
- ▶▶ The two countries share many cultural ties. In particular, Bangladesh and the East Indian state of West Bengal are Bengali-speaking.

4. ECONOMY

1. India To Get Swiss Bank Details of Indians

Why in News?

- ▶▶ From September 1, India will start receiving information on all financial accounts held by Indian residents in Switzerland, for the year 2018.
- ▶▶ In a tweet on August 31, the Income Tax Department said: “India will receive information of the calendar year 2018 in respect of all financial accounts held by Indian residents in Switzerland. This will be a significant step in the Government’s fight against black money as the era of Swiss bank secrecy will finally be over.”

Highlights:

- ▶▶ The Income Tax department’s announcement follows a meeting between Switzerland’s Nicolas Mario Luscher, Deputy Head of Tax Division, State Sectt for International Finance, with Revenue Secretary Ajay Bhushan Pandey and senior officials of the Central Board of Direct Taxes (CBDT), on August 29-30.
- ▶▶ However, this is not a new measure. In 2016, India and Switzerland had signed an information-sharing deal on bank accounts, which was to come in effect from September 2019. In November 2016, the Embassy of India to Switzerland in a statement had said: “Switzerland and India signed a joint declaration on the introduction of the automatic exchange of information (AEOI) in tax matters on a reciprocal basis. Both countries intend to start collecting data in accordance with the global AEOI standard in 2018 and to exchange it from 2019 onwards.”
- ▶▶ This **automatic exchange of information (AEOI)** is to be carried out under the **Common Reporting Standard (CRS)**, the global reporting standard for such exchange of information, which takes care of aspects such as confidentiality rules and data safeguards. **The CRS has been developed by the Organisation for Economic Cooperation and Development (OECD).**
- ▶▶ Under the agreement, India will not receive information on bank accounts prior to 2018.
- ▶▶ According to the Indian Embassy statement, under the agreement, “both jurisdictions will inform each other of any relevant developments in respect to the implementation of the OECD Common Reporting Standard in their respective domestic laws.
- ▶▶ Each jurisdiction confirms that it has informed the other jurisdiction about the modalities made available to persons making a voluntary disclosure of their financial assets for a smooth transition to the system of automatic exchange of information.”

- ▶▶ The step is likely to shed more light on the wealth Indians have stashed away in Swiss bank accounts, for so long governed by strict local rules of secrecy.
- ▶▶ In 2018, data from Zurich-based Swiss National Bank (SNB) had shown that after declining for three years, money parked by Indians in Swiss Banks rose 50 per cent to CHF (Swiss Franc) 1.02 billion (Rs 7,000 crore) in 2017 over the previous year.

2. External Benchmark-Based Lending

Why in News?

- ▶▶ The RBI has made it mandatory for all banks to link floating rate loans — to retail customers and loans to micro, small and medium enterprises (MSME) — to an external benchmark. Some banks have already started to link home and auto loan rates to the repo rate, which is an external benchmark.
- ▶▶ Banks can choose from one of the four external benchmarks — repo rate, three-month treasury bill yield, six-month treasury bill yield or any other benchmark interest rate.
- ▶▶ The interest rate under external benchmark shall be reset at least once in three months.

Why Such Move?

- ▶▶ At present, interest rates on loans are linked to a bank's marginal cost of fund-based interest rate (MCLR).
- ▶▶ It has been observed that due to various reasons, the transmission of policy rate changes to the lending rate of banks under the current MCLR framework has not been satisfactory.
- ▶▶ The RBI, therefore, has issued a circular making it mandatory for banks to link all new floating rate personal or retail loans and floating rate loans to MSMEs to an external benchmark effective October 1, 2019.
- ▶▶ The move is aimed at faster transmission of monetary policy rates.

Repo wasn't Useful:

- ▶▶ Even before RBI had made it mandatory, several banks had launched repo-linked lending rate products.
- ▶▶ This was done in an effort to ensure faster transmission of policy rate cuts to borrowers.
- ▶▶ The repo (or repurchase) rate is the rate at which the Reserve Bank of India (RBI) lends money to other banks.
- ▶▶ Hence, cuts in the repo rate are meant to lead to cuts in home loan and other lending rates as banks get to borrow money cheaply from the RBI.
- ▶▶ By pegging the rate to an external benchmark RBI is hoping for a faster transmission of rate cuts than has happened so far under the MCLR system.

MCLR:

- ▶▶ MCLR (Marginal Cost of funds-based Lending Rate) replaced the earlier base rate system to determine the lending rates for commercial banks.
- ▶▶ RBI implemented MCLR on 1 April 2016 to determine rates of interests for loans.
- ▶▶ It is the minimum interest rate that a bank can lend at.
- ▶▶ MCLR is a tenor-linked internal benchmark, which means the rate is determined internally by the bank depending on the period left for the repayment of a loan.
- ▶▶ MCLR is closely linked to the actual deposit rates and is calculated based on four components: the marginal cost of funds, negative carry on account of cash reserve ratio, operating costs and tenor premium.

3. Ujjwala Yojana Achieves Target

Why in News?

- ▶▶ The PM addressed a state-level Mahila Saksham Melava or Empowered Women's Meet of Self-Help Groups, organized by Maharashtra State Rural Livelihood Mission (UMED), in Aurangabad.
- ▶▶ Marking the ahead-of-date achievement of 8 crore LPG connections under Pradhan Mantri Ujjwala Yojana, the PM distributed LPG connections to five beneficiaries.
- ▶▶ The PM said that Jal Jeevan Mission has been launched in order to free women from the trouble of having to toil hard to fetch water.

Pradhan Mantri Ujjwala Yojana:

- ▶▶ The PMUY is a scheme to provide LPG (liquid petroleum gas) to households below the poverty line. This is to have universal coverage of cooking gas in the country. The chief aim of this scheme to protect the health of the women and children in homes where unclean cooking fuels are used.
- ▶▶ About 10 crore households in the country use firewood, dung cakes, coal, etc. as their cooking fuel. The smoke emanating from such stoves are alarming and they cause severe health problems for the people living in such houses, especially the women who use them to cook food. As per WHO, about 5 lakh fatalities in India occur because of unclean cooking fuel. They cause severe respiratory diseases and problems as well.
- ▶▶ Additionally, there is also the hassle of collecting firewood from mostly unsafe places.
- ▶▶ To avoid these problems, the government came up with this scheme.
- ▶▶ It was inaugurated in Ballia, Uttar Pradesh by the Prime Minister Narendra Modi on 1st May, 2016.
- ▶▶ This will go a long way in making women more empowered.

PMUY Features:

- ▶▶ Under this scheme, 5 crore connections are to be provided to the people needing them.
- ▶▶ BPL families will be offered a support of Rs.1600 per connection. This is for the cylinder, booklet, pressure regulator, safety hose, etc. and will be borne by the government itself.
- ▶▶ Apart from these, the scheme also provides interest-free loans to buy stove and refill by oil marketing companies.
- ▶▶ The connections would be given in the name of women of the households.
- ▶▶ An initial outlay of Rs.8000 crore was sanctioned for the implementation of the scheme.
- ▶▶ The authorities would identify BPL families based on the Socio-Economic Caste Census data.
- ▶▶ The scheme is also expected to create employment to the tune of about a lakh. It will also boost the 'Make in India' programme for manufacturers of gas cylinders, stoves, gas hose and regulators. Only domestic manufacturers are engaged in this.
- ▶▶ It is also a business opportunity to the tune of a minimum of Rs.10000 crore.

Jal Jeevan Mission:

- ▶▶ Major objective of Jal Jeevan Mission is to provide piped water supply (Har Ghar Jal) to all rural and urban households by 2024.
- ▶▶ It also aims to create local infrastructure for rainwater harvesting, groundwater recharge and management of household waste water for reuse in agriculture.
- ▶▶ According to the data published in various reports, about half of the country's households don't have access to piped water supply.
- ▶▶ It is an urgent requirement of water conservation in the country because of the decreasing amount of groundwater level. Therefore, Jal Jeevan Mission will focus on integrated demand and supply management of water at the local level.

Benefits of Jal Jeevan Mission:

- ▶▶ Household pipeline water supply
- ▶▶ Clean and drinkable water
- ▶▶ Recharge of ground water level
- ▶▶ Better local infrastructure
- ▶▶ Less water-borne diseases
- ▶▶ Less water wastage

4. One Nation One Ration Card

Why in News:

- ▶▶ The government is showcasing the rollout of the 'One Nation One Ration Card' scheme as one of the biggest achievements of its first 100 days in power. The launch of the nationwide food security net is scheduled for June 2020.

About the Current Scheme:

- ▶▶ Under the National Food Security Act (NFSA), each beneficiary is eligible for five kg of subsidised grains per month at the rate of ₹3/kg for rice, ₹2/kg for wheat and ₹1/kg of coarse cereals.

Issues with the Current Scheme:

- ▶▶ It has been a location-linked benefit, leaving crores of migrant workers and families out of the food safety net. Each household's ration card is linked to a specific fair price shop and can only be used to buy rations in that particular shop.

Proposed Scheme:

- ▶▶ The proposed scheme envisages a scenario where in a ration card holder can buy subsidised grain at any fair price shop in the country.

Benefits of the Proposed Scheme:

- ▶▶ According to Census 2011, there are more than 45 crore internal migrants in India, of whom more than half have not completed primary education, while 80% have not completed secondary education. Lower levels of education are linked to lower income, which would make a large percentage of these migrants eligible for NFSA benefits.
- ▶▶ Registering for ration cards at their new location is an arduous process, especially if some members of the household still remain in their original home.
- ▶▶ Apart from this, there are short-term migrants, often working in cities, but not moving there permanently. Women who change locations after marriage also find it difficult to start accessing ration benefits using a new household's card.
- ▶▶ To curb corruption and improve access and service quality by removing monopolies.

5. Kisan Man Dhan Yojana

Why in News?

- ▶▶ Prime Minister Narendra Modi launched the Kisan Maan Dhan Yojana in September 2019.
- ▶▶ Prime Minister Narendra Modi also inaugurated 400 Ekalvya Model Residential Schools to provide quality upper primary, secondary, and senior secondary level education to ST Students in Tribal dominated areas.

Scheme Highlights:

- ▶▶ The Scheme shall secure the lives of 5 Crore Small and Marginal Farmers by providing a minimum pension of Rs 3000 per month, to those who attain 60 years of age.
- ▶▶ All the small and marginal farmers who are currently between the ages of 18 to 40 years can apply for the scheme. Farmer's monthly contribution can be made from the instalments of PM-KISAN or through CSCs.

Ekalavya Model Residential Schools:

- ▶▶ Ekalavya Model Residential School (EMRS) is a Government of India scheme for model residential school for Indian tribals (ST, Scheduled Tribes) across India.
- ▶▶ It is one the flagship intervention of the Ministry of Tribal Affairs, Government of India and was introduced in the year 1997-98 to ensure tribal students get access to quality education in the remote tribal areas.
- ▶▶ EMRSs are set up in States/UTs with grants under Article 275(1) of the Constitution of India.

6. India's second Multi-Modal Terminal

Why in News?

- ▶▶ The Prime Minister dedicated to the nation India's second riverine Multi-Modal terminal built at Sahibganj in Jharkhand
- ▶▶ This is the second of the three Multi-Modal Terminals being constructed on river Ganga under Jal Marg Vikas Project (JMVP).

Jal Marg Vikas Project (JMVP):

- ▶▶ Jal Marg Vikas Project (JMVP) for capacity augmentation of navigation on National Waterway-1 (NW-1) is being implemented with the technical assistance and investment support of the World Bank.
- ▶▶ One of the major problems for commercially viable and safe navigation on NW-1 is low depth upstream of Farakka due to low discharges from tributaries and difficult hydro morphological characteristics of river Ganga.
- ▶▶ A pilot study on the Allahabad-Ghazipur stretch was commissioned by Inland Waterways Authority of India (IWAI) to find solutions to this problem.
- ▶▶ Based on the findings of this study, a proposal for development of NW-1 was taken up for seeking technical assistance and investment support from the World Bank
- ▶▶ Finance Minister announced JMVP in Budget Speech in July 2014, to enable commercial navigation of at least 1500 tonnes vessels in Ganga.
- ▶▶ States that come under this project are: Uttar Pradesh, Bihar, Jharkhand, West Bengal

Significance of the Project:

- ▶▶ The alternative mode of transport will be Environment-Friendly and Cost-Effective. The project will contribute to bringing down the logistics cost in the Country. Mammoth Infrastructure development like multi-modal and inter-modal terminals, roll on – Roll off (Ro-Ro) facilities, ferry services, navigation aids. Socio-economic impetus; huge Employment Generation.

7. The National Agricultural Cooperative Marketing Federation of India (NAFED)

Context:

- ▶▶ NAFED has been tasked with purchasing all the apples that growers bring to sell at mandis in the Kashmir Valley.

Background:

- ▶▶ The **National Agricultural Cooperative Marketing Federation of India (NAFED)** has not bought a single kilogram of apples for the last three decades or more.
- ▶▶ This trade was always in private hands and the government didn't think it necessary to intervene.

Concern:

- ▶▶ A bumper crop, for which there would hardly be any private buyers with all the current movement restrictions, makes it all the more challenging.
- ▶▶ There is no MSP for apple.
- ▶▶ The state government will fix the procurement prices for different grades (A, B and C) and varieties. It is expected that we will pay 5 per cent more than the market price prevailing last year. The total cost of procurement operations is tentatively assessed at Rs 5,000 crore. Apple harvesting is now on mainly in HP, where an estimated 50-60 per cent of the fruit in the main belt of Shimla, Narkanda, Sainj and Rohru are still on the trees.
- ▶▶ Currently, Royal Delicious apple is fetching an average modal price of Rs 3,300 per quintal in Shimla, as against Rs 7,800-7,900 at this time last year. That has mainly to do with a bigger crop, likely in Kashmir as well.

Why Such Move:

Kashmir unrest

- ▶▶ Apple cultivation is the mainstay of Kashmir's economy with revenue of around Rs1,200 crore a year, and has been hit due to the clampdown post abrogation of the state's special status guaranteed under Article 370 of the Constitution.

- ▶▶ The move is aimed at helping farmers, and comes in the backdrop of New **Delhi imposing long-pending retaliatory tariffs on 29 US products.**
- ▶▶ Key items imported by India from the US include almond and fresh apples worth \$645 million and \$165 million, respectively.

Stats:

- ▶▶ Jammu & Kashmir accounts for about 18 lakh tonnes (lt) out of India's total annual apple production of 23-24 lt, which also includes 4.5-5 lt from Himachal Pradesh and 50,000-60,000 tonnes from Uttarakhand.
- ▶▶ This year, the country's output is projected to touch 26 lt due to good snowfall, with J&K alone harvesting 20 lt or so.

What is National Agriculture Cooperative Marketing Federation of India?

- ▶▶ The objectives of the NAFED shall be to organize, promote and develop marketing, processing and storage of agricultural, horticultural and forest produce, distribution of agricultural machinery, implements and other inputs, undertake inter-state, import and export trade, wholesale or retail as the case may be and to act and assist for technical advice in agricultural, production for the promotion and the working of its members, partners, associates and cooperative marketing, processing and supply societies in India.
- ▶▶ NAFED is the central agency assigned to procure directly from farmers and is expected to play a pivotal role in helping double farmers' income by 2022.

Apple Economy:

- ▶▶ J&K apple production contributes 10 per cent to the total state income of \$20 billion.
- ▶▶ India is the fifth largest producer of apples in the world, even though its share in global apple production is just 3 per cent. More than two thirds of the National Apple Production come from the Valley of Kashmir.

▶▶ **Absence of Logistics and Infrastructure**

1. The complete concentration of production and area under apple cultivation is matched only by a complete absence of infrastructure; only 0.3 per cent of national storage capacity is in the state.
2. There are just 36 cold storages in J&K out of the 6,000 in the country. In addition to this, there is no logistics infrastructure.

About Apple:

- ▶▶ Around 20 Lakh tonnes of Apple is produced in India every year.

- ▶▶ The top apple producing states of India are Jammu & Kashmir, Himachal Pradesh, Uttarakhand & Arunachal Pradesh with their respective shares of 70%, 21.5%, 6.4% and 1.6%.
- ▶▶ Further, apple is also produced in Mizoram, Sikkim, Tamil Nadu and Nagaland also. Key apple varieties include: Michal, Mollies Delicious, Maayan, Anna, Chaubattia Anupam, Rich-e-Red, Gala, Firdous, Lal ambri , Kinnauri Apple etc.

8. Market Intervention Price Scheme

Why in News?

- ▶▶ Kashmir's famed apple is battling to get exported outside the State this year as militants are campaigning against the fruit's trade.
- ▶▶ The government is planning to procure almost 12 lakh metric tonnes of apple this season, under the MISF, with the help of the National Agriculture Cooperative Marketing Federation of India (NAFED).

Market Intervention Price Scheme:

- ▶▶ MIP is a price support mechanism implemented on the request of State Governments for procurement of perishable and horticultural commodities in the event of a fall in market prices.
- ▶▶ The Scheme is implemented when there is at least 10% increase in production or 10% decrease in the ruling rates over the previous normal year.
- ▶▶ MIP works in a similar fashion to Minimum Support Price based procurement mechanism for food grains, but is an adhoc mechanism.
- ▶▶ Its objective is to protect the growers of these horticultural/agricultural commodities from making distress sale in the event of bumper crop during the peak arrival period when prices fall to very low level.
- ▶▶ Thus, it provides remunerative prices to the farmers in case of glut in production and fall in prices.

Working:

- ▶▶ Proposal of MIP is approved on the specific request of State/UT Government, if the State/UT Government is ready to bear 50% loss (25% in case of North-Eastern States), if any, incurred on its implementation.
- ▶▶ Further, the extent of total amount of loss shared is restricted to 25% of the total procurement value which includes cost of the commodity procured plus permitted overhead expenses.

Implementation of MIS:

- ▶▶ The Department of Agriculture & Cooperation is implementing the scheme.
- ▶▶ Under MIP, funds are not allocated to the States.
- ▶▶ Instead, central share of losses as per the guidelines of MIP is released to the State Governments/UTs, for which MIP has been approved, based on specific proposals received from them.
- ▶▶ Under the Scheme, a pre-determined quantity at a fixed Market Intervention Price (MIP) is procured by NAFED as the Central agency and the agencies designated by the state government for a fixed period or till the prices are stabilized above the MIP whichever is earlier.
- ▶▶ The area of operation is restricted to the concerned state only.
- ▶▶ The MIS has been implemented in case of commodities like apples, kinnoo/malta, garlic, oranges, galgal, grapes, mushrooms, clove, black pepper, pineapple, ginger, red-chillies, coriander seed etc.

9. Govt Imposes Minimum Export Price on Onion

Why in News?

- ▶▶ The government has imposed a minimum onion export price of 850 US dollars per tonne **to curb its exports and help bring down Domestic Prices.**
- ▶▶ A notification to this effect was issued by the Directorate General of Foreign Trade. This is the first time that a MEP has been imposed on onions this year.
- ▶▶ During the financial year 2018-19, India had exported 21.82 lakh tonnes of onion.

What is Minimum Export Price?

- ▶▶ Minimum Export Price (MEP) is the **price below which an exporter is not allowed to export the commodity from India.**
- ▶▶ MEP is **imposed in view of the rising domestic retail/wholesale price or production disruptions** in the country.
- ▶▶ MEP is a kind of **quantitative restriction to trade.**
- ▶▶ Government fixes MEP for the selected commodities with a view **to arrest domestic price rise and augment domestic supply.**
- ▶▶ This is intended to be imposed for short durations and is removed when situations change.
- ▶▶ The removal of MEP helps farmers / exporters in realising better and remunerative prices and would also help in earning valuable foreign exchange for the country.

What Does Such Imposition Mean?

- ▶▶ Simply put, henceforth exports will not be allowed if the consignments are priced below \$ 850 per tonne. The steep MEP will, in a way, stop all outbound shipment of onions from India.

Reason Behind the Imposition:

- ▶▶ This move comes after the state-owned MMTC Ltd had floated a tender for import of onions from “Pakistan, Egypt, China, Afghanistan or any other origin”, triggering criticism from farmers in Maharashtra.
- ▶▶ The inclusion of Pakistan in the tender list had evoked extreme criticism from various quarters. The MMTC, however, issued a fresh corrigendum to its tender, excluding Pakistan as the country of origin, thereby making bids from the neighbouring country ineligible. Prices in mandis of **Maharashtra — the largest onion Growing State** which accounts for over 33 per cent of national produce — has been on the rise since April. Imposition of the MEP are steps taken by the Centre to prevent further rise in prices.

10. New Measures to Boost Exports and Housing Sector

Why in News?

- ▶▶ Finance Minister Nirmala Sitharaman has announced a fresh set of measures worth around 70,000 crore rupees to boost exports and housing sector.
- ▶▶ The government will provide a 10,000 crore rupees special window with an aim to help complete ongoing affordable and middle-income housing projects.

Background:

- ▶▶ As part of the third stimulus package for the economy, Finance Minister unveiled a set of stimulus measures to boost exports and the housing sector.
- ▶▶ New Booster dose for the economy comes at a time when the country had reported its weakest growth in more than six years at 5 per cent in the June quarter.
- ▶▶ The previous low in GDP growth was recorded at 4.3 percent in Jan-Mar quarter of 2012-13.
- ▶▶ The economic slowdown has particularly been harsh on the automobile sector with domestic passenger vehicle sales having skidded for the 10th consecutive month in August, registering a 31.57 percent decline.
- ▶▶ The International Monetary Fund (IMF) said that Indian economy was “much weaker” than expected. This was attributed to the corporate and environmental regulatory uncertainty and lingering weakness in some non-banking financial companies.

- ▶▶ The new package of measures for exports sector came in six different silos and covered steps that would address comprehensively tax and duties refunds for exporters; improve credit flow to the export sector and launch of a special free trade agreement (FTA) utilisation mission. India will also now host annual mega shopping festivals in 4 places.

Steps to Boost Exports:

- ▶▶ Government announced the introduction of a new attractive scheme for **Remission of Duties or Taxes on Export Product (RoDTEP)** to replace the existing Merchandise Exports from India Scheme (MEIS) from January 2020 and revised priority sector lending norms for export credit that will release an additional Rs 36,000 crore to Rs 68,000 crore as export credit under priority sector.
- ▶▶ It was made clear that RoDTEP would span all the sectors and the revenue foregone could be about Rs 50,000 crore.
- ▶▶ The duty remission will vary from sector-to-sector. With the introduction of RoDTEP, all the uncertainty over continuation of MEIS is over.

Steps to Boost Housing Sector:

- ▶▶ New measures to boost housing sector were brought in owing to the fact that nearly 3.5 lakh dwelling units (non NPA and non NCLT) in the country are plagued with last mile funding problem.
- ▶▶ Rs 20,000 crore fund (Rs 10,000 crore from Government and roughly same amount from outside investors) would be set up to provide last mile funding for affordable and middle-income housing. This fund will be used to support projects that are non-NPA and non-NCLT projects and the objective is to focus on construction of unfinished units.
- ▶▶ The fund would be set up as a Category-II AIF trust and would be professionally run with experts from housing and banking sector.
- ▶▶ It was made clear that the Government was “open” to bring in sovereign wealth funds as investors. Besides the Government, the other investors who are likely to contribute to the fund include LIC and other institutions and private capital from banks and DFIs. External Commercial Borrowing (ECB) guidelines will be relaxed to facilitate financing of home buyers who are eligible under the PMAY, in consultation with RBI.
- ▶▶ This will be in addition to the existing norms for ECB for affordable housing.
- ▶▶ Also, the Finance Minister came up with some good news for government servants, stating that interest rates on house building advance will be lowered and linked with the 10-year G-sec yields.

11. Nirvik Scheme

Why in News?

- ▶▶ To enhance the loan availability of exporters, and the MSME sector the Export Guarantee Corporation of India (ECGC) has launched a new scheme called 'Nirvik'.
- ▶▶ To revive the export sector, Commerce Ministry also launched the common digital platform for the issuance of certificates of origin

Nirvik Scheme:

- ▶▶ If there is any loss, then ECGC provided credit guarantee of up to 60% loss approximately.
- ▶▶ Now under new scheme Nirvik consumers and exporters will covered up to 90% and if there is any loss then in that case ECGC will refund 90% to the banks including principal and interest.
- ▶▶ Both pre and post shipment credit will also be covered under the new scheme.
- ▶▶ Banks will get up to 50 % within 30 days of complain lodge.
- ▶▶ Enhanced cover will ensure that Foreign and Rupee export credit interest rates will be below 4% and 8% respectively for exporters.
- ▶▶ The scheme envisages simplified procedure for settlement of claim and for provisional payment up to 50% within 30 days on production of proof of end-use of the advances in default by the Insured Bank.

Electronic Certificates of Origin (CoO):

- ▶▶ This platform will be a single access point for all exporters, for all Free Trade Agreements (FTAs)/ Preferential Trade Agreements (PTAs) and for all agencies concerned.
- ▶▶ As we know, for exports to countries with which India has free trade agreements (FTA), exporters have to show a certificate that the consignment originated in India.
- ▶▶ With the launch of this platform, these certificates can be obtained online and all the issuing authorities will be on the same portal.
- ▶▶ Certificate of Origin will be issued electronically which can be in paperless format if agreed to by the partner countries. Authorities of partner countries will be able to verify the authenticity of certificates from the website.

12. Government to Peg MGNREGA Wages to Inflation in Bid to Hike Incomes

Why in News?

- ▶▶ The Centre has planned to inject more money into the UPA's flagship Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme by linking wages under the Act to an updated inflation index, which will be revised annually to counter slump in rural demand and a slowdown in the rural economy.

What is MGNREGA?

- ▶▶ The National Rural Employment Guarantee Act 2005 (NREGA) is a social security scheme that attempts to provide employment and livelihood to rural labourers in the country.
- ▶▶ The scheme was designed to provide any adult who registers for rural employment a minimum job guarantees of 100 days each financial year.
- ▶▶ This includes non-skilled work, making it one-of-its-kind across the world. It was later renamed the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).
- ▶▶ The MGNREGA is an entitlement to work that every adult citizen holds. In case such employment is not provided within 15 days of registration, the applicant becomes eligible for an unemployment allowance.

Current Wages:

- ▶▶ The national average wage of an MGNREGA worker is ₹178.44 per day, less than half of the ₹375 per day minimum wage recommended by a Labour Ministry panel earlier this year. Now the govt plans to link the daily wages to the inflation rate (CPI-AL), so that the rural labourers can benefit in real time.

Benefits:

- ▶▶ This effort of government to hike the wages is a part of a stimulus package initiated in order to counter the ongoing economic slowdown.
- ▶▶ If transferring expenditure [via MGNREGA] is done, rural wages could increase and that could percolate down into more purchasing power in the hands of the consumer. This is in turn expected to boost the rural economy.

About Consumer Price Index (CPI):

- ▶▶ It measures price changes from the perspective of a retail buyer.
- ▶▶ It measures changes over time in the level of retail prices of selected goods and services on which consumers of a defined group spend their incomes.

Four types of CPI are as follows:

		Compiled by
1	CPI for Industrial Workers (IW).	Labour Bureau in the Ministry of Labour and Employment
2.	CPI for Agricultural Labourer (AL).	Labour Bureau in the Ministry of Labour and Employment
3.	CPI for Rural Labourer (RL).	Labour Bureau in the Ministry of Labour and Employment
4.	CPI (Rural/Urban/Combined).	Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation.

13.37th GST Council Meeting

Why in News?

- ▶▶ The 37th GST Council met on 20th September 2019 in Goa under the chairmanship of Union Finance Minister.

Key Recommendations:

- ▶▶ Relaxations in annual returns filing for MSMEs for the financial year 2017 – 18 and 2018 – 19.
- ▶▶ A committee of officers would be appointed for examining the simplification of forms for annual return and reconciliation statement.
- ▶▶ Extension of the last date for filing of appeals against orders of the Appellate Authority before the GST Appellate Tribunal as the Appellate Tribunals are yet not functional.
- ▶▶ The new return system would be introduced from April 2020 instead of the previously proposed October 2019.
- ▶▶ Suitable amendments would be made to the CGST Act, UTGST Act and corresponding SGST Acts in view of the creation of the union territories of Jammu & Kashmir and Ladakh. Integrated refund system with disbursement by a single authority to be introduced from 24th September 2019.
- ▶▶ The Council also took an in-principle decision to link Aadhaar with the registration of taxpayers under GST and also to examine the possibility of making the 12-digit unique identification number mandatory for claiming refunds.
- ▶▶ Changes were also made to the GST rates for various goods and services.

GST Council:

- ▶▶ The Goods and Services Tax Council is a constitutional body for making recommendations to the Union and State Governments on issues related to Goods and Service Tax.
- ▶▶ It is chaired by the Union Finance Minister.
- ▶▶ The other members are the Union State Minister of Revenue or Finance, and Ministers in-charge of Finance or Taxation of all the States.

14. Pradhan Mantri Matru Vandana Yojana

Why in News?

- ▶▶ Pradhan Mantri Matru Vandana Yojana (PMMVY), a flagship scheme of the Government for pregnant women and lactating mothers has achieved a significant milestone by crossing one crore beneficiaries.

PMMVY:

- ▶▶ PMMVY is a direct benefit transfer (DBT) scheme under which cash benefits are provided to pregnant women in their bank account directly to meet enhanced nutritional needs and partially compensate for wage loss.
- ▶▶ Implementation of the scheme started with effect from 01.01.2017.
- ▶▶ Under the 'Scheme', Pregnant Women and Lactating Mothers (PW&LM) receive a cash benefit of Rs. 5,000 in three instalments on fulfilling the respective conditionality.
- ▶▶ They include early registration of pregnancy, ante-natal check-up and registration of the birth of the child and completion of first cycle of vaccination for the first living child of the family.
- ▶▶ The eligible beneficiaries also receive cash incentive under Janani Suraksha Yojana (JSY). Thus, on an average, a woman gets Rs. 6,000.

Performance by states:

- ▶▶ Madhya Pradesh, Andhra Pradesh, Himachal Pradesh, Dadra & Nagar Haveli and Rajasthan are the top five States/UT in the country in implementation of PMMVY.
- ▶▶ Odisha and Telangana are yet to start implementation of the scheme.

15. A deep cut in the Corporate Taxes

Context:

- ▶▶ In order to revive the economy from the economic slowdown, the Finance Minister has announced a slew of major changes in corporate income tax rates. This has been made through an ordinance – the Taxation Laws (Amendment) Ordinance 2019 that amends **Income Tax Act of 1961** and the **Finance Act of 2019**.

Key provisions of the ordinance:

- ▶▶ The central government slashed corporate tax rates for domestic firms from 30% to 22% and for new manufacturing companies from 25% to 15% to boost economic growth.
- ▶▶ Effective corporate tax rate after surcharge and cess on these companies would be 25.17 percent. No Minimum Alternate Tax (MAT) applicable on such companies.
- ▶▶ Local companies incorporated after October 2019 and till March 2023, will pay tax at 15 percent. That effective tax for new companies shall be 17.01 percent, including cess and surcharge. Companies enjoying tax holidays would be able to avail concessional rates post the exemption period.
- ▶▶ MAT relief for those companies opting to continue paying surcharge and cess. MAT has been reduced to 15 percent from 18.5 percent for companies who continue to avail exemptions and incentives.
- ▶▶ Enhanced surcharge announced in Budget 2019 will not apply on capital gains arising on sale of any security, including derivatives by foreign portfolio investors (FPI).

Pros associated with the above move:

- ▶▶ Lower taxes will result in higher profit margins. This will bolster their books, and some of these companies should be able to pass on the higher margins in the form of lower product prices to consumers.
- ▶▶ Lower corporate income tax rates and the resultant increase in profitability of the company will definitely prompt companies to invest more, raising their capital expenditure (capex).
- ▶▶ Increase in the capacities of the company will eventually result in the increased employment opportunities for the youngsters.
- ▶▶ Given the substantially lower rates would imply that many corporates will break even much ahead than what would have been the case with the earlier rates.
- ▶▶ The ultimate goal of turning India into investors' darling, demonstrating the government's intent to walk the talk on economic management, restoring investors' confidence and boosting sentiments and demand will be definitely meet its success point.
- ▶▶ It is expected that it will give a great stimulus to 'Make in India', attract private investment from across the globe, improve the competitiveness of the private sector, create more jobs.
- ▶▶ The reduction in corporate tax, effectively, brings India's 'headline' corporate tax rate broadly at par with an average of 23% rate in Asian countries.

Impacts of the Rate Cut:

- ▶▶ The latest corporate income tax will result in the revenue foregone to the tune of Rs 1.45 lakh crore a year to the government.

- ▶▶ The government has set a fiscal deficit target of 3.3 percent of GDP for 2019-20. So the latest move has raised concerns of fiscal slippage, given that tax collections have been far below the budgeted estimates.

Corporate tax – A Global Scenario

- ▶▶ The new corporate income tax rates in India will be comparatively lower than USA (27 percent), Japan (30.62 percent), Brazil (34 percent), Germany (30 percent) and is similar to China (25 percent) and Korea (25 percent).
- ▶▶ Effective tax rate of 17 percent on newly incorporated companies in India with is almost equivalent to what corporates pay in Singapore (17 percent).

What is Revenue Foregone?

- ▶▶ Foregone earnings are the difference between earnings actually achieved and earnings that could have been achieved with the absence of specific fees, expenses or lost time.

16. Participatory Guarantee System (PGS)

Why in News?

- ▶▶ Chairperson of the Food Safety and Standards Authority of India (FSSAI) said on the sidelines of a function of Food and Agriculture Organisation (FAO) and the World Health Organisation's (WHO's) Coordinating Committee for Asia (CCASIA) in Panaji that she expects the **Union Agriculture Ministry's Participatory Guarantee Scheme (PGS)** to incentivise more farmers to grow organic food.

About Participatory Guarantee System (PGS):

- ▶▶ PGS is a process of certifying organic products, which ensures that their production takes place in accordance with laid-down quality standards. The certification is in the form of a documented logo or a statement.
- ▶▶ **pgsindia-ncof.gov.in** is web-based platform to simplify the process of certifying organic products in accordance with the standards laid down for organic products for export purpose. Thus it seeks to curb third party certification.
- ▶▶ **Implemented:** by the Department of Agriculture and Cooperation under the aegis of Union Ministry of Agriculture.

Guiding Principles of PGS:

- ▶▶ PGS India system is based on participatory approach, a shared vision, transparency and trust. In addition, it gives PGS movement a National recognition and institutional structure.

Participation:

- ▶▶ Participation is an essential and dynamic part of PGS. Participation embodies the principle of collective responsibility for ensuring the organic integrity of the PGS. This collective responsibility is reflected through:
 - ❖ Shared ownership of the PGS
 - ❖ Stakeholder engagement in the development and operation process
 - ❖ Understanding of how the system works and
 - ❖ Direct communication between producers and consumers and other stakeholders

Shared Vision:

- ▶▶ Collective responsibility for implementation and decision making is driven by common shared vision. All the key stakeholders (producers, facilitating agencies, NGOs, social organizations, State Governments and state agencies) support the guiding principles and goals, PGS is striving to achieve and this is achieved initially through their participation and support in the design and then by joining it.
- ▶▶ This may include commitment in writing through signing an application and pledge that includes the vision.

Transparency:

- ▶▶ Transparency is created by having all stakeholders, including producers and consumers, aware of exactly how the guarantee system works to include the standards, the organic guarantee process (norms) with clearly defined and documented systems and how decisions are made.

Trust:

- ▶▶ The integrity base upon which PGS-India programme is built, is rooted in the idea that producers can be trusted and that the organic guarantee system can be an expression and verification of this trust. The foundation of this trust is built from the idea that the key stakeholders collectively develop their shared vision and then collectively continue to shape and reinforce their vision through the PGS.
- ▶▶ The idea of 'trust' assumes that the individual producer has a commitment to protecting nature and consumers' health through organic production.

Horizontality:

- ▶▶ PGS India is intended to be non-hierarchical at group level. This will reflect in the overall democratic structure and through the collective responsibility of the PGS group with sharing and rotating responsibility, by engaging producers directly in the peer review of each other's farms; and by transparency in decision making process.

National Networking:

- ▶▶ PGS India while keeping the spirit of PGS intact aims to give the entire movement an institutional structure.
- ▶▶ This is achieved by networking the groups under common umbrella through various facilitating agencies, Regional Councils and Zonal Councils.
- ▶▶ National Centre of Organic Farming shall be the custodian of data, define policies and guidelines and undertake surveillance through field monitoring and product testing for residues. Regional councils and facilitating agencies facilitate the groups in capacity building, training, knowledge/ technology dissemination and data uploading on the PGS website.

Advantages:

Among the advantages of PGS over third-party certification, identified by the government document, are:

- ▶▶ Procedures are simple, documents are basic, and farmers understand the local language used.
- ▶▶ All members live close to each other and are known to each other. As practising organic farmers, themselves, they understand the processes well. Because peer appraisers live in the same village, they have better access to surveillance; peer appraisal instead of third-party inspections also reduces costs.
- ▶▶ Mutual recognition and support between regional PGS groups ensures better networking for processing and marketing.
- ▶▶ Unlike the grower group certification system, PGS offers every farmer individual certificates, and the farmer is free to market his own produce independent of the group.

Limitations:

- ▶▶ PGS certification is only for farmers or communities that can organise and perform as a group within a village or a cluster of contiguous villages, and is applicable only to farm activities such as crop production, processing, and livestock rearing, and off-farm processing “by PGS farmers of their direct products”.
- ▶▶ Individual farmers or group of farmers smaller than five members are not covered under PGS.
- ▶▶ They either have to opt for third party certification or join the existing PGS local group. PGS ensures traceability until the product is in the custody of the PGS group, which makes PGS ideal for local direct sales and direct trade between producers and consumers.

17. Addressing the Demand Drought in Our Economy

Background:

- ▶▶ A persistent slowdown has dragged economic growth in India down to 5% in the fiscal first quarter, weakest in more than six years.
- ▶▶ Recent weeks have seen the possible reasons for the slowdown, as well as the government's policy measures to ostensibly help revive the economy being put under the spotlight, the missing demand is yet to be addressed in a direct and concerted manner.
- ▶▶ As data from the National Statistical Office show, private consumption expenditure, which contributes more than half the gross domestic product and is the mainstay of demand, has decelerated so sharply that at 3.1%, the expansion is at an 18-quarter low.
- ▶▶ Automobile sales continued to plunge in August, posting their worst drop since the Society of Indian Automobile Manufacturers (SIAM) started collating wholesale vehicle sales data in 1997-98.
- ▶▶ The absence of demand pervades almost every key sector: from consumer durables to biscuits and housing.

What Has Caused This Demand Drought?

- ▶▶ Multiple factors have contributed to the demand drought.
- ▶▶ Lack of jobs, or even where jobs are available — like in the new or digitally enabled “gig” economy — a tenuousness about the incomes from such work, the abiding rural distress, widening inequality and, interestingly, in the opinion of some economists, even the Reserve Bank of India's successful targeting of inflation are all cited as contributors.
- ▶▶ For an economy such as India's, the central bank's remit of containing consumer price index-based inflation within a 2-6% band may be proving less than ideal, especially if monetary policy makers fix their sights on trying to peg inflation at or less than 4% — even it means retarding growth as a fallout.
- ▶▶ Low inflation extracts costs in the form of lower nominal growth (growth measured in current prices) that could crimp tax receipts and in turn lead to cuts in government spending.
- ▶▶ With wage/salary increases most often linked to inflation, slower price gains result in smaller annual increments that leave the earners more wary of spending on discretionary or non-essential purchases.
- ▶▶ The crisis of demand in the rural hinterland has snowballed to the point where sellers of consumer goods including Hindustan Unilever (HUL) and ITC have seen appreciable slowing in sales growth in recent quarters.

- ▶▶ Rural growth rates — which were almost double those in urban areas earlier — have eased to the point where they are now almost at par with those in urban areas, according to HUL’s first-quarter results statement.

What Can Be Done to Revive Demand?

- ▶▶ Consumer sentiment is a key ingredient affecting consumption and it is vital for policy makers to address weakness in consumer sentiment through a mix of measures in the economic realm, both monetary and fiscal, as well as ensuring a congenial socio-political climate that enhances the ‘feel-good’ factor.
- ▶▶ **On the monetary side**, ensuring lower borrowing costs as well as adequate availability of credit are crucial to helping create an enabling environment for consumers to consider taking out loans to fund their purchases. However, fiscal measures are in many ways far more crucial. **Targeted tax breaks or non-tax sops that incentivise consumption is one option.** The government’s latest decision to cut baseline corporate tax rates is certainly a good move, aimed at incentivising and spurring sluggish capital investment by businesses. However, companies may balk at adding capacity when demand for their manufactured goods is still weak and it is therefore imperative that the revival of demand stays front and centre of any new policy measures. As far as rural demand goes, the government must go beyond the Pradhan Mantri KISAN SAMman Nidhi, or PM-KISAN income supplementing scheme and tackle the crisis of low real farm incomes by radically recalibrating its approach to the agrarian economy. As an immediate and necessary measure, the Mahatma Gandhi National Rural Employment Guarantee Scheme needs to be reinvigorated by ensuring timely and adequate funding and the fixing of appropriate wage levels. As studies have shown, in its first five years, the scheme gave a big fillip to rural incomes and consumption in the hinterland.

What, if any, are the Risks?

- ▶▶ Any economic stimulus package that the government may come up with would necessarily assume a short-term loosening of the fiscal deficit goals, whether from enhanced spending or from reduced tax revenues as the corporate tax cut may engender.
- ▶▶ If the stimulus also entails a large expenditure component, there could also be second-order inflationary consequences. However, the risks of failing to revive demand, at a juncture when the economy is heading for a stall, are far greater in the long run.
- ▶▶ Once, the economy has been reflat and demand revives, revenue buoyancy is bound to return and prudent management can ensure a gradual return to normal service on long-run fiscal goals.

5. ENVIRONMENT

1. Compensatory Afforestation Fund

Why in News?

- ▶▶ The Union Environment Ministry has transferred ₹47,436 crore to 27 States for afforestation.

Highlights:

- ▶▶ The funds are long-pending dues, part of the Compensatory Afforestation Fund (CAF), that has been collected for nearly a decade as environmental compensation from industry.
- ▶▶ The centre expects that states will utilize the funds towards forestry activities to achieve the objectives of the Nationally-Determined Contributions (NDCs) of increasing forest & tree cover.

Compensatory Afforestation Fund:

- ▶▶ The CAF Act was passed in 2016 and the related rules were notified in 2018.
- ▶▶ The CAF Act was enacted to manage the funds collected for compensatory afforestation which till then was managed by ad hoc Compensatory Afforestation Fund Management and Planning Authority (CAMPA).
- ▶▶ As per the rules, 90% of the CAF money is to be given to the states while 10% is to be retained by the Centre. The funds can be used for treatment of catchment areas, assisted natural generation, forest management, wildlife protection and management, relocation of villages from protected areas, managing human-wildlife conflicts, training and awareness generation, supply of wood saving devices and allied activities.

Compensatory Afforestation:

- ▶▶ It means that every time forest land is diverted for non-forest purposes such as mining or industry, the user agency pays for planting forests over an equal area of non-forest land, or when such land is not available, twice the area of degraded forest land.

2. Impact of Climate Change on India's Banana Crop

Why in News?

- ▶▶ A new study has found that climate change has benefited bananas over the last several decades but predicted that the trend will reverse, with climate change eventually causing a Negative Impact.

Highlights of the Study:

- ▶▶ The study, led by researchers from the University of Exeter has been published in **Nature Climate Change**.

- ▶▶ The study includes both the recent and future impact of climate change on the world's leading banana producers and exporters.
- ▶▶ They found that 27 countries – accounting for 86 per cent of the world's dessert banana production – have on average seen increased crop yield since 1961 – by 1.37 tonnes/hectare every year – due to the changing climate resulting in more favourable growing conditions. In India, data from the National Horticulture Board show broadly consistent yields in six years leading up to 2016-17, when the provisional yield was 34 tonnes/hectare.
- ▶▶ The study says the gains in these 27 countries could be significantly reduced by 2050 – to 1.19-0.59 tonnes/hectare – or disappear completely, if climate change continues at its expected rate. The study predicts that 10 countries – including India and the fourth largest producer, Brazil – could see a significant decline in crop yields.

Concerns:

- ▶▶ Bananas has the impact on millions of people in both rural and urban areas across the globe. In Britain, for example, more than five billion bananas are purchased each year, and the United Kingdom accounts for seven per cent of the global export market.
- ▶▶ Such international trade can play a pivotal role to local and national economies in producing countries. For example, bananas and their derived products constitute the second largest agricultural export commodity of Ecuador and Costa Rica.

About Banana Crop:

- ▶▶ Bananas **Thrive in warmer climates, and India is the world's largest producer and Consumer** of the fruit crop. Bananas are recognised as the most important fruit crop, providing food, nutrition, and income for millions in both rural and urban areas across the globe.

Way Forward:

- ▶▶ Banana growers are very concerned about the impact of diseases like **Fusarium Wilt on bananas**, but the impacts of climate change have been largely ignored.
- ▶▶ In coming years, the study may stimulate vulnerable countries to prepare through investment in technologies like irrigation. An **open exchange of ideas** is going to be critical going forward.
- ▶▶ It is believed that **practical solutions already exist, but these are scattered** across banana producing countries. This knowledge exchange needs to start now to counteract predicted yield losses due to climate change.

3. Government to Develop A Master Plan for Tigers at High Altitude

Why in News?

- ▶▶ Union Environment Ministry released a report on Status of Tiger Habitats in high altitude Ecosystems.

Highlights:

- ▶▶ The study is led by the Global Tiger Forum (GTF), with range country governments of Bhutan, India and Nepal, along with WWF.
- ▶▶ It has been supported by the Integrated Tiger Habitat Conservation Programme (ITHPC) of the IUCN.
- ▶▶ This provides the action strategy for a high-altitude tiger master plan, with gainful portfolio for local communities.
- ▶▶ It ensures centrality of tiger conservation in development, through an effective coordination mechanism, involving stakeholders and line departments operating within the landscape.

Why Such Report?

- ▶▶ Various studies reveal that even ecology at high altitude is compatible for the tiger growth.
- ▶▶ The habitat of tiger of varied, encompassing several biomes and ecological conditions.
- ▶▶ However, most of the high-altitude habitats, within the range have not been surveyed for an appraisal of tiger presence, prey and habitat status.
- ▶▶ Tiger habitats in high altitude require protection through sustainable land use, as they are a high value ecosystem with several hydrological and ecological processes providing ecosystem services.
- ▶▶ Several high-altitude habitats in South Asia have the spatial presence of tiger, active in-situ efforts are called for ensuring their conservation.

Global Tiger Forum:

- ▶▶ The GTF was formed in 1993 on recommendations from an international symposium on Tiger Conservation at New Delhi, India. The GTF is the only intergovernmental international body established with members from willing countries to embark on a global campaign to protect the Tiger.
- ▶▶ Utilizing co-operative policies, common approaches, technical expertise, scientific modules and other appropriate programmes and controls the GTF is focused on saving the remaining 5 sub-species of Tigers distributed over 13 Tiger Range countries of the world.

4. COP14 of United Nations Convention to Combat Desertification (UNCCD)

Why in News?

- ▶▶ The 14th Conference of Parties (COP14) of the United Nations Convention to Combat Desertification (UNCCD) is being held in New Delhi, India between 2nd and 13th September 2019.

Highlights:

- ▶▶ Over 3,000 participants from all over the world are expected to participate in COP14.
- ▶▶ The Parties to the Convention will agree on the actions each will take over the next two years and beyond to take planet earth on to a sustainable development path.
- ▶▶ Ministers from 196 countries, scientists and representatives of national and local governments, non-governmental organizations, city leaders, the private sector, industry experts, women, youth, journalists, faith and community groups will talk at the conference.
- ▶▶ UNCCD is the sole legally binding international agreement that links environment and development to sustainable land management. It addresses specifically arid, semi-arid and dry sub-humid areas, known as drylands, home to some of the most vulnerable ecosystems and peoples. It was established in 1994 and entered into force in 1996. It is one of the three Rio Conventions along with United Nations Framework Convention on Climate Change (UNFCCC) and Convention on Biological Diversity (CBD). India became a signatory to UNCCD on 14th October 1994 and ratified it on 17th December 1996. The chief agendas for COP14 are reversing land degradation and its outcomes while accelerating positive achievements for people and for ecosystems with a view to delivering on the United Nations-mandated Sustainable Development Goals.

5. How Are Vehicles Tested for Pollution?

Why in News?

- ▶▶ After the Motor Vehicles (Amendment) Act, 2019 the fine for PUC violations has now gone up to Rs 10,000; it used to be Rs 1,000 for the first offence and Rs 2,000 for subsequent violations before the amendments came into force.
- ▶▶ Since September 1, when the Motor Vehicles (Amendment) Act, 2019 came into force, long queues of vehicles are commonly being seen at pollution control centres in Delhi. After undergoing a Pollution Under Control (PUC) test, a vehicle is certified for a certain period of time. According to the data available 217.7 tonnes of carbon monoxide is emitted every day by vehicles in Delhi. Vehicular pollution estimates include 84.1 tonnes of nitrogen oxides and 66.7 tonnes of hydrocarbons per day.

About PUC Certificate:

- ▶▶ The PUC certificate is a document that any person driving a motor vehicle can be asked to produce by a police officer in uniform authorised by the state government.
- ▶▶ A PUC certificate contains information such as the vehicle's license plate number, PUC test reading, date on which the PUC test was conducted and the expiry date.
- ▶▶ Authorised pollution checking centres issue certificates if a vehicle is found complying with the prescribed emission norms.

How is a Pollution Control Check Carried Out?

- ▶▶ The computerised model for pollution check was developed by the Society of Indian Automobile manufacturers. A gas analyser is connected to a computer, to which a camera and a printer are attached.
- ▶▶ The gas analyser records the emission value and sends it to the computer directly, while the camera captures the license plate of the vehicle. Subsequently, a certificate may be issued if the emission values are within the limits.

6. Desertification of Land Around the World

Why in News?

- ▶▶ According to a report tabled at the ongoing 14th Conference of Parties to the United Nations Convention to Combat Desertification (UNCCD) every year around 12 million hectares fall to desertification. The cost to combat these has been estimated at \$450 billion annually.
- ▶▶ At the end of talks on 13th September, the conference is expected to come out with a declaration on the decisions taken here to deal with desertification.

What is Desertification?

- ▶▶ **According to UNCCD:** Desertification is not the natural expansion of existing deserts but the degradation of land in arid, semi-arid, and dry sub-humid areas.
- ▶▶ It is a gradual process of soil productivity loss and the thinning out of the vegetative cover because of human activities and climatic variations such as prolonged droughts and floods.
- ▶▶ What is alarming is that though the land's topsoil, if mistreated, can be blown and washed away in a few seasons, it takes centuries to build up.
- ▶▶ Among human causal factors are overcultivation, overgrazing, deforestation, and poor irrigation practices. Such overexploitation is generally caused by economic and social pressure, ignorance, war, and drought. Combating desertification refers to activities that prevent or reduce land degradation, and restore partially or fully degraded land.

Concerns:

- ▶▶ A variety of factors, both natural and human-induced, are known to be affecting the productivity of land, and making them desert-like. Increasing populations and the resultant rise in demand for food and water, feed for cattle, and a wide variety of ecosystem services these offer, have prompted human beings to clear forests, use chemicals, cultivate multiple crops, and over-exploit groundwater. This has affected both the health and productivity of land. Natural processes such as rising global temperatures increase the frequency and intensity of droughts, and changing weather patterns have put further pressure on the land. Desertification has implications for food and water security, livelihoods, migration, conflicts and even international security.

Magnitude of The Problem:

- ▶▶ A recent report by the International Resources Panel, a scientific body hosted by the UN Environment Programme, said that **about 25 per cent of world's land area has been degraded**. Another report, by the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services, said that **nearly 40 per cent of world's population was being impacted negatively because of land degradation**.
- ▶▶ According to the Intergovernmental Panel on Climate Change (IPCC) the **rate of soil erosion in many areas of the world was up to 100 times faster than the rate of soil formation**. It also said the **annual area of drylands in drought had been increasing at more than 1 per cent every year in the last 50 years**, and that **nearly 500 million people lived in areas that have experienced desertification after the 1980s**.

UN Convention to Combat Desertification (UNCCD):

- ▶▶ The UNCCD is one of three Conventions that have come out of the historic 1992 Earth Summit in Rio de Janeiro. Established in 1994, the United Nations Convention to Combat Desertification (UNCCD) is the sole legally binding international agreement linking environment and development to sustainable land management. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found. As the dynamics of land, climate and biodiversity are intimately connected, the UNCCD collaborates closely with the other two Rio Conventions; the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC), to meet these complex challenges with an integrated approach and the best possible use of natural resources.

Need for Such a Convention:

- ▶▶ At the time the UNCCD was born in Rio, degradation of land was mostly viewed as a localised problem, one that was mainly affecting countries in Africa.
- ▶▶ In fact, it was on the demand of the African countries that CCD came into being. The Convention repeatedly makes a mention of the special needs of Africa in fighting desertification.
- ▶▶ Over the years, it has become increasingly clear that land degradation was impacting the global network of food and commodity supply chains and was getting impacted in return.
- ▶▶ The crops being grown and the quantities in which they were being grown were dictated not by local needs but by global demands. Changes in food habits and international trade have altered cropping patterns in many areas.
- ▶▶ Large-scale migration to urban centres and industrial hubs has seen a heavy concentration of populations in small areas, putting unsustainable pressure on land and water resources.
- ▶▶ As an issue, therefore, land degradation of land is, therefore, much more complex than it appears.

Climate Change & Land Degradation:

- ▶▶ Land has always been an important conversation in the climate change debate. That is because land affects, and is affected by, climate change.
- ▶▶ Forests, trees and vegetation cover are important sinks of carbon dioxide. Land degradation, therefore, reduces the amount of carbon dioxide that is absorbed, and consequently leads to a rise in emissions.
- ▶▶ At the same time, agriculture and activities such as cattle rearing contribute to emissions and are a major source of methane which is a much stronger greenhouse gas than carbon dioxide. Restoration of degraded land can, therefore, have major co-benefits for climate change objectives.
- ▶▶ According to the report by the International Resources Panel referred to earlier, restoring 350 million hectares of degraded landscape by 2030 would take out between 13 to 26 billion tonnes of greenhouse gas emissions from the atmosphere. This would more than offset the emissions from activities like agriculture and cattle-rearing.
- ▶▶ The IPCC report mentioned earlier had estimated that such activities contribute about 25 per cent of annual greenhouse gas emissions, or about 12 billion tonnes of carbon dioxide equivalent.

7. India Lost 31% of Grasslands in a Decade

Context:

- ▶▶ India lost 31 per cent, or 5.65 million hectares (mha), of grassland area in a decade, showed data the Union government presented to the **United Nations Convention to Combat Desertification (UNCCD)** during the ongoing 14th Conference of Parties (COP).

What is Grassland Ecosystem:

- ▶▶ Grasslands are open areas of land where grasses or grass like plants are the dominant species. Other forms of vegetation such as trees are rare in grasslands because they are not suited to thrive in the grassland's dry environment.
- ▶▶ Grasslands receive water through rainfall, and when it does occur the grasses use their roots to search for moisture. Grass within this type of environment reproduces by releasing pollen when the winds blow or by producing plants from their roots.

Highlights:

- ▶▶ The total area under grasslands reduced to 12.3 mha from 18 mha between 2005 and 2015. Grasslands in the Aravalli range in Rajasthan underwent severe degradation. Other states where land has been severely destroyed include Maharashtra, Karnataka, Gujarat and Uttar Pradesh.
- ▶▶ The country also lost around 19 per cent of its **common lands** during the same period, according to the report. The area under common lands decreased to 73.02 mha from around 90.5 mha between 2005 and 2015.

What is Common Land?

- ▶▶ Common lands include the grazing grounds, some forest land, ponds, rivers, and other areas that all members of a rural community can access and use.
- ▶▶ They provide food, water, fodder, firewood and livelihood to rural communities, while also helping recharge groundwater and maintain the land's ecological balance.
- ▶▶ Around 4.74 mha of grazing land was diverted as agricultural land across the country. A lot of common land also met the same fate — 29.11 mha of common land was diverted for croplands in the decade, added the report.
- ▶▶ Industrialisation and conversion of common lands for non-agricultural purposes became a major cause for the decreasing size of common lands.
- ▶▶ Area under cropland saw nearly an 18 per cent increase to 134.5 mha from 113.6 mha.

Productivity

- ▶▶ But even as these lands are being lost to agriculture to feed the growing population, it is worrying to note that their productivity has also declined.
- ▶▶ Productivity of at least 26 mha of land has decreased and of this, close to 0.8 mha was grazing land and 5.9 mha common lands.

Ways in which Grasslands Degrade:

- ▶▶ Loss of grazing land can be attributed to two kinds of drivers — **direct** and **indirect**.

Direct:

- ▶▶ Overgrazing, poor management and deforestation are the direct drivers.

Indirect:

- ▶▶ conversion of pastures into croplands through encroachment, diversion and allotment driven by Increasing Population pressure are the Indirect Drivers.

Importance of Grasslands:

- ▶▶ Grasslands form unique habitats of several wild species.
- ▶▶ Grasslands are not just important wildlife habitats. They are also **reservoirs of crop genes and the backbone of the livelihood of pastoral communities**.
- ▶▶ Historically, grasslands have provided many food grains, including rice, wheat and millets, for human beings. In times of climate change many agricultural crops may not cope with the changes. This gene pool acts as a biodiversity safety net, which can be used for developing more crop varieties.

Concerns of Grasslands Degradation:

- ▶▶ Various species are now pushed to the edge of extinction with the shrinking and degradation of grasslands.
- ▶▶ For instance, grasslands of the arid regions form unique habitats for the blackbuck, a Schedule I species as per the Wildlife Protection Act.
- ▶▶ The **Great Indian Bustard**, one of the heaviest flying birds, has become critically endangered because of the continuous loss and deterioration of arid and semi-arid grasslands. The unique **shola grasslands** in the high-altitude region of the Western Ghats provide habitats for Nilgiri tahr, an endangered mountain ungulate endemic to the Western Ghats.
- ▶▶ Loss of this habitat is one of the prime causes of its population decline.
- ▶▶ **Monocultures of eucalyptus and black wattle** in the mid-1980s aggravated the degradation of these rolling grasslands.

▶▶ Manipur deer or thamin, Asiatic ibex, Kashmir stag or hangul, Kiang or Tibetan wild ass, Himalayan tahr, Swamp deer or barasingha, Great Indian rhinoceros, hog deer and many more are under stress due to the degradation of grassland ecosystems in different eco-climatic zones, from the coastal regions to the alpine meadows and steppes.

▶▶ **Pastoral Communities**

▶▶ Large parts of grasslands have been converted into agricultural land or diverted for other purposes. Over the years, changes have crept into the traditional pastoral practices as well.

▶▶ The pastoral communities have been replacing small herbivores such as sheep and goats by yak in the Khangchendzonga landscape of Sikkim.

Grasslands in India:

▶▶ The most widespread grassland in India is Imperata grasslands.

▶▶ The majority of the grass species found in India belong to the tribes Andropogoneae (30%), Paniceae (15%), and Eragrosteae (9%).

8. Vulture Culture: How the Bird Was Saved from Extinction

Why in News?

▶▶ The commendable role played by the Vulture Care Centres (VCC) in saving the endangered vulture species has brought the VCC in limelight.

Growth of VCC:

▶▶ In the late 1990s, when the population of the vultures in the country had begun to decline sharply, few White-backed vulture was rescued from Keoladeo National Park in Rajasthan, where vultures were dying at an alarming rate.

▶▶ To study the cause of deaths of vultures, a Vulture Care Centre (VCC) was set up at Pinjore, Haryana. Starting with just a few vultures, the VCC, until then the sole facility for conservation of vultures in the country, has come a long way in the past two decades.

▶▶ At present there are nine Vulture Conservation and Breeding Centres (VCBC) in India, of which three are directly administered by Bombay Natural History Society (BNHS). The objective of the VCBCs was not only to look after the vultures and breed them in captivity, but also to release them into the wild.

▶▶ The first objective of the VCBC was to produce a few hundred pairs of each of the three species of the endangered vultures.

Endangered Status:

▶▶ The three species of vultures majorly found in India and their status in IUCN list are

S.No	VULTURE SPECIES	IUCN STATUS
1.	The White-backed Vulture	Critically Endangered
2.	The Long-billed Vulture	Critically Endangered
3.	The Slender-billed vulture	Critically Endangered

Reason Behind the Extinction:

- ▶▶ The major reason behind the vulture population getting nearly wiped out was the drug Diclofenac, found in the carcass of cattle the vultures fed on.
- ▶▶ The drug, whose veterinary use was banned in 2008, was commonly administered to cattle to treat inflammation.

Way Ahead:

- ▶▶ Apart from the establishment of VCBCs and getting Diclofenac banned, it was imperative to manage our carcass dumps and make sure that poisoned carcasses are not dumped for the vultures to feed on.
- ▶▶ The officials in the forest department were also advised that they should not burn and bury animal carcasses because vultures have a strong preference for wild animals. These days the forest department does it to keep poachers away. But the practice is denying food to vultures.
- ▶▶ There should be also emphasis on creating awareness and on creating safe zones for vultures in places where there is an existing vulture population. So far nine states have been undertaken programmes to create safe habitats for vultures.

About BNHS:

- ▶▶ The Bombay Natural History Society, founded in 1883, is one of the largest non-governmental organisations in India engaged in conservation and biodiversity research.
- ▶▶ It supports many research efforts through grants and publishes the Journal of the Bombay Natural History Society.
- ▶▶ BNHS is the partner of Bird Life International in India. It has been designated as a 'Scientific and Industrial Research Organisation' by the Department of Science and Technology.

9. Tamil Nadu Electric Vehicle Policy, 2019

Why in News?

- ▶ In an attempt to give a boost to the manufacture and use of electric vehicles in the State, Chief Minister released the Tamil Nadu Electric Vehicle Policy, 2019, which provided for various concessions to manufacturers and users of e-vehicles.

Key features of the Policy:

- ▶ The policy called for 100% road tax exemption till December 30, 2022, besides a waiver of registration charges for electric two-wheelers. These sops are expected to push up sales of electric vehicles. The policy stated that the registration fees would be waived as per Government of India's notification while road tax exemption would be enhanced from 50% to 100% till December 2022.

Special Package:

- ▶ The manufacture of electric vehicles, their components, particularly EV batteries, and manufacture of charging infrastructure would be provided a special package of incentives.
- ▶ Special packages were announced for units engaged in e-vehicle manufacture that made investments over ₹50 crore and employed at least 50 persons.
- ▶ Full reimbursement would be provided for SGST paid on the sale of EVs manufactured, sold and registered for use in the State till 2030.
- ▶ In the case of intermediate products where SGST reimbursement was not applicable, a capital subsidy of 15% would be given on eligible investments over 10 years. As for transport vehicles such as taxis and tourist cars, permit fees would be waived for electric transport vehicles till December 2022 and they would be granted 100% road tax exemption for the same period. The capital subsidy for e-vehicle manufacturers would be payable on eligible investments made in the State till December 2025. The cost of land shall not exceed 20% of the total eligible investments reckoned for the purpose of capital subsidy.
- ▶ The State government has attempted to put southern districts also on the investment map. The new electric policy offers to provide investors a 50 per cent subsidy on the land cost if the investment is made to obtain land from government agencies in southern districts, while in other districts it is just 15 per cent.

Going electric

The Tamil Nadu Electric Vehicle Policy, 2019, provides for various concessions to manufacturers of e-vehicles

- EV-related and charging infrastructure manufacturing units will be provided 100% exemption on electricity tax till December 2025
- Units that obtain land by sale or lease shall be entitled to 100% exemption on stamp duty for transactions till December 2022
- Units that obtain land from SIPCOT, SIDCO or other governmental agencies will be provided a 15% subsidy on the cost, and will be provided 50% subsidy if the investment is in the southern districts
- Units will be provided an employment incentive in the form of the reimbursement of employer's contribution to EPFO for all new jobs created till December 2025
- The government will provide a higher capital subsidy of 20% of the eligible investment over 20 years in cases where units are engaged in making EV batteries
- Amendment to building and construction laws will be effected to ensure that charging infrastructure is integrated at the planning stage itself for all new constructions and apartments in cities

Separate plates:

- ▶▶ In order to distinguish electric vehicles from others, registration number shall be exhibited in yellow colour on a green background for transport vehicles and in white on a green background for all other EVs.

10. India Cooling Action Plan

Why in News?

- ▶▶ The Union Minister of State (MoS) for Environment, Forest and Climate Change, Mr. Babul Supriyo was speaking at an event in New Delhi to mark World Ozone Day.

India Cooling Action Plan:

- ▶▶ The minister highlighted the fact that India became one of the first countries in the world to launch a comprehensive Cooling Action plan in March, 2019, which has a long-term vision to address the cooling requirement across sectors such as residential and commercial buildings, cold-chain, refrigeration, transport and industries.
- ▶▶ The India Cooling Action Plan (ICAP) lists out actions which can help reduce the cooling demand, which will also help in reducing both direct and indirect emissions.
- ▶▶ The India Cooling Action seeks to:
 - ✓ Reduce cooling demand across sectors by 20% to 25% by 2037-38
 - ✓ Reduce refrigerant demand by 25% to 30% by 2037-38
 - ✓ Reduce cooling energy requirements by 25% to 40% by 2037-38
 - ✓ Recognize “cooling and related areas” as a thrust area of research under national S&T Programme.
 - ✓ Training and certification of 100,000 servicing sector technicians by 2022-23, synergizing with Skill India Mission.

World Ozone Day:

- ▶▶ Every year September 16 is marked as the International Day for the Preservation of the Ozone Layer or World Ozone Day.
- ▶▶ This day was designated by the UN in 2009.
- ▶▶ This date was chosen because it was the day in 1987 when nations signed the Montreal Protocol on Substances that Deplete the Ozone Layer.
- ▶▶ Theme for this year: 32 Years and Healing

11. Paraquat Herbicide

Why in News?

- ▶▶ The use of herbicide Paraquat killed around 170 people in the last two years in Odisha's Burla district leading to demands for its ban.

Highlights:

- ▶▶ Paraquat is a toxic chemical that is widely used as an herbicide (plant killer), primarily for weed and grass control.
- ▶▶ It has been banned in 32 countries including Switzerland, where herbicide producing company Sygenta is based.
- ▶▶ Paraquat also figures on the list of 99 pesticides and herbicides the Supreme Court to ban in an ongoing case.
- ▶▶ Paraquat dichloride is being used for 25 crops in India, whereas it is approved to be used on only nine crops by the Central Insecticide Board and Registration Committee. This is a violation of the Indian Insecticides Act.
- ▶▶ So far in India, only Kerala has banned the herbicide.
- ▶▶ Another violation: since farmers can't and don't read the label on paraquat containers, retailers sell paraquat in plastic carry bags and refill bottles.

Why lethal?

- ▶▶ There is no antidote to this herbicide, the consumers of which complain of kidney, liver and lung problems.
- ▶▶ They may recover from kidney problems, but die of lung- and liver-related ailments. Some also witness kidney failure.
- ▶▶ Paraquat is yet to be listed in the prior informed consent (PIC) of Rotterdam Convention, is an international treaty on import/export of hazardous chemicals signed in 1998.
- ▶▶ If a chemical figure in the PIC, the exporting country has to take the importing nation's prior consent before exporting it.

Rotterdam Convention:

- ▶▶ The Rotterdam Convention is formally known as the Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. It is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals.
- ▶▶ The convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans.

- ▶▶ Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged to make sure that producers within their jurisdiction comply. India is a party to the convention, with 161 other parties.

12. Invasive Species May Soon Wipe Out Shola Vegetation from Nilgiris: Report

Why in News?

- ▶▶ According to a report filed by an expert committee formed by the Madras High Court, expanding plantations like tea and eucalyptus along with exotic and invasive species in the Nilgiris can wipe out Shola vegetation.

About Shola Vegetation:

- ▶▶ The Shola vegetation are **tropical montane forests** found in the Western Ghats separated by rolling grasslands in high altitudes.
- ▶▶ The word Shola is derived from the Tamil language word cōlai meaning grove.
- ▶▶ The shola forests are patches of forests that occur only in the valleys where there is least reach of the fog and mist.
- ▶▶ This unique landscape is native only to the **Southern Western Ghats**.
- ▶▶ They are found only in the high-altitude mountains of the states **Karnataka, Kerala and Tamil Nadu**. Nowhere else in the world exist such a kind of forests.

Expert Committee Findings:

- ▶▶ According to a report filed by an expert committee alarming expansion of exotic and tea plantations threaten native dry deciduous, moist deciduous and thorn forests and grasslands there. This change in vegetation will result in loss of water sources and is already leading to massive landslides. The committee recognises the deleterious impact of invasive species like **eucalyptus, tea plantations and wattle** and naturalised alien species like **Lantana camara, Opuntia stricta, Chromolaena odorata, Parthenium hysterophorus** and **Senna spectabilis** on the Shola forest and grasslands. The wattle is replacing grasslands and Shola forests. The plantations of Eucalyptus, pines and cupressus have virtually wiped out grasslands and sholas. The massive tea gardens also replaced the vegetation.
- ▶▶ The expert committee visited the Mudumalai Tiger Reserve and found that around 60 per cent (690 square kilometres) of the entire core and buffer area of the reserve is under invasion.
- ▶▶ The domination of invasive species in the Western Ghats was between 65 and 75 per cent, according to data presented by the state government.

- ▶▶ No secondary or fresh growth of indigenous trees, plants or grass, which serve as food for elephants, was seen in areas occupied by invasive species. Moreover, the attempts made by the forest department to manage the invasive alien species has had little or no success, according to the report.

Committee Recommendations:

- ▶▶ The committee suggested in the report, removal of exotics and invasive alien species and subsequent ecological restoration of weed-free landscapes. This will require well-knitted management structure and resources. The committee recommended that there is an urgent need to map the extent of exotic plantations, spread of invasive alien species and loss of grasslands in each forest division of the Nilgiris.

13.National framework for Recycling of Plastic Waste.

Context:

- ▶▶ The National Green Tribunal (NGT) has pulled up the Ministry of Environment, Forest and Climate Change for a three-year delay in drawing up a national framework for recycling of plastic waste by brand owners and plastic producers.

Issue:

- ▶▶ **India has a law that requires all companies to recover the plastic they use to package their products.**
- ▶▶ The Union Ministry of Environment, Forest and Climate Change notified the Plastic Waste Management (PWM) Rules in March 2016 which mandated extended producer responsibility (EPR) for all plastic producers, importers and brand owners (PIBOs).
- ▶▶ PIBOs did not take concrete steps in 2016-17 to meet their targets under EPR.
- ▶▶ But with the advent of producer responsibility organisations (PROs) in 2018, they have outsourced their EPR targets, which can lead to a new set of problems.

Background:

- ▶▶ The observation comes at a time when the government has launched a campaign against single-use plastic.
- ▶▶ In December 2018, CPCB constituted a nine-member core group to frame the national framework for implementation of EPR and define the responsibilities of PIBOs, PROs and the government.

Related Issues:

Extended Producers Responsibility (EPR):

- ▶▶ EPR is a practice and policy approach in which producers are made responsible for collecting and processing their manufactured products upon end of their lifetime.

Responsibility may be fiscal, physical or a combination of both. Companies have to specify collection targets as well as a time line for this process within a year of the rules coming into effect. The Rules also mandate the responsibilities of local bodies, gram panchayats, waste generators and retailers to manage such waste.

Issue with Extended Producers Responsibility (EPR):

- ▶▶ As per CSE's publication on Model Framework for Segregation, major changes required in the plastic waste rules are concerning EPR.
- ▶▶ EPR targets have to be accounted for at the national level, irrespective of which state the products are sold or consumed in. The amendment does not address these issues.
- ▶▶ No example of deposit refund scheme system has been implemented in any state.
- ▶▶ The producers have been reluctant in taking the onus of the waste despite various interventions across the country by government and civic societies.

Stats about Plastic Waste:

- ▶▶ **Plastic Infrastructure Report, 2017**, India consumes close to 12.8 million tonnes of plastic per annum, of which, close to 5 million tonnes is rendered as waste every year.
- ▶▶ **70% of the plastic waste industry is informal in nature** and no action plan for formalising the industry has been pushed in the last two years.

Issues with policies on Plastic:

- ▶▶ Good and Service Tax (GST), plastic waste was put under a 5 per cent bracket, hurting the informal sector, which already lacks a concrete action plan.
- ▶▶ The status of plastic waste management in the country is grim even after the rules gave emphasis on **banning plastics below 50 microns**, phasing out use of multi-layered packaging and introducing **extended producer responsibility (EPR)** for producers, importers and brand owners to ensure environmentally sound management of plastic products until the end of their lives.

Concept of Producer Responsibility Organisations (PROs):

- ▶▶ A PRO is a third-party organisation that facilitates the responsibility of producers to take back waste from open market, recycle or process, and file compliance.
- ▶▶ With a PRO, producers do not physically take back the product, but instead support the process financially.

Problems with PROs:

- ▶▶ PRO would experience great challenges on the ground due to low level of source segregation. Success would lie in creating a strong monitoring and reporting structure for both PROs and recyclers.

Conclusion:

- ▶▶ An ideal EPR framework should integrate all.
- ▶▶ PIBOs should work with urban local bodies to manage waste after segregating it into biodegradable, non-biodegradable and domestic hazardous categories.
- ▶▶ They can also contribute to development of infrastructure for EPR implementation, if necessary.

National Green Tribunal:

- ▶▶ The National Green Tribunal is **Statutory body**, established under the **National Green Tribunal Act 2010**.
- ▶▶ For effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.
- ▶▶ It is a **specialized body equipped with the necessary expertise to handle environmental disputes** involving multi-disciplinary issues.
- ▶▶ The **Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.**

Central Pollution Control Board (CPCB):

- ▶▶ The Central Pollution Control Board (CPCB) of India is a statutory organisation under the Ministry of Environment and Forests (MoEF).
- ▶▶ It was established in 1974 under the **Water (Prevention and Control of pollution) Act, 1974**.
- ▶▶ CPCB is also entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

14. Blooming of Microalgae Kills Coral Reefs in Gulf of Mannar

Why in News?

- ▶▶ The recent blooming of *Noctiluca scintillans*, a greenish marine microalga, in the Gulf of Mannar, has caused the death of more than 180 colonies, mostly on the shoreward side of Shingle Island in the Gulf of Mannar Marine National park.

About the Algal Bloom:

- ▶▶ The recent monitoring of the status of corals around the islands in Gulf of Mannar has found a multitude of *Noctiluca scintillans* cells settled on corals and other benthic organisms in the reef areas of Shingle Island.

- ▶▶ Majority of the colonies had shown obvious sign of mucous sheathing. In spite of this defence over the colonies, most of them were found dead due to algal bloom.
- ▶▶ The absence of secondary algae also confirms the recent death of these coral colonies due to smothering effect of the microalgae while settling.

About Mucous Sheathing:

- ▶▶ Corals generally secrete mucus in order to coat their body with mucus, so that they can maintain moisture to withstand severe environmental conditions.
- ▶▶ This can be generally useful when corals are exposed to air during extremely low tides, experiencing high temperature and dryness under strong sunlight for a couple of hours.
- ▶▶ Corals also release mucus under stressed conditions such as defence against biofouling, pathogens, UV radiation, sedimentation, pollutants, and desiccation.
- ▶▶ Even water currents and temperature or salinity changes can be a cause of mucus release.

15.Clean Air Coalition:

Why in News?

- ▶▶ WHO is launching a “Clean Air Coalition” led by the Governments of Spain and Peru, while a group of philanthropic organizations and foundations were poised to launch a new “Clean Air Fund”

Background:

- ▶▶ Some 29 countries and over 50 subnational entities have pledged to join the coalition committed to achieving healthy air quality by 2030, as part of their Climate Summit pledges.
- ▶▶ The Clean Air Coalition is also being supported by the UN Secretary General’s Office and the Climate and Clean Air Coalition of UN Environment.

What is Clean Air Fund?

- ▶▶ Fund brings together a group of like-minded philanthropic foundations” which have recognized that tackling air pollution will have “huge benefits for health as well as for climate. New Clean Air Fund aims to support projects that “democratizes” air quality data, making knowledge about air quality more widely accessible to large numbers of people in cities, through projects such as the Breathe London project.
- ▶▶ Breathe London has created a network of mobile sensors that allow children to decide how best to walk to school and parents to identify pollution hot spots.
- ▶▶ The new Clean Air Fund will also support “ambitious local government action.

Outcome:

- ▶▶ Climate and Clean Air Coalition (CCAC) agreed to accelerate efforts to significantly reduce short-lived climate pollutants by the end of the next decade in order to put the world on a “pathway that rapidly reduces warming in the near term and maximizes development, health, environmental, and food security benefits”.

Short Lived Climate Pollutants:

- ▶▶ Short-lived climate pollutants like methane, black carbon and hydrofluorocarbons (HFCs) – also known as super pollutants – are many times more powerful than carbon dioxide at warming the planet but because they are short-lived in the atmosphere, preventing emissions can rapidly reduce the rate of warming.
- ▶▶ Many are also dangerous air pollutants and reductions will benefit human health and ecosystems. Increasing action on short-lived climate pollutants can avoid an estimated 2.4 million premature deaths from outdoor air pollution annually by 2030, prevent as much as 52 million tonnes of crop losses per year, and slow the increase in global warming by as much as 0.6°C by 2050. It can also prevent the climate tipping points that can exacerbate long-term climate impacts and make adapting to climate change harder, especially for the poor and most vulnerable.

Goal:

- ▶▶ The Coalition’s goal is to reduce short-lived climate pollutants beyond the recommendations made by the Intergovernmental Panel on Climate Change (IPCC) in its special report Global Warming of 1.5°C.

About the UN Environment Programme:

- ▶▶ UNEP is the leading global voice on the environment. It provides leadership and encourages partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. UNEP works with governments, the private sector, civil society and with other UN entities and international organizations across the world.

About Climate and Clean Air Coalition:

- ▶▶ The Climate and Clean Air Coalition is a voluntary partnership of governments, intergovernmental organizations, businesses, scientific institutions and civil society organizations committed to improving air quality and protecting the climate through actions to reduce short-lived climate pollutants. Their global network currently includes over 120 state and non-state partners, and hundreds of local actors carrying out activities across economic sectors.

16. Drought Action Plan

Context:

- ▶▶ The National Rainfed Area Authority (NRAA) is working on developing a comprehensive drought-proofing action plan for 24 districts in Rajasthan, Andhra Pradesh and Karnataka this year.

Background:

- ▶▶ The NRAA will develop similar action plans for other districts in a list of 151, including in Maharashtra, identified as drought-prone according to a study by Indian Council of Agricultural Research (ICAR), based on parameters set by the Intergovernmental Panel on Climate Change.

Role of Government:

- ▶▶ The primary responsibility of managing drought (or any other natural disaster) is that of the State Governments. The role of Central Government is to supplement the efforts of the State Government in effective management of disasters and provide additional resources (food grains / financial assistance etc.) to combat the situation.

What is Drought:

- ▶▶ Drought connotes a situation of water shortage for human, cattle and agriculture primarily on account of, though not limited to, significant shortfall in rainfall.

National Rainfed Area Authority:

- ▶▶ The Union Government has constituted a National Rainfed Area Authority on 3 November, 2006 to give focused attention to the problems of rainfed areas of the country.

Drought Management Plan:

- ▶▶ Drought Management Plan (DMP) is designed to help reduce the time taken in mobilizing resources for an effective response and enable a harmonious relationship among stakeholders.
- ▶▶ The goal of DMP is to facilitate overall management of the drought situation in a structured and planned manner with the most efficient and optimum utilisation of time, effort and resources so that adverse impact on the community is minimised.
- ▶▶ DMP helps in delineating roles and responsibilities of different Ministries/Departments of the Government of India involved in drought management for mitigation, preparedness and for relief measures in managing the drought.
- ▶▶ DMP ensures better preparation and timely communication among stakeholders, which is critical in managing a drought.

Disaster Management (DM) Act, 2005:

- ▶▶ Section 11 of the DM Act, 2005 mandates that there shall be a National Disaster Management Plan (NDMP) for the whole of India. While the national plan will pertain to the disaster management for the whole of the country, the hazard specific nodal ministries and departments notified by the Government of India will prepare detailed DM plans specific to the disaster assigned.

Sendai Framework for Disaster Risk Reduction (DRR):

- ▶▶ The Sendai Framework for Disaster Risk Reduction 2015-2030 is a non-binding agreement, which the signatory nations, including India, will attempt to comply with on a voluntary basis.
- ▶▶ The four priorities for action under the Sendai Framework are:
 - ❖ Understanding disaster risk, strengthening disaster risk governance to manage disaster risk, Investing in disaster risk reduction for resilience
 - ❖ Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and Reconstruction.

17. Emissions Trading Scheme (ETS)

Why in News?

- ▶▶ Gujarat became the world’s first market for particulate matter emissions in the world, after 155 industrial units of Surat came together for “live trading” under the Emissions Trading Scheme (ETS).

Emission Trading Scheme:

- ▶▶ Launched in Surat, the Emissions Trading Scheme (ETS) is a regulatory tool that is aimed at reducing the pollution load in an area and at the same time minimising the cost of compliance for the industry.
- ▶▶ ETS is a market in which the traded commodity is particulate matter emissions.
- ▶▶ The Gujarat Pollution Control Board (GPCB) sets a cap on the total emission load from all industries.
- ▶▶ Various industries can buy and sell the ability to emit particulate matter, by trading permits (in kilograms) under this cap.
- ▶▶ For this reason, **ETS is also called a cap-and-trade market.**

Why was Surat chosen for the scheme?

- ▶▶ In the last five years, the quality of air in Surat has deteriorated. In 2013, when the project was conceptualised, the PM10 level at Air India Building in Surat was 86 micrograms per cubic metre.

- ▶▶ Surat was chosen because its industrial associations agreed to run the pilot scheme. Also, industries in Surat had already installed **Continuous Emission Monitoring Systems**, which makes it possible to estimate the mass of particulate matter being released.

Global Scenario:

- ▶▶ While trading mechanisms for pollution control do exist in many parts of the world, none of them is for particulate matter emissions. For example, the CDM (carbon development mechanism) under the Kyoto Protocol allows trade in 'carbon credits'; the European Union's Emission Trading System is for greenhouse gas emission; and India has a scheme run by the Bureau of Energy Efficiency that enables trading in energy units.

18.National Green Tribunal

Context:

- ▶▶ Instead of giving financial and administrative support to the NGT, efforts are usually directed towards diluting its powers, defeating the very purpose behind its creation.

Background:

- ▶▶ Taking into account the increasing number of environmental cases across the country and the involvement of multi-disciplinary issues in such cases, the Government of India enacted the National Green Tribunal (NGT) Act in 2010 for the effective and expeditious disposal of cases relating to environmental protection, conservation of forests and other natural resources.

About National Green Tribunal:

- ▶▶ The National Green Tribunal is **Statutory body**, established under the **National Green Tribunal Act 2010**. For effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental there to. It is a **specialized body equipped with the necessary expertise to handle environmental disputes** involving multi-disciplinary issues.
- ▶▶ The **Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.**

Handling Complex Issues:

- ▶▶ To address complex environmental cases, Section 4 of the NGT Act prescribes that the tribunal shall consist of a full-time chairperson and at least 10, but not exceeding 20 judicial and expert members at all times.

Jurisdiction:

▶▶ Section 14, 15 and 16 of the Act states that

- ❖ The tribunal shall have the jurisdiction over all civil cases where a substantial question relating to environment is involved,
- ❖ Provide relief and compensation to the victims of pollution and other environmental damage arising under the environmental acts, and
- ❖ Hear appeal from any person aggrieved by any order or decision related to environmental matters.

Administrative Problems:

- ▶▶ A less obvious but critical aspect of the NGT's efficient functioning, which can significantly impact the decision-making process and access to justice, concerns the administrative support supplied by the Government of India.
- ▶▶ However, from the very beginning, the Government of India has not been enthusiastic to see NGT function as an effective body. In the absence of basic infrastructure facilities and human resources, three judicial members submitted their resignations between 2012-13.
- ▶▶ This led to the intervention of the Supreme Court in 2012 in directing the Union Ministry of Environment, Forest and Climate Change (MoEF&CC) to provide basic facilities so that the NGT members continue in the bench.
- ▶▶ **Section 4 of the NGT Act, 2010**, prescribes that the tribunal shall consist of a full time chairperson and not less than 10 judicial and 10 expert members but subject to maximum of twenty full-time judicial and expert members.

▶▶ Issue:

- ❖ In the last nine years, the NGT has never got the minimum strength of ten judicial and ten expert members to address the increasing number of environmental litigations across the country.
- ❖ Currently, with only four judicial and two expert members, the NGT appears paralysed.
- ❖ With no indication of appointment of more judicial and expert members from the MoEF&CC, the **four zonal benches have been completely shut over the past one year.**

Opinions of Lawyers:

- ▶▶ Many lawyers practicing in the NGT have expressed their discomfort with the video conference hearing which they feel has put enormous cost and burden on their clients.

- ▶▶ Hearings are adjourned or listed in an unfashionable manner, without giving sufficient time to lawyers and clients to present their matter.
- ▶▶ Hearings are adjourned or listed in an unfashionable manner, without giving sufficient time to lawyers and clients to present their matter. Lawyers also complain that they hardly get a chance to mention any new matter via video-conference hearing.
- ▶▶ The great majority of cases are not resolved within the stipulated time-period of six months.

Other Issues:

- ▶▶ The scale and nature of environmental litigation has changed drastically over the years, the government has not shown any seriousness in appointing a variety of expert members to address complex environmental problems ranging from nuclear waste to bio-medical wastes to hazardous wastes.
- ▶▶ For example, out of the 13 expert members appointed between 2010-2018, four are from Indian Forest Service and two are from Indian Administrative Service. Complex environmental problems demand special knowledge and expertise.
- ▶▶ In the absence of variety of expert members, decisions, especially those related to the quantum of compensation amount to be paid by the polluter are arrived at without any scientific basis.
- ▶▶ This has **resulted in an increasing number of appeals against the NGT's decisions in the Supreme Court.**
- ▶▶ **Order implementation**
 - ❖ There are also serious challenges as far as implementation of the NGT orders is concerned. For example, Rule 35 (1) of the Act specifies that the compensation amount as ordered by the tribunal should be remitted to the authority of the **Environmental Relief Fund** within a period of 30 days from the date of order or award or as otherwise ordered by the tribunal.
 - ❖ It is observed that the polluters don't abide by this rule.
 - ❖ Second, the NGT orders are increasingly challenged in the Supreme Court, where a heavy penalty has been imposed by the tribunal.
 - ❖ Third, there is **no institutional mechanism to ensure that the environmental regulatory authorities comply with the orders of the tribunal.**
 - ❖ Most of the landmark orders of the NGT related to Ganga water pollution, Delhi air pollution, illegal mining, and solid waste management remain unenforced.

Core Concerns:

- ▶▶ Efforts in India have been directed towards diluting the role and function of the NGT.
- ▶▶ Given the current state of the NGT, it is reasonable to claim that the multiple objectives of access to justice, efficiency, cost-efficiency, and protection of the environment through the NGT Act, have been defeated.

Way Forward:

- ▶▶ The NGT deserves more attention today than what it has been hitherto.
- ▶▶ The Government of India must realise the risk of pending of thousands environmental litigations in zonal benches to its ambitious economic growth target and policy to lure investors. The government needs to provide adequate financial and human resources – if it does not want the NGT to wither away.

19. Special Report on the Ocean and Cryosphere in a Changing Climate

Why in News?

- ▶▶ The Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC) was released in Monaco on 25th September.
- ▶▶ The report highlights the destructive and irreversible changes on Earth's ice sheets, glaciers, and oceans, and warns that the hazards posed by unprecedented warming will only worsen if greenhouse gas emissions continue at their current rate.

About IPCC:

- ▶▶ IPCC was founded in **November 1988** by the **World Meteorological Organization (WMO)** and the **United Nations Environment Program (UNEP)** jointly as a place to study global warming problems at a governmental level.
- ▶▶ It reviews the science related to climate change and its impacts on the future to help policymakers and world leaders prepare to act on climate change and its spinoff effects.
- ▶▶ It is the mechanism that accumulates scientific knowledge on global warming while debates on the international countermeasures have been made in the COPs (Conference of the Parties) of United Nations Framework Convention on Climate Change (UNFCCC).
- ▶▶ **The IPCC doesn't conduct research of its own.**

Background:

- ▶▶ The report is the **third in the series** of three Special Reports in the current **Sixth Assessment Report (AR6) cycle** which began in 2015 and will be completed in 2022.
- ▶▶ The first was **Special Report on Global Warming of 1.5 °C** and the second was the **Special Report on Climate Change and Land (SRCCL)**, also known as the "Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems" which was released on August 7, 2019.

Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC):

- ▶▶ SROCC is an analysis of sound research over recent years about the Earth's diverse water cycle and its many dependants.
- ▶▶ It is the first report that discusses the effects of climate change on oceans and parts of the Earth frozen in ice, collectively known as the cryosphere.
- ▶▶ The three-year-long survey summarized in the report looks at the adverse impacts of climate change on the oceans, coastal regions, polar ice caps, and mountain ecosystems as well as the impacts on human communities.
- ▶▶ Possible solutions for the mitigation and adaptation to climate-related change has also been suggested by the report's authors.
- ▶▶ The report was the work of 104 scientists from 36 countries world over, who have referred to more than 7,000 scientific publications to compile their findings.
- ▶▶ The Oceans and Cryosphere report addresses these ecosystems in five different chapters, as follows:
 - ❖ High mountain areas
 - ❖ Polar regions
 - ❖ Rising sea levels and their impacts on islands and coasts
 - ❖ Changing ocean and marine ecosystems and their effects on the communities that depend on them
 - ❖ Managing the risks of extreme climate changes
- ▶▶ According to the report, the world's oceans have absorbed more than 90% of the warming that has occurred on Earth over the last 50 years, with the rate of ocean warming more than doubling since 1993.
- ▶▶ As a result of increasing rates of ice loss from the Greenland and Antarctic ice sheets, ocean levels rose around 15 centimeters during the 20th century and are currently rising at a rate of 3.6 millimeters per year — and accelerating.

Impact of Warming Ocean:

- ▶▶ Warming oceans will lead to more frequent tropical cyclones, the report said that extreme sea-level events that have historically occurred once each century will occur every year by 2050, increasing flooding risks for low-lying coastal cities and island communities.
- ▶▶ As a result, some small islands, which are home to 65 million people globally, are at risk of becoming uninhabitable.
- ▶▶ Glacial melt, reductions in snow cover, and thawing of permafrost are also projected to increase the risk of landslides, avalanches, rockfalls, and floods in mountain regions.
- ▶▶ According to the report the Arctic region, where 4 million people live, especially indigenous peoples, have already had to adjust their travel and hunting patterns in response to changes in seasonal ice and snow conditions, some communities have also planned for relocation.
- ▶▶ Warming of the world's oceans has also disrupted the abundance of fish and shellfish stocks in some regions, leaving communities that depend on seafood at risk of decreased food security.

Way Forward:

- ▶▶ The open sea, the Arctic, the Antarctic and the high mountains may seem far away to many people, but we depend on them and are influenced by them directly and indirectly in many ways – for weather and climate, for food and water, for energy, trade, transport, recreation and tourism, for health and wellbeing, for culture and identity.
- ▶▶ Significantly reducing greenhouse gas emissions, protecting and restoring ecosystems, and carefully managing the use of natural resources, the report said, would limit the impact of climate change on oceans and ice-covered regions around the world.

20.Waste Management on Siachen Glacier

Why in News?

- ▶▶ The Indian Army has removed 130 tonnes of garbage from the Siachen Glacier and is cutting potential trash in rations.

Challenges:

- ▶▶ On average, 236 tonnes of waste is generated every year on Siachen glacier.
- ▶▶ The biggest challenge is the high altitude as most posts are located between 18,000 and 21,000 feet. Bana post is the highest on the glacier close to 22,000 feet. At 18,000-19,000 feet, Indian and Pakistani posts face each other. Beyond 20,000 feet, it is only India.
- ▶▶ Nothing degrades at sub-zero temperatures, so everything had to be brought down.

Waste Management on Siachen:

- ▶▶ The army is looking to cut waste in the rations and utilities delivered on the glacier and make Siachen garbage-free in 12-15 years.
- ▶▶ Earlier, waste disposal work was fragmented and intermittent.
- ▶▶ Based on a 2018 concept note on waste management on the glacier, the Army has made bringing down waste a part of the Standard Operating Procedure (SOP) for troops.
- ▶▶ The capacity of each person to carry is 10-15 kg due to the extreme weather.
- ▶▶ Since then, nearly 130 tonnes of waste has been brought down from the Siachen Glacier and disposed of.
- ▶▶ The three types of wastes are disposed of differently:
 - ❖ Biodegradable waste is rolled using baling machines.
 - ❖ Non-biodegradable, non-metallic waste: three incinerators have been set up. The waste is burnt in the incinerators but they do not produce Carbon Monoxide. The ash is used as manure.
 - ❖ Metallic waste: there are three extrication centres. Industrial crushers will be procured to crush it and send it down.
- ▶▶ The Army has collaborated with the civil administration there and barrels have been painted and set up in villages around to segregate waste.

Siachen Glacier:

- ▶▶ Siachen is a 76.4-kilometre-long glacier in the Karakoram range.
- ▶▶ It covers around 10,000 square kilometres of uninhabited terrain.
- ▶▶ It sits extending across two disputed boundaries – with Pakistan and China.
- ▶▶ For the last 33 years, Indian troops have been deployed on the world's highest and coldest battlefield. They safeguard the nation's frontiers in temperatures of -40 to -50 degrees Celsius. The Siachen Glacier presents a unique set of environmental challenges for the human body, which has to make great adjustments to function at such extreme altitudes.
- ▶▶ Low oxygen levels, an increase in blood pressure due to reduced barometric pressure at high altitude, extreme cold, high levels of ultraviolet radiation and low humidity are just some of the adversities that Indian Army endures.

21. Shrinking Buffer Zone at Sathyamangalam Tiger Reserve

Context:

- ▶▶ Sathyamangalam Tiger Reserve (STR) that registered the highest growth in tiger numbers in the country the last four years, will have no eco-sensitive zone (ESZ) or at the most just one kilometre, around its boundary.:

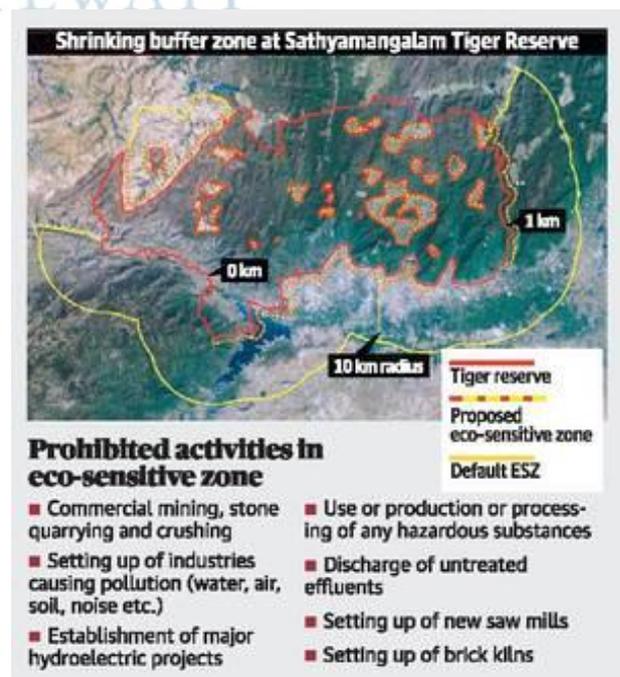
- ▶▶ According to a draft notification, **the extent of ESZ varies from zero to one kilometer around the tiger reserve.**
- ▶▶ Activists in the western region are alike in their opinion that the reduction of ESZ from the default 10 km radius to zero kilometre was to help the mining lobby.

About STR and Why Is It So Critical?

- ▶▶ Sathyamangalam Wildlife Sanctuary and Tiger Reserve is a protected area and tiger reserve along the Western Ghats in the Erode District of Tamil Nadu.
- ▶▶ First declared as a wildlife sanctuary in 2008 and enlarged in 2011, it covers a forest area of 1,411.6 km² (545.0 sq mi) and is the largest wildlife sanctuary in Tamil Nadu.
- ▶▶ In 2013, it became the fourth tiger reserve as a part of Project Tiger in the state of Tamil Nadu.
- ▶▶ The notification itself states that the **STR is highly critical to accommodate the spill-over population of tigers** from the Mudumalai, Bandipur Tiger Reserves and Nilgiri North Forest Division through Moyar valley on one hand, and similarly, the BTR Tiger Reserve and Kollegal Forest Divisions connecting on the other side with the Hassanur Range.
- ▶▶ STR acts as a **bridge between the two major landscapes, the Western Ghats and the Eastern Ghats**, ensuring a vast territory for tigers, and thus enhancing long-term conservation measures through exchange of genes between meta populations.
- ▶▶ Therefore, considering the ecological and conservation value of wildlife wealth, it is necessary to conserve and protect the area around the STR as ESZ, for the better management and protection of wildlife, especially tigers.

Eco-Sensitive Zone (ESZ):

- ▶▶ Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India around Protected Areas, National Parks and Wildlife Sanctuaries.
- ▶▶ The Environment Protection Act, 1986 does not mention the word “Eco-sensitive Zones”.



- ▶▶ The section 3(2)(v) of the Act, says that Central Government can restrict areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards
- ▶▶ Besides the section 5 (1) of this act says that central government can prohibit or restrict the location of industries and carrying on certain operations or processes on the basis of considerations like the biological diversity of an area, maximum allowable limits of concentration of pollutants for an area, environmentally compatible land use, and proximity to protected areas.
- ▶▶ The above two clauses have been effectively used by the government to declare Eco-Sensitive Zones or Ecologically Fragile Areas (EFA).
- ▶▶ The MoEF (Ministry of Environment & Forests) has approved a comprehensive set of guidelines laying down parameters and criteria for declaring ESAs. A committee constituted by MoEF put this together.
- ▶▶ The guidelines lay out the criteria based on which areas can be declared as ESAs. These include Species Based (Endemism, Rarity etc), Ecosystem Based (sacred groves, frontier forests etc.) and Geomorphologic feature based (uninhabited islands, origins of rivers etc).

22. India, Nepal, Bhutan to Count Tigers in High Altitudes

Context:

- ▶▶ With recent studies this year having reported the presence of tigers in high altitude regions in India, experts from India, Nepal and Bhutan under the aegis of their governments are about to take up a detailed assessment on how entrenched tigers are, in these regions.

Key Stats of The Early Study:

- ▶▶ The report by the experts has established that out of 52,671 sq.km of tiger habitat in high altitudes, about 75 percent lies in India.
- ▶▶ As part of the “high altitude tiger master plan” gathering background information on land attributes, ascertaining status of protection and engaging local communities in tiger conservation is also to be ascertained.
- ▶▶ Tigers in high altitude has been reported from the states of Arunachal Pradesh, Uttarakhand and West Bengal. The tiger survey earlier this year also has estimated that about 2967 tigers exists in India.
- ▶▶ The report does not contain numbers of other predators like leopards. But better tiger numbers are generally seen as indicating good prey bases and habitat.

Tiger Bearing Habitats (Tiger Landscapes) in India:

- ▶▶ The tiger bearing habitats were divided into five landscape regions—
 1. Shivalik-Gangetic plains,
 2. Central India and the Eastern Ghats,
 3. Western Ghats,
 4. North Eastern Hills and Brahmaputra Flood Plains and
 5. The Sundarbans.

About Global Tiger Forum:

- ▶▶ The GTF was formed in 1993 on recommendations from an international symposium on Tiger Conservation at New Delhi, India. The Global Tiger Forum (GTF) is the only **inter-governmental international body** established with members from willing countries to embark on a global campaign to protect the Tiger. The first meeting of the Tiger Range countries to setup the forum was held in 1994, in which India was elected to the Chair and was asked to form an interim secretariat. In 1997, the GTF became an independent organization. GTF was set up to highlight the rationale for tiger preservation and provide leadership and common approach throughout the world in order to safeguard the survival of the tiger, its prey, and its habitat.

Tiger Range Countries:

- ▶▶ There are 13 Tiger Range Countries (TRCs) viz., Bangladesh, Bhutan, China, India, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand and Vietnam.

23. Forest-PLUS 2.0

Why in News?

- ▶▶ US Agency for International Development (USAID) and India's Ministry of Environment, Forest and Climate Change (MoEF&CC) officially launched Forest-PLUS 2.0.

About Forest-PLUS 2.0:

- ▶▶ It is a five-year programme initiated in December 2018 that focuses on developing tools and techniques to bolster ecosystem management and harnessing ecosystem services in forest landscape management.
- ▶▶ Forest-PLUS 2.0, the second set of pilot projects, is meant to enhance sustainable forest landscape management after Forest-PLUS completed its five years in 2017. The programme's first set focused on capacity building to help India participate in Reducing Emissions from Deforestation and forest Degradation (REDD+). It included four pilot projects in Sikkim, Rampur, Shivamogga and Hoshangabad.

- ▶▶ Under these, field tests, innovative tools and approaches for Indian forest management were developed.
- ▶▶ Promotion of bio-briquettes in Sikkim, introduction of solar heating systems in Rampur and development of an agro-forestry model in Hoshangabad were some of the achievements of this programme.
- ▶▶ Forest-PLUS 2.0 comprises pilot project in three landscapes – Gaya in Bihar, Thiruvananthapuram in Kerala and Medak in Telangana.
- ▶▶ The choice of these sites was driven by the contrast in their landscapes – Bihar is a forest deficit area; Telangana is a relatively drier area where there is ample scope for community livelihood enhancement and Kerala is rich in biodiversity.

The Targets of this set are:

- ▶▶ 1,20,000 hectares of land under improved management
- ▶▶ New, inclusive economic activity worth \$12 million
- ▶▶ Measurable benefits accrued to 800,000 households
- ▶▶ Three incentive mechanisms demonstrated in managing landscapes for ecosystem services

To Achieve these Targets, the programme has three focal points of Action:

- ▶▶ Developing tools for multiple services in forests management. The tools consist innovative apps for automating forest planning processes, model forest management plans.
- ▶▶ These tools are expected to result in enhanced water flow and quality, improved livelihoods and resilience of forest-dependent communities.
- ▶▶ Developing incentive-based instruments for leveraging finance. For example, a payment mechanism where a municipality or industry would pay upstream forest communities to use water flowing down because of improved forest management.
- ▶▶ Unlocking economic opportunities for forest-dependent people by modelling and setting up conservation enterprises and mobilising investment from the private sector.

6. SCIENCE AND TECHNOLOGY

1. Economics Behind E-Vehicle Batteries

Background:

- ▶▶ Shifting gears in the transition to electric vehicles (EVs), the NITI Aayog, in May this year, proposed to ban the sale of all internal combustion engine (ICE) powered three-wheelers post March 2023. It also suggested that all new two-wheelers below 150cc sold after March 2025 should be electric.
- ▶▶ In consonance with these proposals, the Union Budget 2019-2020 announced tax incentives for early adopters. Even as the automobile industry had objected to the think-tank's proposal and called for a practical approach in framing electric vehicle-related policies, there has been the worry that EVs are still not financially viable because of various costs associated with their manufacture and use.

Cost Structures of Conventional Vehicles and Electric Vehicles:

- ▶▶ The portion of the costs of the drivetrain of EVs — the system in a motor vehicle which connects the transmission to the drive axles — in comparison to the cost of the entire vehicle is **four percentage points lower when compared to ICE vehicles**.
- ▶▶ This is **primarily due to less parts in the electric drivetrain**. However, the battery pack takes up nearly half the cost of an electric vehicle. For any meaningful reduction in the physical value of EVs, the cost of battery packs needs to reduce significantly.

Components of A Battery Pack and How Much Do They Cost?

- ▶▶ The predominant battery chemistry used in EVs is lithium-ion batteries (Li-ion). No new technologies are on the horizon for immediate commercial usage.
- ▶▶ The cost of the materials or key-components of the battery, namely the cathode, anode, electrolyte, separator, among others, contribute the most (60%) to the total cost. Labour charges, overheads and profit margins account for the rest.
- ▶▶ Labour is a relatively minuscule component of the overall cost. Any reduction in the cost of the battery pack will have to come from a reduction in materials cost or the manufacturing overhead. The price of these battery packs has consistently fallen over the past few years. This decrease is in part due to technological improvements, economies of scale and increased demand for lithium-ion batteries. Fierce competition between major manufacturers has also been instrumental in bringing down prices.
- ▶▶ Given that raw materials account for 60% of the cost of the battery pack, the room for further cost reduction is rather limited.

Where Does India Stand on EV Adoption?

- ▶▶ In India, EV adoption will be driven by two-wheelers rather than cars in high numbers on because India's mobility market is driven more by two wheelers. According to the NITI Aayog, 79% of vehicles on Indian roads are two-wheelers.
- ▶▶ Three-wheelers and cars that cost less than ₹10 lakh account for 4% and 12% of the vehicle population, respectively.
- ▶▶ Two-wheelers will also need smaller batteries when compared to cars and hence the overall affordable cost.
- ▶▶ India needs to manufacture Li-ion cells in-house. Now, cells are imported and "assembled" into batteries. Setting up a Li-ion manufacturing unit requires high capital expenditure. But battery manufacturing in India is expected to grow as electric vehicles grow.

Are EV Vehicles Completely Environment Friendly?

- ▶▶ In conventional ICEs, petrol or diesel fuels the engine. However, in EVs, batteries are not the fuel; electrons supplied by the battery fuel the vehicle. The battery is a device that stores electrons/energy which is sourced from electricity.
- ▶▶ Presently, most of India's electricity is generated using conventional sources. In 2018-19, over 90% of India's electricity was generated from conventional sources, including coal, and around 10% was produced from renewable sources such as solar, wind and biomass. While the rate of electricity generated from renewable sources has increased over the years, more needs to be done for their adoption. This is because the EV-charging infrastructure needs to be powered through renewable sources to make it truly sustainable.

2. Asteroid Impact Deflection Assessment (AIDA)

Why in News?

- ▶▶ During September 11-13, asteroid researchers and spacecraft engineers from around the world will gather in Rome to discuss the progress of the mission called **Asteroid Impact Deflection Assessment (AIDA)**, an ambitious double-spacecraft mission to deflect an asteroid in space.

Background:

- ▶▶ Among all the causes that will eventually cause the extinction of life on Earth, an asteroid hit is widely acknowledged as one of the likeliest. Over the years, scientists have suggested different ways to ward off such a hit, such as blowing up the asteroid before it reaches Earth, or deflecting it off its Earth-bound course by hitting it with a spacecraft. Now, scientists have embarked on a plan to test their expertise with the second of these two methods.

The Mission:

- ▶▶ AIDA is a dual-mission concept, involving two independent spacecraft NASA's Double Asteroid Redirection Test (DART), and European Space Agency's Asteroid Impact Mission (AIM).
- ▶▶ It will be the first demonstration of the kinetic impact technique to change the motion of an asteroid in space.
- ▶▶ Kinetic Impact technique is one of the technologies for preventing the Earth from a hazardous asteroid.
- ▶▶ AIDA's primary objective is to demonstrate, and to measure the effects of, a kinetic impact on a small asteroid.
- ▶▶ It targets binary near-Earth asteroid Didymos, which pose a hazard to earth.
- ▶▶ DART spacecraft will cause deliberately crashing itself into the asteroid at a speed of approximately 6 km/s.
- ▶▶ The collision will change the speed of the asteroid in its orbit around the main body by a fraction of one percent, enough to be measured using telescopes on Earth.

Components of The Mission:

- ▶▶ NASA is building the Double Asteroid Impact Test (DART) spacecraft for launch in summer 2021. It is planned to collide with the target at 6.6 km/s in September 2022.
- ▶▶ Flying along with DART will be an **Italian-made miniature CubeSat, called LICIA Cube**, to record the moment of impact.
- ▶▶ ESA's contribution is a mission called **Hera**, which will perform a close-up survey of the post-impact asteroid, acquiring measurements such as the asteroid's mass and detailed crater shape.
- ▶▶ Hera will also deploy a pair of CubeSats for close-up asteroid surveys and the very first radar probe of an asteroid. All this would allow researchers to model the efficiency of the collision. This can help turn this experiment into a technique that could be repeated, as needed, in the event of a real threat.

3. Ethanol Blended Petrol (EBP) Programme

Why in News?

- ▶▶ The Cabinet Committee on Economic Affairs has given its approval for fixing higher ethanol price derived from different raw materials under the EBP Programme for the forthcoming sugar season 2019-20 during ethanol supply year from 1st December 2019 to 30th November 2020.

What is Ethanol?

- ▶▶ Ethanol is basically alcohol of 99%-plus purity, which can be used for blending with petrol. The normal rectified spirit used for potable purposes has only 95% alcohol content.
- ▶▶ Both ethanol (also called anhydrous alcohol) and rectified spirit are produced mainly from molasses, a by-product of sugar manufacture.
- ▶▶ Mills typically crush cane with a total fermentable sugars (TFS) content of about 14%. Much of this TFS — sucrose plus so-called reducing sugars (glucose and fructose) — gets crystallised into sugar.
- ▶▶ The un-crystallised, non-recoverable part goes into what is called ‘C’ molasses. The latter, constituting roughly 4.5% of the cane, has a TFS of 40%. Every 100 kg of TFS, in turn, yields 60 litres of ethanol. Thus, from one tonne of cane, mills can produce 115 kg of sugar (at 11.5% recovery) and 45 kg of molasses (18 kg TFS) that gives 10.8 litres of ethanol.
- ▶▶ But rather than produce sugar, mills can also ferment the entire 14% TFS in the cane. In that event, they would end up making 84 litres of ethanol and zero kg of sugar. In between these two extreme cases, there are intermediate options as well, where the cane juice does not have to be crystallised right till the final ‘C’ molasses stage.
- ▶▶ The molasses can, instead, be diverted after the earlier ‘A’ and ‘B’ stages of sugar crystal formation. Mills, then, would produce some sugar, as opposed to fermenting the whole sugarcane juice into ethanol. If ethanol is manufactured using ‘B’ heavy molasses (7.25% of cane and with TFS of 50%), around 21.75 litres will get produced along with 95 kg of sugar from every 1 tonne of cane.

About Ethanol Blended Petrol Programme:

- ▶▶ Ethanol Blended Petrol programme was launched in 2003 on a pilot basis and has been subsequently extended to all states & UTs except Andaman & Nicobar and Lakshadweep Islands. The programme sought to promote the use of alternative and environment friendly fuels and to reduce import dependency for energy requirements.
- ▶▶ The government has been notifying the administered price of ethanol since 2014.
- ▶▶ India has set a target of 10 percent ethanol blending in petrol by 2022.
- ▶▶ Government has notified administered price of ethanol since 2014. For the first time during 2018, differential price of ethanol based on raw material utilized for ethanol production was announced by the Government. These decisions have significantly improved the supply of ethanol thereby ethanol procurement by Public Sector OMCs has increased from 38 crore litre in ethanol supply year 2013-14 to estimate over 200 crore litre in 2018-19.

- ▶▶ With a view to limit sugar production in the Country and to increase domestic production of ethanol, Government has taken multiple steps including, allowing diversion of B heavy molasses and sugarcane juice for ethanol production.
- ▶▶ As the ex-mill price of sugar and conversion cost have undergone changes, there is a need to revise the ex-mill price of ethanol derived from different sugarcane based raw materials.
- ▶▶ There is also a demand from the industry to include sugar and sugar syrup for ethanol production to help in solving the problem of inventory and liquidity with the sugar mills.

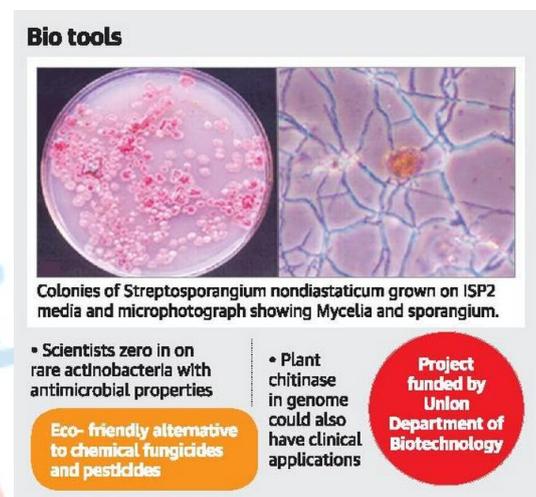
4. Genome Sequencing of Bacteria to Help with Biocontrol in Farming

Why in News?

- ▶▶ Scientists in Kerala have completed the whole genome sequencing of a Rare Bacterium capable of producing antifungal and insecticidal compounds.
- ▶▶ This has opened up the potential to develop a new line of products for Biocontrol applications in Agriculture.

Obtained from soil:

- ▶▶ Researchers isolated some strains of actinomycetes (a kind of hairy bacteria) from the forest soils of the Neyyar wildlife sanctuary, one of the 12 mega diversity centres in the world.
- ▶▶ One of the isolates was identified as *Streptosporangium nondiastaticum* reported to have antimicrobial properties.



Helping Biocontrol:

- ▶▶ Bioinformatics analysis showed that the genome contained a plant chitinase, an enzyme capable of degrading fungi and insect exoskeleton.
- ▶▶ The scientists have cloned the gene and engineered the recombinant protein.
- ▶▶ The strain can produce metabolites that are toxic to plant pathogens, making it a candidate for biocontrol applications.
- ▶▶ Across the world, fungal phytopathogens cause significant agricultural crop loss, both in farmlands and post-harvest storage conditions.
- ▶▶ The use of micro-organisms to control phytopathogens and pests offers an important alternative to chemical fungicides and pesticides which result in environmental pollution and development of resistance in fungal pathogens.

5. India Declared Avian Influenza Free

Context:

- ▶▶ OIE-World Organisation for Animal Health declared the country free of the virus, the Centre's Animal Husbandry Department informed the states in a letter.

Background:

- ▶▶ In the last two years, outbreaks of the disease had been reported from several places, including Budhibara, Patharaganja, Malud, Brahmandeo, Kanheipur, Epinga and Nandala in Odisha, Goraho, Mubarakchak and Babura in Bihar and Fazil Khuthari in Jharkhand.
- ▶▶ The status will last only till another outbreak is reported.
- ▶▶ **India was last declared free of the disease in 2017.**

What is Avian Influenza?

- ▶▶ Avian influenza refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses.
- ▶▶ These viruses occur naturally among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species.
- ▶▶ Avian flu viruses do not normally infect humans.
- ▶▶ However, sporadic human infections with avian flu viruses have occurred. The links below offer more information about avian influenza.

Brief Scenario on Outbreaks of Avian Influenza in India.

- ▶▶ The trend of infection of Avian Influenza has changed. Initially, in India, the disease was being reported mainly in backyard poultry in vicinity of migratory birds/ water bodies particularly in North-Eastern States and West Bengal.
- ▶▶ The main species affected used to be chicken.
- ▶▶ The ducks used to be reservoir of the virus, harbouring the infection without showing the clinical signs/ disease.
- ▶▶ However, the trend of occurrence of AI changed since 2011, gradually and most of the occurrences were reported from the poultry farms of central government such as DADF, ICAR and State Governments.

Possible reasons for occurrence of Avian Influenza:

- ▶▶ A number of factors contribute to make India vulnerable to primary incursion of Avian Influenza into the country.
- ▶▶ These include high density of poultry population;
 - ❖ Mixed Rearing of chicken and ducks;
 - ❖ Three flyways of migratory birds passing through the country;

- ❖ Illegal Movement of poultry and poultry products from infected areas into the country;
- ❖ Presence of large number of water-bodies visited by migratory / wild birds;
- ❖ Inadequate bio-security in backyard rearing;
- ❖ Inadequate sanitation of wholesale and retail poultry markets;
- ❖ Endemic Situation of Avian Influenza in the neighbouring countries and
- ❖ **Porous Nature of the Border.**

What is H5N1?

- ▶▶ H5N1 is a type of influenza virus that causes a highly infectious, severe respiratory disease in birds called avian influenza (or "bird flu").
- ▶▶ Human cases of H5N1 avian influenza occur occasionally, but it is difficult to transmit the infection from person to person.
- ▶▶ When people do become infected, the mortality rate is about 60%.

How does H5N1 influenza spread to people?

- ▶▶ Almost all cases of H5N1 infection in people have been associated with close contact with infected live or dead birds, or H5N1-contaminated environments. The virus does not infect humans easily, and spread from person to person appears to be unusual. There is no evidence that the disease can be spread to people through properly prepared and thoroughly cooked food.

Why is there so much concern about H5N1 influenza?

- ▶▶ H5N1 infection in humans can cause severe disease and has a high mortality rate.
- ▶▶ If the H5N1 virus were to change and become easily transmissible from person to person while retaining its capacity to cause severe disease, the consequences for public health could be very serious.

Why might the H5N1 influenza Virus Change?

- ▶▶ Influenza viruses constantly undergo genetic changes. It would be a cause for concern, should the H5N1 virus become more easily transmissible among humans.

What are the Symptoms of H5N1 Avian Influenza in Humans?

- ▶▶ The symptoms of H5N1 infection may include fever (often high fever, > 38°C) and malaise, cough, sore throat, and muscle aches. Other early symptoms may include abdominal pain, chest pain and diarrhoea.
- ▶▶ The infection may progress quickly to severe respiratory illness (for example, difficulty breathing or shortness of breath, pneumonia, Acute Respiratory Distress Syndrome) and neurologic changes (altered mental status or seizures).

Is a vaccine available to prevent human infection with H5N1avian Influenza?

- ▶▶ Candidate vaccines to prevent H5N1 infection have been developed, but they are not ready for widespread use.

What is the WHO response to H5N1 Influenza?

- ▶▶ WHO is working with countries to help them detect and manage cases of H5N1 infection in humans when they occur.
- ▶▶ WHO collaborates with global health partners and agencies, including the World Organisation for Animal Health (OIE), and the Food and Agriculture Organization of the United Nations (FAO), to control and prevent the spread of animal diseases.
- ▶▶ WHO's global laboratory system, the Global Influenza Surveillance and Response System (GISRS), identifies and monitors strains of circulating influenza viruses, and provides advice to countries on their risk to human health and available treatment or Control Measures.

World Organisation for Animal Health (OIE):

- ▶▶ The OIE is the intergovernmental organisation responsible for improving animal health worldwide. It is recognised as a reference organisation by the World Trade Organization (WTO) and in 2018 has a total of 182 Member Countries.
- ▶▶ The OIE maintains permanent relations with nearly 75 other international and regional organisations and has Regional and sub-regional Offices on every continent.

6. ISRO's Vikram Lander Is Lost, But This Hardly Matters

Context:

- ▶▶ The Indian Space Research Organisation lost contact with the Chandrayaan-2 lander Vikram just moments before it was to land on near the south pole of the Moon. The **Chandrayaan-2 mission, however, is far from being a failure.**

Why the Missing Lander Hardly Matters?

- ▶▶ Though the expected soft-landing of the Vikram Lander was not accomplished, the Chandrayaan-2 mission is far from over. In fact, **in science terms, very little has been lost.** But in terms of optics, it is definitely a huge setback for the Indian Space Research Organisation (ISRO).
- ▶▶ The lander had begun its descent normally and, for the first 13 minutes, decelerated as per the plan. But after that, the deceleration does not seem to have gone ahead as per the requirement.

- ▶▶ The most possible consequence of this scenario is that **the lander went on to crash-land on the moon's surface with a speed greater than was required for a safe landing**. But in the most optimistic case, **it could only be a problem of communication failure**. It is possible that Vikram landed on the moon as planned, but midway through its journey stopped communicating with the ground station. The chances of this having happened are extremely slim, considering that the graph on the screens of the control room depicting the expected and actual deceleration did begin to diverge after 13 minutes from the descent. So, the speed was noticed to be larger than required even before communication was lost.
- ▶▶ **It is possible to re-establish contact** with an object in space with which communication has been lost. It has happened before, even with ISRO. Some years ago, one of the satellites had lost contact with a ground control, and after a lot of effort and several manoeuvres, it was re-established. But that satellite was in orbit and not hurtling towards a planetary body at great speeds.
- ▶▶ But the failure to make a soft-landing does not bring the Chandrayaan-2 mission to a close. Far from it.
- ▶▶ The maximum amount of science in the mission is supposed to be done by the instruments onboard the Orbiter which is in perfect health and communicating with the ground station. This includes the search for further evidence of water on the moon, and an assessment of its relative abundance.
- ▶▶ The lander and rover were supposed to have a lifespan of only 14 days, and their science output would have been limited. The two instruments on the Pragyaan Rover were supposed to collect information to assess the elemental composition of the moon's surface and determine the relative abundance of different elements near the landing site.
- ▶▶ The lander had three instruments which were meant to study the lunar atmosphere, its temperature gradient and thermal conductivity. One of the instruments was also supposed to measure seismic activity on the moon's surface near the site of landing.

7. Classification of Influenza as H5N1, H1N1 and Other Kinds

Why in News?

- ▶▶ On September 3, India was again declared free of the H5N1 virus, which causes avian influenza or bird flu, the earlier such declaration having come in 2017. In the last two years, there had been outbreaks of the disease in Odisha, Bihar, and Jharkhand.

- ▶▶ According to the WHO, influenza is known to affect 5-10% of adults and 20-30% of children across the world every year. The many kinds of viruses causing influenza are identified by a standard nomenclature issued by the World Health Organization (WHO) in 1980.

The Four Influenza Types:

- ▶▶ The WHO defines influenza as “a contagious, acute respiratory illness caused by influenza viruses, usually influenza A or B subtypes.” The influenza virus, which causes the illness, is of four types: A, B, C, and D. According to the US Centers for Disease Control and Prevention (CDC), only the influenza A and B viruses are known to cause epidemics.
- ▶▶ The C type virus usually causes mild respiratory illness, while the D type virus typically affects cattle and is not known to infect humans. The disease is often confused with a heavy cold, which has the same symptoms – headaches, runny nose, cough, and muscle pains.
- ▶▶ According to WHO, influenza is known to kill 6.5 lakh people every year, especially affecting young children, the elderly, pregnant women, or those with vulnerable immune systems.

The Subtypes:

- ▶▶ Only the influenza A virus is divided into subtypes. The subtype is based on two proteins on the surface of the virus, hemagglutinin (H) and neuraminidase (N).
- ▶▶ Hemagglutinin has 18 further subtypes while neuraminidase has 11. They are named from H1 to H18 and N1 to N11 in a sequential system that applies uniformly to influenza viruses from all sources. According to the WHO, “Humans can be infected with avian, swine and other zoonotic influenza viruses, such as avian influenza virus subtypes A(H5N1), A(H7N9), and A(H9N2) and swine influenza virus subtypes A(H1N1), A(H1N2) and A(H3N2).” Novel strains of the H1N1 virus have appeared in 1918, 1957, 1968, and most recently in 2009 during the global bird flu outbreak, which the WHO designated a pandemic. The 2009 strain is now known to have replaced the previous strains.

8. Eradicating Malaria By 2050

Why in News?

- ▶▶ A report in The Lancet concludes that it is possible to eradicate malaria as early as 2050 – or within a generation – with the right strategies and sufficient funding. The report, published by The Lancet Commission on malaria eradication, used existing evidence with new epidemiological and financial analyses.

Global Malaria Trends:

- ▶▶ Since 2000, global malaria incidence and death rates declined by 36 and 60 per cent, respectively.
- ▶▶ Today, more than half of the world's countries are malaria-free. However, there are over 200 million cases of malaria reported each year, claiming nearly half a million lives.
- ▶▶ However, this progress hangs in the balance.
- ▶▶ Despite global efforts, there are over 200 million cases of malaria reported around the world each year, claiming the lives of nearly half a million individuals.
- ▶▶ Malaria cases are rising in 55 countries in Africa, Asia and Latin America.
- ▶▶ There is also inequity, with 29 countries (27 in Africa) accounting for the large majority of new cases and 85 per cent of global deaths in 2017.
- ▶▶ Two countries (Nigeria and Democratic Republic of Congo) account for 36 per cent of global cases. On the other hand, 38 countries had incidences of fewer than ten cases per 1,000 population in 2017 and reported just 5% of total malaria deaths.

Modelling A World Free from Malaria:

- ▶▶ The report used new modelling to estimate plausible scenarios for the distribution and intensity of malaria in 2030 and 2050. Analyses indicate that socioeconomic and environmental trends, together with improved coverage of malaria interventions, will create a world in 2050 with malaria persisting in pockets of low-level transmission in equatorial Africa. To achieve eradication by 2050, the **Report Identifies three ways to accelerate the decline in Malaria Cases:**

1. The world must improve implementation of malaria control programmes.
2. They must develop and roll out innovative new tools to overcome the biological challenges to eradication.
3. Malaria-Endemic Countries and Donors must Provide the Financial Investment Needed.

About Malaria:

- ▶▶ Malaria is a disease caused by **Plasmodium Parasites**.
- ▶▶ These are spread from person to person by the bite of **Female Anopheles Mosquitoes** in search of a blood meal.
- ▶▶ Once infected, people become very sick with a severe fever and shaking chills.
- ▶▶ The parasites infect cells in the liver and red blood cells, and other symptoms include anaemia. Eventually the disease takes a toll on the whole body, including the brain, and can be fatal. Around 435,000 people - mostly children - die from malaria each year.

9. National Animal Disease Control Program

Context:

- ▶▶ In a key initiative aimed at doubling farmers income, Prime Minister Narendra Modi will be launching the National Animal Disease Control Programme for eradicating Foot and Mouth Disease and Brucellosis in livestock.

Funding:

- ▶▶ The project, which will cost ₹12,652 crores for a period of five years till 2024, will be funded entirely by the government. The programme, to be launched in Mathura, **aims to control the livestock diseases by 2025 and eradicate these by 2030.**

Aim:

- ▶▶ The programme aims at vaccinating over 500 million livestock including cattle, buffalo, sheep, goats and pigs against the FMD. The programme also aims at vaccinating 36 million female bovine calves annually in its fight against the brucellosis disease.

Foot and Mouth Disease (FMD) Control Programme:

- ▶▶ It envisages 100% vaccination coverage of cattle, buffaloes, sheep, goats and pigs at six-months interval in the entire country. Further, animals would be identified using unique animal identification ear tags. The programme also includes de-worming of the targeted population of livestock twice a year.

Brucellosis Control Programme:

- ▶▶ It envisages 100% vaccination coverage of female cattle and buffalo calves (4-8 months of age) once in a life time.

Stats:

- ▶▶ In India, livestock **contributes over 4%** to the country's total GDP. As per estimates of the Central Statistics Office (CSO), the value of output from livestock and fisheries is estimated to be close to Rs 5 lakh crore.

Livestock in India:

- ▶▶ India has the privilege of having the largest population of livestock in the world. India's milk production is highest in the world. And yet, the sector has been neglected for years.

Issue with foot-and-mouth disease (FMD) and brucellosis.

- ▶▶ It is actually the presence of FMD in India that has stopped us from realising the true potential of this sector.
- ▶▶ Trade barriers are put using this as an excuse, while totally putting aside the fact the OIE (The World Organisation for Animal Health) has endorsed our FMD vaccination programme.

- ▶▶ While Andhra Pradesh and Telangana have reported no outbreak of FMD in the last few years, states like UP, Maharashtra and Punjab need extra focus as major trade emanates from there.

What is Foot and mouth disease (FMD):

- ▶▶ Foot and mouth disease (FMD) is a severe, highly contagious viral disease of livestock that has a significant economic impact. The disease affects cattle, swine, sheep, goats and other cloven-hoofed ruminants.
- ▶▶ Intensively reared animals are more susceptible to the disease than traditional breeds. The disease is rarely fatal in adult animals, but there is often high mortality in young animals due to myocarditis or, when the dam is infected by the disease, lack of milk.

Importance of Livestock to Indian Farmer:

- ▶▶ In India, 75% of the poor control the country's livestock, which in turn becomes a major source of their income.
- ▶▶ The direct losses to a farmer due to these diseases comes from a loss in milk production and reduction in the working ability of the animals.

▶▶ Export issue

1. The bigger economic losses, however, are the **non-acceptance of our milk and milk products, meat and its products in certain parts of the world**, making the value realisation of our agri exports not at par with countries like Brazil, Australia, New Zealand and so on. Hence, it's important that we as a nation give top priority for the control, prevention and eradication of this disease.

▶▶ Income:

1. Livestock is a source of subsidiary income for many families in India especially the resource poor who maintain few heads of animals.
2. Cows and buffaloes if in milk will provide regular income to the livestock farmers through sale of milk.
3. Animals like sheep and goat serve as sources of income during emergencies to meet exigencies like marriages, treatment of sick persons, children education, repair of houses etc.
4. The animals also serve as moving banks and assets which provide economic security to the owners.

▶▶ Employment:

1. A large number of people in India being less literate and unskilled depend upon agriculture for their livelihoods.

2. But agriculture being seasonal in nature could provide employment for a maximum of 180 days in a year.
3. The land less and less land people depend upon livestock for utilizing their labour during lean agricultural season.

▶▶ **Food:**

1. The livestock products such as milk, meat and eggs are an important source of animal protein to the members of the livestock owners.
2. The per capita availability of milk is around 355 g / day; eggs is 69 / annum;

▶▶ **Social security:**

1. The animals offer social security to the owners in terms of their status in the society.
2. The families especially the landless which own animals are better placed than those who do not. Gifting of animals during marriages is a very common phenomenon in different parts of the country.
3. Rearing of animals is a part of the Indian culture. Animals are used for various socio religious functions.
4. Cows for house warming ceremonies; rams, bucks and chicken for sacrifice during festive seasons; Bulls and Cows are worshipped during various religious functions. Many owners develop attachment to their animals.

▶▶ **Draft:**

1. The bullocks are the back bone of Indian agriculture. The farmers especially the marginal and small depend upon bullocks for ploughing, carting and transport of both inputs and outputs.

▶▶ **Dung:**

1. In rural areas dung is used for several purposes which include fuel (dung cakes), fertilizer (farm yard manure), and plastering material (poor man's cement).

10. Water Found for First Time on Potentially Habitable Planet

Why in News?

- ▶▶ Astronomers have for the first-time discovered water in the atmosphere of an exoplanet with Earth-like temperatures that could support life.

Highlights:

- ▶▶ K2-18b is the only planet orbiting a star outside the Solar System known to have both water and temperatures that could be potentially habitable.
- ▶▶ It is known to have both water and temperatures that could be potentially habitable.

- ▶▶ The discovery is the first successful atmospheric detection for an exoplanet orbiting in its star's 'habitable zone', at a distance where water can exist in liquid form, they said.
- ▶▶ The team used archive data from 2016 and 2017 captured by the ESA/NASA Hubble Space Telescope and developed open-source algorithms to analyse the starlight filtered through K2-18b's atmosphere.
- ▶▶ The results revealed the molecular signature of water vapour, also indicating the presence of hydrogen and helium in the planet's atmosphere. K2-18b's size and surface gravity are much larger than Earth's. Its radiation environment, too, maybe hostile.
- ▶▶ They believe that other molecules including nitrogen and methane may be present but, with current observations, they remain undetectable.

K2-18b:

- ▶▶ K2-18b was discovered in 2015 and is one of hundreds of super-Earths — planets with a mass between Earth and Neptune — found by NASA's Kepler spacecraft.
- ▶▶ Exoplanet K2-18b is eight times the mass of Earth.
- ▶▶ The planet orbits the cool dwarf star K2-18, which is about 110 light years from Earth in the Leo constellation. However, the researchers said, "K2-18b is not 'Earth 2.0' as it is significantly heavier and has a different atmospheric composition.
- ▶▶ They also said that further studies are required to estimate cloud coverage and the percentage of atmospheric water present.

11.IIT Madras finds an eco-friendly way to degrade plastics

Why in News?

- ▶▶ Recently the journal ACS Sustainable Chemistry & Engineering has published the work of the team from the Department of Chemistry at IIT Madras who were able to degrade polypropylene in glucose solution.

Background:

- ▶▶ Three years ago, researchers from the Indian Institute of Technology (IIT) Madras observed silver slowly dissolving in a glucose solution when heated to 70-degree C. Now, the team has demonstrated an environment-friendly strategy to degrade the chemically inert and physically stable plastic fluoropolymer — polytetrafluoroethylene (PTFE) of which Teflon is made.

Process Involved:

- ▶▶ In order to degrade the fluoropolymer into molecules is continuous stirring of it in water containing 1,000 ppm glucose and metal ions for about 15 days at 70-degree C.

- ▶▶ The researchers used a magnetic stirrer coated with Teflon to continuously stir for several days the water mixed with glucose in a glass beaker containing a gold foil.
- ▶▶ The team tested Teflon in different forms – pellets, tapes and plates. They repeated the experiment using a Teflon beaker and tried different metals too and still got the same result each time. The only difference was that the particles did not show bright red luminescence when copper, silver and iron were used instead of gold.
- ▶▶ Glucose added to water first leaches out ions from the metal surface. When the PTFE-coated magnetic pellet is continuously rotated, triboelectric charges get generated on the pellet. The PTFE gets negatively charged.
- ▶▶ The negative charge on the PTFE surface attracts the metal ions that have been leached out. The interaction between the metal ions and PTFE results in metal-polymer bonding, causing the carbon-carbon bonds to destabilise. This eventually results in PTFEs degrading into molecules.
- ▶▶ No such degradation of PTFE was noticed in the absence of stirring, glucose or metal ions. The rate of degradation gets reduced at room temperature.
- ▶▶ The amount of triboelectric degradation depends on the amount of glucose dissolved in water. As the amount of glucose in water increases more metal ions get leached leading to more interaction between PTFE and the metal ions. As more metal ions bind to PTFE, there is enhanced PTFE degradation.

Spin-off Benefits:

- ▶▶ According to the paper, similar chemistry can possibly lead to micro and nano-plastics in food during cooking as many modern cookware are coated with Teflon.

12. Lunar Reconnaissance Orbiter (LRO)

Why in News?

- ▶▶ ISRO'S attempts to figure out what happened to Chandrayaan-2's Vikram will get a boost when NASA's Lunar Reconnaissance Orbiter (LRO) flies over the lander's landing site on the Moon.
- ▶▶ NASA will share any before and after flyover imagery of the area around the targeted Chandrayaan-2 Vikram lander landing site.

Lunar Reconnaissance Orbiter (LRO):

- ▶▶ The Lunar Reconnaissance Orbiter and Lunar Crater Observation and Sensing Satellite missions began on June 18, 2009. It is a robotic spacecraft currently orbiting the Moon.

- ▶▶ It studies the Moon's surface, clicks pictures, and collects data that help in figuring out the presence and possibility of water ice and other resources on the Moon, as well as plan future missions to it.
- ▶▶ The primary mission of the LRO, managed by NASA's Goddard Space Flight Center, located in Greenbelt, Maryland, was to measure the entire lunar surface to create a high-resolution 3-D map of the Moon.
- ▶▶ The map with ~50-centimeter resolution images would aid in the planning of future robotic and crewed missions.
- ▶▶ In addition, LRO would map the Polar Regions and search for the presence of water ice.

The Mission:

- ▶▶ The mission has provided technical innovations and made surprising discoveries that have changed our view of the Moon. The instruments on board the spacecraft return global data, such as day-night temperature maps, a global geodetic grid, high resolution color imaging and the moon's UV albedo. It is estimated that the LRO has fuel enough to stay on its mission for at least six more years.

Achievements of LRO:

- ▶▶ Some of LRO's technical innovations include the first global thermal mapping of a planetary body covering a full range of local times and seasons.
- ▶▶ It carries the first bi-static radar imaging measurements from Earth to a planetary orbiter.
- ▶▶ It has provided more than five years of laser altimetry measurements yielding more than 8 billion topographic points, better than any other object in the Solar System.
- ▶▶ On March 15, 2011, LRO provided more than 192 terabytes of data from its primary mission to its Planetary Data System, or PDS, to make the information available to researchers, students, media, and the general public.

13. Transgenic Mosquitoes Transfer Genes to Native Mosquito Species

Why in News?

- ▶▶ Genes from genetically-modified *Aedes aegypti* mosquito were found to have been transferred to naturally-occurring *A. aegypti* mosquito population in three areas in Brazil where transgenic mosquitoes were released.

Transgenic Mosquitoes:

- ▶▶ A transgenic Mosquito is one that contains a gene or genes which have been artificially inserted instead of the mosquito acquiring them through reproduction.
- ▶▶ Transgenic strains of mosquitoes were developed to
- ▶▶ Replace or suppress Wild Vector Populations

- ▶▶ Reduce Transmission
- ▶▶ Deliver Public Health gains are an Imminent Prospect.

Background:

- ▶▶ About 4,50,000 transgenic male mosquitoes were released each week for 27 months (June 2013 to September 2015) in three areas in Brazil.
- ▶▶ Transgenic mosquitoes (TMs) were developed to minimize/eliminate the mosquito borne diseases.
- ▶▶ Genetic analysis of naturally occurring mosquitoes were done prior to the release and at six, 12, and 27-30 months after the releases.

Highlights:

- ▶▶ *A. aegypti* mosquitoes are responsible for transmitting dengue, chikungunya and Zika virus. Researchers from Yale University studied 347 naturally-occurring *aegypti* mosquitoes for transfer of genes from the transgenic insects.
- ▶▶ The transgenic strains can be distinguished from naturally-occurring mosquitoes by using fluorescent lights and filters.
- ▶▶ They found that some transgenic genes were found in 10-60% of naturally-occurring mosquitoes. Also, the naturally occurring *aegypti* mosquitoes carrying some genes of the transgenic mosquitoes were able to reproduce in nature and spread to neighbouring areas 4 km away.

Issue:

- ▶▶ As per claims made by the British company Oxitec Ltd, which had developed the technology and field-tested it in several countries,
- ▶▶ The genetic strategy employed to control *aegypti* population known as RIDL (the Release of Insects carrying Dominant Lethal genes) is supposed to only reduce the population of the naturally occurring *A. aegypti* mosquitoes and not affect or alter their genetics.
- ▶▶ Also, offspring are not supposed to grow to adult mosquitoes and reproduce.
- ▶▶ The claim was that genes from the release strain would not get into the general population because offspring would die. But that did not happen.
- ▶▶ The genetic strategy works on the premise that the transgenic male mosquitoes released frequently in large numbers would compete with the naturally occurring male mosquitoes to mate with the females. Offspring from the mating of transgenic male mosquito and naturally occurring female mosquito do not survive to the adult stage.
- ▶▶ This is because tetracycline drug, which prevents the dominant lethal gene from producing the lethal protein during rearing in labs, is not present in sufficient quantity in nature.

- ▶▶ In the absence of tetracycline, there is overproduction of the lethal protein causing the larvae to die.
- ▶▶ At present, it is unclear if the presence of transgenic mosquito genes in the natural population will affect the disease transmission capacity or make mosquito control efforts more difficult.

14. Controlled Human Infection Model (CHIM)

Why in News?

- ▶▶ The Department of Biotechnology (DBT) is close to finalising three projects involving Indian and European scientists to develop new influenza vaccines using a Controlled Human Infection Model (CHIM).

CHIM:

- ▶▶ In a Controlled Human Infection Model (CHIM) study, a well-characterized strain of an infectious agent is given to carefully select adult volunteers.
- ▶▶ This is done in order to better understand human diseases, how they spread, and find new ways to prevent and treat them.
- ▶▶ These studies play a vital role in helping to develop vaccines for infectious diseases.
- ▶▶ Such studies, which are being employed in vaccine development in the US, the UK and Kenya, are being considered in India.

Significance:

- ▶▶ A CHIM approach will speed up the process whereby scientists can quantify whether potential vaccine candidates can be effective in people and identify the factors that determine why some vaccinated people fall sick and others do not.
- ▶▶ CHIM models help vaccine-makers decide whether they should go ahead with investing in expensive trials.

Concerns:

- ▶▶ The risk in such trials is that intentionally infecting healthy people with an active virus and causing them to be sick is against medical ethics.
- ▶▶ It also involves putting human lives in danger.

15. Chandrayaan-2 and the Approaching Lunar Night

Why in News:

- ▶▶ The failure of soft landing of the lander Vikram of Chandrayaan-2 mission and the follow up efforts by ISRO to retrieve the lander is about to yield no results as lunar night is about to approach.

About:

- ▶▶ India's Geosynchronous Satellite Launch Vehicle, GSLV MkIII-M1 successfully launched the 3,840-kg Chandrayaan-2 spacecraft into the Earth's orbit on July 22.
- ▶▶ The spacecraft successfully entered the lunar orbit on August 20 by performing Lunar Orbit Insertion (LOI) manoeuvre, and on September 2, 'Vikram' successfully separated from the orbiter.
- ▶▶ But Lander Vikram, with rover Pragyan housed inside it, lost communication with the ground station during its final descent, just 2.1 kms above the lunar surface, minutes before the planned touch-down on the Moon.
- ▶▶ Since then ISRO has been trying to establish contact with the lander, though the hopes kept fading with the lunar night phase approaching.

Why we can't retrieve Vikram During Lunar Night:

- ▶▶ The lander, designed to execute a soft-landing on the lunar surface, and rover have a mission life of one Lunar day, which is equivalent to 14 earth days that ends Saturday.
- ▶▶ ISRO has said once the Lunar night falls, there would be no sunlight for the lander to generate power for its working and also it was not designed to operate in the heavy cold temperature of Moon during the phase.

About Lunar Night:

- ▶▶ A lunar day is the period of time for Earth's Moon to complete one rotation on its axis with respect to the Sun.
- ▶▶ Due to tidal locking, it is also the time the Moon takes to complete one orbit around Earth and return to the same phase. A lunar month is the period between two new moons. A lunar month lasts about 29.5 solar days on earth.
- ▶▶ The average lunar month is 27.3 earth days so half that, the lunar day is on average 13.65 earth days long and so is the Lunar night approximately.

About Chandrayaan-2 Mission:

- ▶▶ Chandrayaan-2 was launched using a Geosynchronous Satellite Launch Vehicle Mk III (GSLV-F10).
- ▶▶ The spacecraft (orbiter) weighs around 3,290 kg and it will orbit around Moon and perform objectives of remote sensing the Moon.
- ▶▶ It has been developed indigenously by ISRO. It consists of Orbiter, Lander (**Vikram**) and Rover (**Pragyan**) configuration. In this mission, ISRO has attempted for the first time to land a rover on moon's south pole.

16. Methane-Powered Rocket Engine

Why in News?

- ▶▶ ISRO is planning to develop methane-powered rocket engines.

LOX Methane Engines:

- ▶▶ The space agency is developing two 'LOx methane' engines (liquid oxygen oxidiser and methane fuel) engines.
- ▶▶ One of the two projects is trying to convert the existing cryogenic engine, which uses liquid hydrogen for fuel, into a LOx methane engine.
- ▶▶ The other is a smaller engine of 3 tonnes thrust, which will feature an electric motor.
- ▶▶ These are being developed at ISRO's Liquid Propulsion Systems Centre at Trivandrum.
- ▶▶ ISRO currently prefers to use a fuel called Unsymmetrical Di-Methyl Hydrazine, along with Nitrogen tetroxide for oxidizer, in its liquid fuel (Vikas) engines, which are used in the lower stages of its rockets, PSLV and GSLV.

Why Methane?

- ▶▶ Di-Methyl Hydrazine like all hydrazine-based fuels, is said to be highly toxic and cancer-causing.
- ▶▶ Globally, governments are keen on banning hydrazine.
- ▶▶ Besides, methane beats hydrazine on every other count.
- ▶▶ Apart from being non-toxic, it has a higher specific impulse which means one kg of the gas can lift one kg of mass for a longer time.
- ▶▶ Methane, which can be synthesized with water and carbon dioxide in space, is often described as the space fuel of the future.
- ▶▶ It is easy to store, does not leave a residue upon burning, less bulky, and, importantly, can be synthesized up in space.
- ▶▶ Methane-fired engines need an igniter to start the fire.
- ▶▶ Hydrazine fuels are hypergolic, which means they start burning on their own upon coming in contact with oxygen.

Rocket Engine Development:

- ▶▶ Mumbai-based start-up Manastu Space is developing a propulsion system that will use Hydrogen peroxide as fuel. Currently, Manastu's engines are meant for steering satellites in orbit but they can be scaled up to power launch vehicles. According to the company, the space industry started with Hydrogen peroxide, but moved to a 'better' hydrazine. But Manastu has developed a chemical additive, which it is trying to patent — the additive will enable Hydrogen peroxide to elbow hydrazine out of the competition.

17. First Indigenous Fuel Cell System launched

Why in News?

- ▶▶ The First Indigenous Fuel Cell System launched on the Foundation Day of CSIR.

Highlights:

- ▶▶ This fuel cell system was developed by the CSIR in partnership with Indian industries under India's flagship program named "New Millennium Indian Technology Leadership Initiative (NMITLI)".
- ▶▶ Three laboratories of CSIR (at Pune, New Delhi and Karaikudi) and two private sector companies Thermax Limited (Pune) and Reliance Industries Limited (Mumbai) were involved in the development. The 5.0 kW fuel cell system generates power in a green manner using methanol/bio-methane, with heat and water as bi-products for further use.
- ▶▶ This system has an efficiency of 70%.
- ▶▶ The Fuel Cells developed are based on High Temperature Proton Exchange Membrane (HTPEM) Technology. The development is most suitable for distributed stationary power applications for small offices, commercial units, data centres, etc. where highly reliable power is essential with simultaneous requirement for air-conditioning.
- ▶▶ This system will also meet the requirement of efficient, clean and reliable backup power generator for telecom towers, remote locations and strategic applications as well.
- ▶▶ This development would replace Diesel Generating (DG) sets and help reduce India's dependence on crude oil.

18. Radioactive Cesium Technology for measuring Soil Erosion

Why in News?

- ▶▶ Indian scientists have now developed a method to measure the rate of soil erosion and associated decrease in organic content in soil by assessing levels of radioactive cesium in soil.

Radioactive Cesium Technology:

- ▶▶ Researchers at the ICAR-Indian Institute of Soil and Water Conservation, Dehradun have developed a way to monitor soil erosion and decrease in carbon content in soil by relating it with levels of radioactive cesium in soil.
- ▶▶ Carbon concentration in soil correlates with levels of isotope of cesium.
- ▶▶ Different sites were found to have varying levels of cesium pointing at different degrees of soil degradation in different sites.

- ▶▶ By applying various formulas, the cesium loss was then used to calculate erosion and associated carbon loss in soil.
- ▶▶ For measuring cesium levels in soil, gamma spectroscopy technique was used.

Significance:

- ▶▶ Radioactive cesium technology is a more rapid and less expensive method for soil erosion studies in the severely intensive croplands.
- ▶▶ It gives more accurate results for all types of erosion studies including historic, comparative and long-term soil and soil organic carbon erosion.
- ▶▶ This method can help in monitoring the effects of soil erosion and effectiveness of soil conservation strategies.

Why Monitor Soil Erosion?

- ▶▶ Soil supports plants, insects and microbial life and is formed by natural forces over a long period of time.
- ▶▶ Carbon reaches soil through the microbial action on withering plant parts and remains in soil, changing its physio-chemical properties and also enhancing its fertility.
- ▶▶ This way soil also sequesters carbon helping in regulating carbon levels in the atmosphere.
- ▶▶ Soil erosion, which involves disaggregation and displacement of soil, leads to decrease in its organic content and eventually its fertility.
- ▶▶ Natural and human activities are contributing to soil erosion and posing problems for both food production and climate change.
- ▶▶ Therefore, monitoring of soil erosion induced-carbon loss from soil is important.

19. Project NETRA

Why in News?

- ▶▶ ISRO has initiated 'Project NETRA' – an early warning system in space to detect debris and other hazards to Indian satellites.

Project NETRA (Network for space object Tracking and Analysis):

- ▶▶ The project will give India its own capability in space situational awareness (SSA) like the other space powers – which is used to 'predict' threats from debris to Indian satellites.
- ▶▶ NETRA's eventual goal is to capture the GEO, or geostationary orbit, scene at 36,000 km where communication satellites operate.
- ▶▶ The space agency says our SSA will first be for low-earth orbits or LEO which have remote-sensing spacecraft. Under NETRA the ISRO plans to put up many observational facilities: connected radars, telescopes; data processing units and a control centre.

- ▶▶ They can, among others, spot, track and catalogue objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.
- ▶▶ The NETRA effort would make India a part of international efforts towards tracking, warning about and mitigating space debris.

What NETRA consists of?

- ▶▶ In the plans are a high-precision, long range telescope in Leh and a radar in the North East. Along with them, we will also use the Multi-Object Tracking Radar (MOTR) that we have put up at the Satish Dhawan Space Centre in Sriharikota, and the telescopes at Ponmudi and Mount Abu to get a broad SSA picture. NORAD, or the North American Aerospace Defense Command, is an initiative of the U.S. and Canada that shares selective debris data with many countries. The new SSA centre would consolidate debris tracking activities that are now spread across ISRO centres.
- ▶▶ Currently there are 15 functional Indian communication satellites in the geostationary orbit of 36,000 km; 13 remote sensing satellites in LEO of up to 2,000 km; and eight navigation satellites in medium earth orbits.

Why Space Debris Matters?

- ▶▶ Space debris could be floating particles from dead satellites or rocket parts that stay in orbit for many years. Satellite agencies worry over even a speck of paint or fragment floating towards their spacecraft: it disables on board electronics and cripples the satellite worth several hundred crore rupees. Agencies constantly look for debris at the time of a launch and through the life of a satellite.

Enhancing Space situational awareness (SSA):

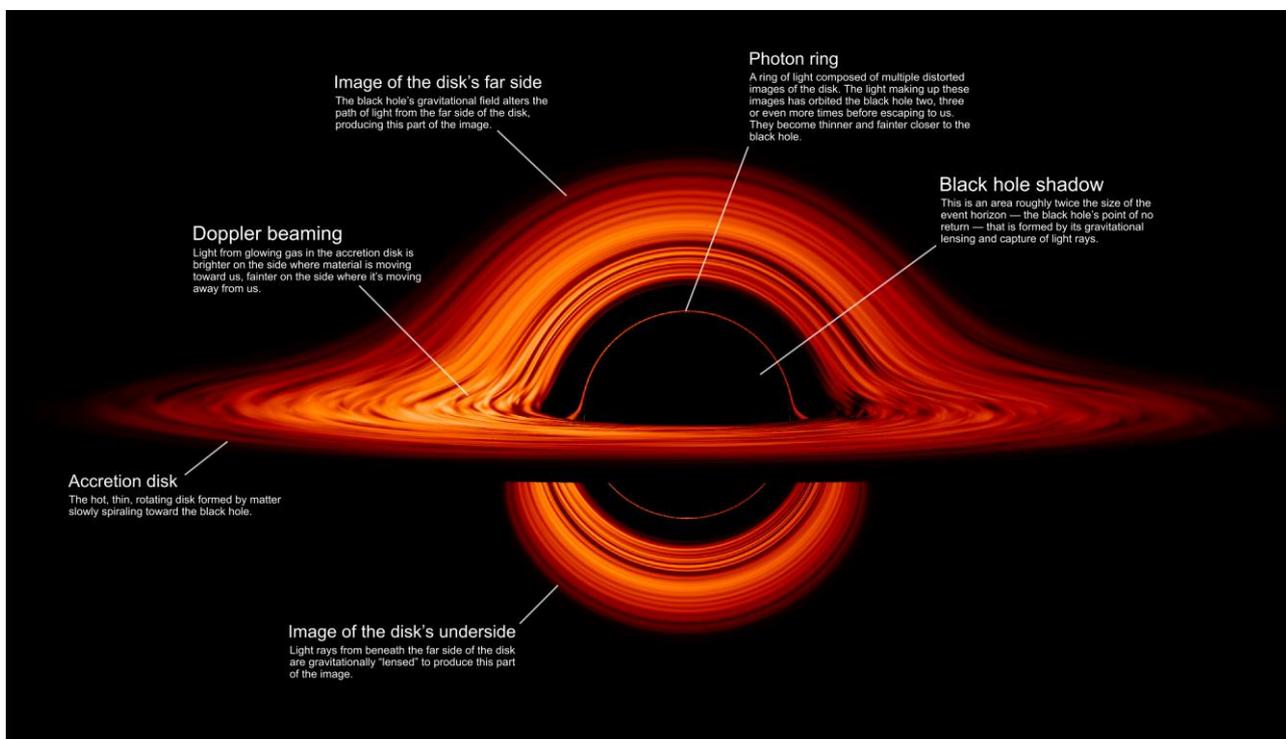
- ▶▶ India, as a responsible space power, should have SSA as a part of a national capability, as in the U.S. This is a vital requirement for protecting our space assets and a force multiplier.
- ▶▶ The SSA has a military quotient to it and adds a new ring to the country's overall security.
- ▶▶ It uses satellites, ground and air radars to secure its two countries against attacks from air, space or sea. With long-range tracking radars, the SSA also provides us the capability of an early warning system against ballistic missiles coming in at a height.
- ▶▶ Apart from radars and telescopes, he said India should also think of deploying satellites that track other satellites — as the U.S. and other space powers had done.
- ▶▶ Combined with other elements of military intelligence SSA would help us to understand motives behind any suspicious orbit changes of other satellites and to know if they were spying on or harming our spacecraft.

20. How Gravity Distorts our View of a Black Hole

Context:

- ▶▶ A new visualisation of a black hole, released by NASA, illustrates how its gravity distorts our view by warping its surroundings.
- ▶▶ The visualisation simulates the appearance of a black hole where infalling matter has collected into a thin, hot structure called an accretion disc.
- ▶▶ The black hole's extreme gravity skews light emitted by different regions of the disc, producing the misshapen appearance, NASA explained in the release.

Explanation:



- ▶▶ As magnetic fields twist through the churning gas, bright knots form and dissipate in the disc. In the area closest to the black hole, the gas orbits at close to the speed of light.
- ▶▶ The outer portions spin a bit more slowly. This difference stretches and shears the bright knots, producing light and dark lanes in the disc.
- ▶▶ The black hole's extreme gravity alters the paths of light coming from different parts of the disc, producing the warped image.
- ▶▶ Exactly what we see depends on our viewing angle; the greatest distortion occurs when viewing the system nearly edgewise.
- ▶▶ Glowing gas on the left side moves toward us so fast that the effects of Einstein's relativity give it a boost in brightness.

- ▶▶ On the right side, gas moving away becomes slightly dimmer. This asymmetry disappears when we see the disc exactly face on because, from that perspective, none of the material is moving along our line of sight.

About Einstein's Theory of Relativity:

- ▶▶ In 1915, Albert Einstein presented his theory of general relativity, which proposed that gravity itself was the result of a warping of spacetime by massive objects like stars and planets.
- ▶▶ Einstein's theory of relativity indicates that all objects fall the same way regardless of mass or composition.

Things predicted by General Relativity Include:

- ▶▶ **As light gets closer to the sun, it bends towards the sun** twice as much as classical physics (the system used before general relativity) predicts.
- ▶▶ **The perihelion of the planet Mercury rotates along its orbit more than is expected under Newtonian physics.** General relativity accounts for the difference between what is seen and what is expected without it.
- ▶▶ **Redshift from gravity.** When light moves away from an object with gravity (moving away from the center of the valley), it is stretched into longer wavelengths. This was confirmed by the Pound-Rebka experiment.
- ▶▶ **The Shapiro delay.** Light appears to slow down when it passes close to a massive object. This was first seen in the 1960s by space probes headed towards the planet Venus.
- ▶▶ **Gravitational waves.** They were first observed on 14 September 2015.

7. MISCELLANEOUS

1. Great Barrier Reef

Why in News?

- ▶ Australian government downgrades outlook for the Great Barrier Reef to ‘very poor’. Coral along large swathes of the 2,300-kilometre reef have been killed by rising sea temperatures linked to climate change, leaving behind skeletal remains in a process known as coral bleaching.

Implications of “Very Poor” Status:

- ▶ The report published by The Great Barrier Reef Marine Park Authority-An Australian Agency will be a major input into UNESCO’s Committee. There are high chances that Great barrier reef to be considered for “List of World Heritage in Danger”

World Heritage in Danger:

- ▶ The List of World Heritage in Danger is designed to inform the international community of conditions which threaten the very characteristics for which a property was inscribed on the World Heritage List. Dangers can be ‘ascertained’, referring to specific and proven imminent threats, or ‘potential’, when a property is faced with threats which could have negative effects on its World Heritage values. It encourages corrective action.

Great Barrier Reef:

- ▶ The Great Barrier Reef is the world’s largest coral reef system composed of over 2,900 individual reefs and 900 islands. The reef is located in the Coral Sea (North-East Coast), off the coast of Queensland, Australia. The Great Barrier Reef can be seen from outer space and is the world’s biggest single structure made by living organisms.
- ▶ The reef structure is composed of and built by billions of tiny organisms, known as coral polyps. It was selected as a World Heritage Site in 1981.

2. Who is a Professor Emeritus?

Context:

- ▶ Jawaharlal Nehru University (JNU) has recently asked some of its Professors Emeriti, including historian Romila Thapar, for CVs to “review their position”.

The Title:

- ▶ ‘Emeritus’ (female equivalent ‘Emerita’, although the usage is often gender-neutral) is a Latin word that literally means a veteran soldier. Worldwide, ‘Professor Emeritus/Emerita’ is the title bestowed upon an eminent retired academic in recognition of their work and distinguished service.

- ▶▶ Across the world, institutions of excellence such as the Massachusetts Institute of Technology, Harvard University, and Oxford University, etc. have long lists of Professors Emeriti, who are considered to add to the prestige of the university.



UGC Scheme:

- ▶▶ In India, the University Grants Commission (UGC) has a ‘**Scheme of Emeritus Fellowship**’ in order “to provide an opportunity to the superannuated teachers who have been actively engaged in research and teaching programmes in the preceding years to undertake research, without any restriction of position or pay scales”.
- ▶▶ According to the UGC’s website, eligibility for the fellowship “will be based on the quality of research and published work contributed by the teacher in his/her service career. The awardee (superannuated) can work under this scheme with a well-defined time-bound action plan up to the age of 70 years or up to two years (non-extendable) of the award whichever is earlier.” “No extension under the scheme is admissible and hence the proposal should be well defined with a time-bound action plan so that it is completed within the prescribed tenure,” the UGC site says.

3. Sea Route from Chennai to Vladivostok

Why in News?

- ▶▶ During Prime Minister Narendra Modi’s visit to Vladivostok this week, a Memorandum of Intent was signed to open a full-fledged maritime route between Russia’s eastern port city and Chennai on India’s eastern seaboard.
- ▶▶ “Opening of this route between Chennai and Vladivostok assumes significance because it ensures there will be connectivity between the two major ports which will give impetus to the cooperation between India and the Russian Far East,” PTI quoted Foreign Secretary Vijay Gokhale as saying.

Vladivostok:

- ▶▶ The word Vladivostok in Russian language means ‘**Ruler of the East**’, it is located on the **Golden Horn Bay** north of North Korea and a short distance from Russia’s border with China.

- ▶▶ It is the largest port on Russia’s Pacific coast, and home to the Pacific Fleet of the Russian Navy. It is the eastern railhead of the legendary Trans-Siberian Railway, which connects the far east of Russia to the capital Moscow, and further west to the countries of Europe.
- ▶▶ At Vladivostok’s massive port, shipping and commercial fishing are the main commercial activities. Automobiles are a major item of import at the port, from where they are often transported further inland.

Sea Route to Chennai:



- ▶▶ An ocean liner travelling from Vladivostok to Chennai would sail southward on the Sea of Japan past the Korean peninsula, Taiwan and the Philippines in the South China Sea, past Singapore and through the Strait of Malacca, to emerge into the Bay of Bengal and then cut across through the Andaman and Nicobar archipelago to Chennai.

Time and Distance:

- ▶▶ This sea route covers a distance of **approximately 5,600 nautical miles, or about 10,300 km**. A large container ship travelling at the normal cruising speed of 20-25 knots, or 37-46 km/hour, should be able to cover the distance in **10-12 days**.
- ▶▶ At suboptimal “slow steaming” speeds of 18-20 knots (33-37 km/hour), at which long-distance vessels sometimes travel to in order to save fuel, it might take slightly longer – 12-13 days.

Trade and Strategy:

- ▶▶ India is building nuclear power plants with Russia’s collaboration in Kudankulam on the sea coast in Tamil Nadu’s Tirunelveli district. The opening of a sea route is likely to help in the project. Even otherwise, a vibrant sea route **will help in the upscaling of trade relations between the two nations**.
- ▶▶ It will also **increase India’s presence in the Indo-Pacific, and especially the South China Sea**, a deeply contested patch of the ocean that Beijing considers its stomping ground.
- ▶▶ “The India-Russia friendship is not restricted to their respective capital cities. We have put people at the core of this relationship,” the Prime Minister said in Vladivostok.

4. 'Eat Right India' Campaign

Why in News?

- ▶ Government of India launches 'Eat Right India' to tackle lifestyle diseases.

Need for Such Campaign:

- ▶ India is passing through an epidemiological shift from communicable to non-communicable diseases, and the burden of diet-related diseases such as diabetes, hypertension, and obesity is rising rapidly.
- ▶ The new "food systems approach" judiciously combines the regulatory and capacity building measures with consumer empowerment initiatives

About Eat Right India:

- ▶ Eat Right India', built on **two broad pillars** of 'Eat Healthy' and 'Eat Safe', aims to engage, excite and enable citizens to improve their health and well-being.
- ▶ **Led by FSSAI**, it is a collective effort to make both the demand and supply-side interventions through the engagement of key stakeholders.
- ▶ It is a part of the vision of the Hon. Prime Minister Shri Narendra Modiji, that the **month of September is being celebrated all across the country as "Poshan Maah" (Nutrition Month)** to sensitize the public towards healthy eating, address the twin issues of malnutrition/undernutrition and problem of obesity in some sections of the population, and also **intensifying the campaign towards a 'Malnutrition Free India**.
- ▶ This movement is aligned with the Government's flagship public health programmes such as POSHAN Abhiyaan, Ayushman Bharat Yojana and Swachh Bharat Mission to lead us to the New India, which our Prime Minister wishes to deliver to all citizens by 2022.

Aim:

- ▶ To improve public health in India and combat negative nutritional trends to fight lifestyle diseases.

Features:

- ▶ The strength of the 'The Eat Right Movement' lies in its holistic and collaborative approach, with stakeholders on both the demand and supply-side joining to make a difference through some clearly identified steps.
- ▶ On the demand side, the Eat Right Movement focuses on empowering citizens to make the right food choices. On the supply side, it nudges food businesses to reformulate their products, provide better nutritional information to consumers and make investments in healthy food as responsible food businesses.

- ▶▶ **Social and behavioural change:** Eat Right India movement is a crucial trigger for the much needed social and behavioural change.

The Eat Right Movement' brings together three ongoing initiatives of FSSAI:

1. Safe and Nutritious Food Initiative, focused on social and behavioural change around food safety and nutrition at home, school, workplace and on-the-go;
2. The Eat Healthy Campaign focused on reduction of high fat, sugar and salt foods in the diet; and Food Fortification, focused on promoting five staple foods-wheat flour, rice, oil, milk and salt that are added with key vitamins and minerals to improve their nutritional content.

Other Measures:

- ▶▶ Government has prescribed a **limit for Total Polar Compounds (TPC) at 25%** in cooking oil to avoid the harmful effects of reused cooking oil.
- ▶▶ **Standards for five fortified staples -wheat flour, rice, oil, milk and salt** to reduce large-scale deficiencies of vitamins and minerals have been notified, in addition to standards for health supplements, nutraceuticals, prebiotics and probiotics products.
- ▶▶ To facilitate informed consumer choices Regulations on Advertising and Claims and mandatory menu labelling has been notified. In addition, labelling provisions have been made for appropriate use of sweeteners for children and pregnant women.
- ▶▶ To **reach the target of Trans-fat Free India by 2022**, regulations to reduce trans-fat to less than 2% in all oils, fats and food products are in place.
- ▶▶ Robust material in the form of a **Pink Book, Yellow Book, DART Book, informative videos** etc., are in place, and can be accessed through a video library on FSSAI's website.
- ▶▶ **First ever state-of-the-art National Food Laboratory of Delhi, NCR** and to strengthen the Eat Right Movement a network of food testing laboratories is being establish.

WHO on Eat Right India:

- ▶▶ The Eat Right campaign is a true example of multi-sectoral collaborative approach that WHO has been advocating for to address non-communicable diseases such as heart diseases, high blood pressure, diabetes, obesity, malnutrition.

About FSSAI:

- ▶▶ Food Safety and Standards Authority of India (FSSAI) is an **autonomous statutory body** established under **Food Safety and Standards Act, 2006** which consolidates various acts & orders that have hitherto handled food related issues in various Ministries and Departments.

- ▶▶ FSSAI has been created for **laying down science-based standards for articles of food** and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.
- ▶▶ Establishment of the Authority
- ▶▶ **Ministry of Health & Family Welfare**, Government of India is the Administrative Ministry for the implementation of FSSAI.

5. Institutions of Eminence (IoE) Scheme

Why in News?

- ▶▶ The Human Resource Development Ministry has awarded the status of Institute of Eminence to the IIT-Madras, the IIT-Kharagpur, Delhi University, Benares Hindu University and the University of Hyderabad.

Scheme & Objective:

- ▶▶ Institutions of Eminence scheme has been launched in order to implement the commitment of the Government to empower the Higher Educational Institutions and to help them become world-class teaching and research institutions.
 - ❖ To provide for higher education leading to excellence and innovations in such branches of knowledge as may be deemed fit at post-graduate, graduate and research degree levels and award degrees, diplomas and other academic distinction
 - ❖ To engage in areas of specialization to make distinctive contributions to the objectives of the university education system wherein the academic engagement is clearly distinguishable from programmes of an ordinary nature.
 - ❖ To develop the capacity of the students and the researchers to compete in the global tertiary education marketplace through the acquisition and creation of advanced knowledge in those areas
 - ❖ To provide for high-quality teaching and research and for the advancement of knowledge and its dissemination through various research programmes undertaken in-house by substantial number of full-time faculty and research scholars in diverse disciplines.
 - ❖ To pay special attention to teaching and research in unique and emerging areas of knowledge, including interdisciplinary areas, which are regarded as important for strategic needs of the country but are not being pursued by conventional or existing institutions so far, and award degrees, diplomas and other academic distinctions.
 - ❖ To aim to be rated internationally for its teaching and research as a top hundred Institution in the world over time.

6. Global Liveability Ranking 2019

Why in News?

- ▶▶ New Delhi has dropped by six places to rank 118th on a list of the world's most liveable cities due to increase in cases of petty crimes and poor air quality.
- ▶▶ While New Delhi registered the biggest decline in Asia, Mumbai also fell two places since last year to rank 119th on the list topped by Vienna (Austria) for the second consecutive year.

Ranking:

- ▶▶ **The Economist Intelligence Unit (EIU)** publishes an annual Global Liveability Ranking. The EIU ranking of 140 cities is based on their scores in **Five Broad Categories — stability, Healthcare, Culture and Environment, Education, and Infrastructure**. Each factor in a city is rated as acceptable, tolerable, uncomfortable, undesirable or intolerable.

Global Scenario:

- ▶▶ Among the BRIC countries, Rio de Janeiro (Brazil) was positioned at the 89th place, Moscow (Russia) at 68th, St Petersburg (Russia) 71st.
- ▶▶ The Chinese cities in the list include Suzhou at 75th rank, Beijing 76th, Tianjin 79th, Shanghai 80th, Shenzhen 84th, Dalian 90th, Guangzhou 96th and Qingdao 97th.
- ▶▶ Several major global cities received mixed scores. London and New York ranked 48th and 58th out of the 140 cities in the survey.

Why Decline in liveability in India?

Abuses against Journalists:

- ▶▶ The EIU also flagged “an escalation in abuses against journalists in recent years” in India.
- ▶▶ It cited a decline in the country's ranking in Reporters Without Borders' Press Freedom Index where India now sits in the bottom quartile of countries.
- ▶▶ The study said that Asian cities overall have scored slightly below the global average while three Asian cities — Port Moresby in Papua New Guinea (135th), Pakistan's Karachi (136th) and Bangladesh's Dhaka (138th) — are among the ten least liveable globally.

Rise in Crime rates:

- ▶▶ The EIU said decline in Mumbai's rank was mainly due to a downgrade in its culture score, while New Delhi has fallen in the index because of downgrades to its culture and environment score as well as fall in the stability score owing to rising crime rates.

Climatic Changes:

- ▶▶ Several cities, such as New Delhi in India and Cairo in Egypt received substantial downgrades on their scores owing to problems linked to climate change, such as poor air quality, undesirable average temperatures and inadequate water provision,” the report said.

Constrained liveability Conditions:

- ▶▶ A score between 50-60 points, which is the case for India, indicates constrained liveability conditions.
- ▶▶ The 2018 update to the WHO Global Ambient Air Quality Database shows that New Delhi has the sixth highest annual mean concentration of fine particulate matter among cities around the world. Companies pay a premium to employees who move to cities where living conditions are particularly difficult and there is excessive physical hardship or a notably unhealthy environment. The suggested allowance for Indian cities is 15%.

7. Mapping Lightning Across India

Why in News?

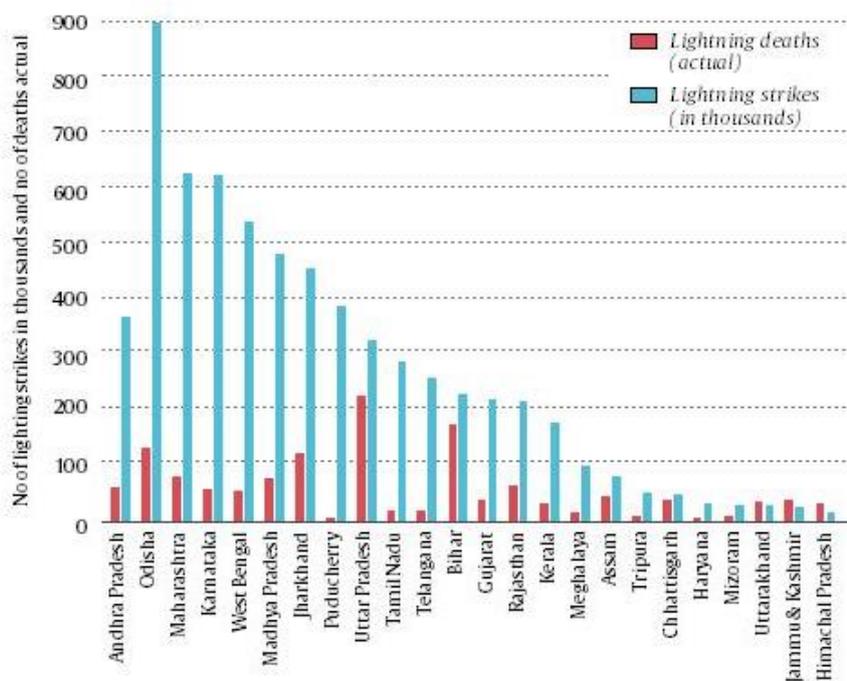
- ▶▶ For the first time, a report has mapped lightning strikes across the country, and the lives they have claimed. It is a first-of-its-kind report on lightning incidents which has been **prepared by Climate Resilient Observing Systems Promotion Council (CROPC)**, a non-profit organisation that works closely with India Meteorological Department (IMD).

Highlights of The Report:

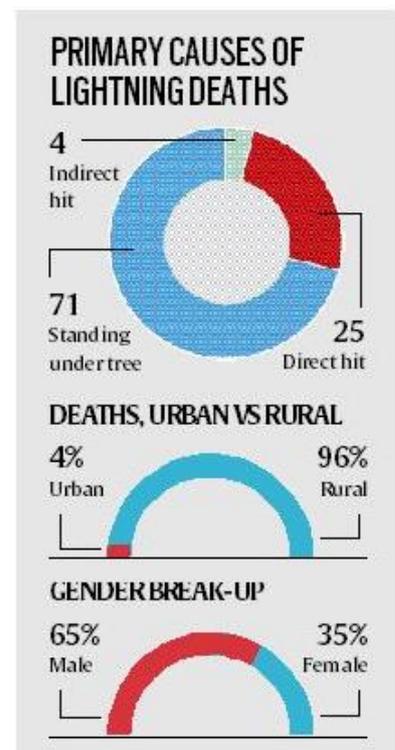
- ▶▶ According to the report lightning strikes have caused at least 1,311 deaths in the four-month period between April and July this year. UP accounted for 224 of these deaths, followed by Bihar (170), Odisha (129) and Jharkhand (118).
- ▶▶ It counted 65.55 lakh lightning strikes in India during this four-month period, of which 23.53 lakh (36 per cent) happened to be cloud-to-ground lightning, the kind that reaches the Earth. The other 41.04 lakh (64 per cent) were in-cloud lightning, which remains confined to the clouds in which it was formed.
- ▶▶ Odisha recorded over 9 lakh incidents of lightning (both kinds), the maximum for any state but fewer deaths than Uttar Pradesh, which had 3.2 lakh incidents.
- ▶▶ Between 2,000 and 2,500 people are estimated as killed every year in lightning strikes in the country.

- ▶▶ Observations confirm that the Chhotanagpur plateau, which is the confluence of Jharkhand, Odisha, part of Chhattisgarh and West Bengal and is inhabited by tribals, is the most lightning-prone area.
- ▶▶ The area is electrostatically and thermodynamically charged, resulting in lightning. East Singhbhum has the highest number of lightning strikes — more than 2 lakhs — compared to any other district in India.
- ▶▶ These areas are predominantly inhabited by tribals who need to be relocated to safer spaces, else their population will go extinct.

MOST STRIKES IN ODISHA, MOST DEATHS IN UP



Source: Mid-Monsoon 2019 Lightning Report



Significance of The Report:

- ▶▶ The report is part of an effort to create a database that can help develop an early warning system for lightning, spread awareness, and prevent deaths.
- ▶▶ It is possible to predict, 30-40 minutes in advance, when a lightning strike heads towards Earth. The prediction is made possible through study and monitoring of the in-cloud lightning strikes.
- ▶▶ Timely dissemination of this information can save several lives.
- ▶▶ After carrying out a pilot project in 16 states, the IMD has begun providing lightning forecasts and warnings through mobile text messages from this year.

- ▶▶ However, this is not yet available in all regions, and there isn't enough awareness as yet on the kinds of action that need to be taken after an alert.

Connection Between Lightning and Climate Change:

- ▶▶ It has been found that areas prone to heatwaves were also prone to lightning.
- ▶▶ Pollution increases aerosols in the atmosphere, which in turn increases lightning.
- ▶▶ There have been at least two or three instances of lightning strikes without rainfall, killing persons in Jharkhand.

How Is Lightning Formed?

- ▶▶ Lightning is a very **rapid and massive discharge of electricity in the atmosphere**. Some of it is directed towards the Earth.
- ▶▶ It is a **result of the difference in electrical charge between the top and bottom of a cloud**. The lightning-generating clouds are typically **about 10-12 km in height, with their base about 1-2 km from the Earth's surface**. The temperatures at the top range from -35°C to -45°C .
- ▶▶ As water vapour moves upwards in the cloud, it condenses into water due to decreasing temperatures. A huge amount of heat is generated in the process, pushing the water molecules further up. As they move to temperatures below zero, droplets change into small ice crystals. As they continue upwards, they gather mass, until they become so heavy that they start descending. It leads to a system where smaller ice crystals move upwards while larger ones come down. The resulting collisions trigger release of electrons, in a process very similar to the generation of electric sparks. The moving free electrons cause more collisions and more electrons; a chain reaction is formed.
- ▶▶ The process results in a situation in which the top layer of the cloud gets positively charged while the middle layer is negatively charged. The electrical potential difference between the two layers is huge, of the order of billions of volts. In little time, a huge current, of the order of lakhs to millions of amperes, starts to flow between the layers.
- ▶▶ It produces heat, leading to the heating of the air column between the two layers of cloud. It is because of this heat that the air column looks red during lightning. The heated air column expands and produces shock waves that result in thunder sounds.

How Does Lightning Strike Earth?

- ▶▶ **The Earth is a good conductor of electricity. While electrically neutral, it is relatively positively charged compared to the middle layer of the cloud.** As a result, an estimated 20-25 per cent of the current flow gets directed towards the Earth. It is this current flow that results in damage to life and property.

- ▶▶ **Lightning has a greater probability of striking raised objects on the ground**, such as trees or buildings. Once they are sufficiently near the ground, about 80-100 m from the surface, they even tend to redirect their course to hit the taller objects. This is because travelling through air, which is a bad conductor of electricity, the electrons try to find a better conductor and also the shortest route to the relatively positively charged Earth's surface. Thousands of thunderstorms occur over India every year. One thunderstorm can involve more than 100 lightning strikes.

8. 'ANGAN'- International Conference on Energy Efficiency in Building Sector

Why in News?

- ▶▶ An international conference ANGAN (Augmenting Nature by Green Affordable New-habitat) focussed on Energy Efficiency in Building Sector
- ▶▶ The Conference is being organised by the Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India in collaboration with GIZ under the Indo German Technical Cooperation.

Highlights:

- ▶▶ The International Conference will provide a platform to deliberate on interdependence between organizations, systemic sustainability and feedback loops for better resource efficiency.
- ▶▶ Given the formidable challenge of providing adequate energy of desired quality to the consumers at reasonable costs, improving the efficiency in high energy consumption sectors like buildings have become important component of our integrated energy policy.
- ▶▶ Due to lack of awareness and knowledge about latest technologies, financial assistance, suppliers and purchase of energy-efficient equipment, etc. efforts on energy efficiency and conservation in this sector have been moderate and therefore require greater push.
- ▶▶ This event aims to provide thrust in this direction so as to address such challenges faced by the stakeholders.

BEE:

- ▶▶ The BEE is a statutory body under the Ministry of Power, Government of India. It assists in developing policies and strategies with the primary objective of reducing the energy intensity of the Indian economy.
- ▶▶ BEE coordinates with designated consumers, designated agencies, and other organizations to identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

9. India Accounted for 2.8 Million Displaced People in 2018: IDMC Report

Why in News?

- ▶ Internal Displacement Monitoring Centre (IDMC) has released a new global report on the displacement of people due to natural disasters.
- ▶ According to the IDMC report, about seven million people have been displaced globally due to natural calamities including floods and storms between January and June 2019.
- ▶ IDMC Report also informed that more than 950 climate-related issues forced about seven million people to leave their homes. Most of the affected people are living in the Asian and African regions. In South Asia India accounted for most of the displacements.

India Specific Highlights:

Natural Disaster-related Displacements:

- ▶ IDMC report informed that India accounted for most of the region's new displacements. Its overall total of 2.8 million was among the highest in the world, of which nearly 2.7 million were triggered by disasters across 15 states. India was particularly hard-hit by the monsoon season when flooding devastated the south-western state of Kerala. Almost 1.5 million new displacements were recorded in Kerala in what was described as the worst floods in a century. Cyclone Titli struck Orissa and Andhra Pradesh states in October, triggering 400,000 new displacements and cyclone Gaja hit Tamil Nadu in November, triggering 2,49,000 displacements.

Conflict and Violence related Displacements:

- ▶ According to the IDMC report, more than 1,60,000 new displacements associated with conflict and violence was recorded in Kashmir.
- ▶ Communal violence in Kashmir and West Bengal cast violence in Maharashtra and political violence in Tripura also triggered small-scale displacement.

Global Highlights:

- ▶ IDMC report highlights that weather-related hazards, particularly storms, accounted for the majority of the new displacement associated with disasters, triggering 17.2 million displacements in 2018. In various regions of the world, unresolved conflicts and a rise in communal violence were responsible for most of the 10.8 million new displacements associated with conflict and violence in 2018.
- ▶ Despite the decline in conflict and displacement in Syria during 2018, the country's civil war, in its eighth year, continued to trigger some of the largest population movements in the world. More than 1.6 million new displacements were recorded.

- ▶▶ Around 221,000 people were living in displacement nationwide as of the end of the year, suffering dire conditions and unable to return because of destroyed housing, ongoing insecurity and a lack of resources.

IDMC:

- ▶▶ It is an authoritative source of data and analysis on internal displacement. The Internal Displacement Monitoring Centre (IDMC) was established in 1998 as the Norwegian Refugee Council (NRC).
- ▶▶ It works to inform policy and operational decisions that improve the lives of millions of people living in the internal displacement or at risk of becoming displaced in the future.

10. District Mineral Foundation

Context:

- ▶▶ Amendments to District Mineral Foundation (DMF) Trust Rules, 2015, by Chhattisgarh government

Background:

- ▶▶ Chhattisgarh, which has more than Rs 4,200 crore in DMF Trust, became the first state in July 2019, to amend DMF rules.

What is District Mineral Foundation?

- ▶▶ District Mineral Foundation (DMF) is a trust set up as a non-profit body, in those districts affected by the mining works, to work for the interest and benefit of persons and areas affected by mining related operations. It is funded through the contributions from miners.
- ▶▶ Setting up of District Mineral Foundations (DMFs) in all districts in the country affected by mining related operations was mandated through the Mines and Minerals (Development & Regulation) Amendment Act, (MMDRA) 2015

What Changes will it make?

- ▶▶ The new rule mandates the inclusion of 10 Gram Sabha members directly from mining-affected areas in the DMF Governing Council (GC).
- ▶▶ In Scheduled Areas, at least 50 per cent of the Gram Sabha members must be from Scheduled Tribes (ST).
- ▶▶ It will also strengthen women's voices in the GC by mandating that from each Gram Sabha, there will be one male and one female member in the GC.
- ▶▶ The amendments create a huge scope for mining districts in the state to improve the lives and livelihoods of those affected by mining,"

- ▶▶ The DMF had been envisaged to build ‘social capital’, thus it must not be wasted on just building physical infrastructure, for which there are other funds.
- ▶▶ A 20 per cent cap has been put on the use of DMF funds for big physical infrastructure projects such as roads, bridges, railways, industrial parks etc.
- ▶▶ The rules mandate spending of at least 50 per cent of the funds on directly-affected areas to ensure worst-hit areas and people are prioritised.
- ▶▶ This is in addition to 60 per cent to be used on high-priority issues such as drinking water, livelihoods, healthcare, women and child development, education, etc.
 - ❖ This will not only stop misuse of the funds on big projects such as roads, bridges, industrial parks etc, but will also create more scope to improve investment on soft resources.
- ▶▶ To improve DMF’s efficiency in operations and fund use, the amendments have also asked districts to identify mining-affected people and delineate mining-affected areas.
- ▶▶ To ensure better public accountability, a two-step social audit process has been mandated. Provisions have also been introduced for five-year plan, which can be subjected to a third-party review if the secretary of the mines department considers it to be necessary.

Government Intervention:

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY):

- ▶▶ This programme meant to provide for the welfare of areas and people affected by mining related operations.
- ▶▶ The most productive mining areas in the country are largely areas inhabited by scheduled tribes.
- ▶▶ They also are mainly located in the areas covered by the Fifth Schedule of the Constitution. The PMKKKY is, therefore, very sharply focused on safeguarding the health, environment and economic conditions of the tribals and providing them with opportunities to benefit from the vast mineral resources that are extracted from the areas where they live.
- ▶▶ The overall objective of PMKKKY scheme include:
 1. To implement various developmental and welfare projects/programs in mining affected areas, and these projects/ programs will be complementing the existing ongoing schemes/projects of State and Central Government;
 2. To minimize/mitigate the adverse impacts, during and after mining, on the environment, health and socio-economics of people in mining districts;
 3. And to ensure long-term sustainable livelihoods for the affected people in mining areas.

11. Scientific Social Responsibility (SSR) Policy

Why in News?

- ▶ India is going to be possibly the **First country in the world to implement a Scientific Social Responsibility (SSR) Policy** on the lines of Corporate Social Responsibility (CSR) to encourage science and technology (S&T) institutions and individual scientists in the country to proactively engage in science outreach activities to connect science with the society. A draft of the new policy has been made available by the **Department of Science and Technology (DST)** on its website for public comments.

Background:

- ▶ This draft policy builds upon traditions of earlier policies (**Scientific Policy Resolution 1958, Technology Policy Statement 1983, Science and Technology Policy 2003 and Science Technology and Innovation Policy 2013**) while proposing more pragmatic provisions to make institutions and individual scientists socially responsible.

Highlights:

- ▶ The policy aims to harness latent potential of the scientific community for **Strengthening linkages between science and society**, and for making S&T ecosystem vibrant.
- ▶ It is aimed at developing a mechanism for ensuring access to scientific knowledge, transferring benefits of science to meet societal needs, promoting collaborations to identify problems and develop solutions.
- ▶ Under the proposed policy, individual scientists or knowledge workers will be required to devote at least 10 person-days of SSR per year for exchanging scientific knowledge to society. It also recognises the need to provide incentives for outreach activities with necessary budgetary support. It has also been proposed to give credit to knowledge workers/scientists for individual SSR activities in their annual performance appraisal and evaluation. No institution would be allowed to outsource or sub-contract their SSR activities and projects. The **draft defines SSR as “the ethical obligation of knowledge workers in all fields of science and technology to voluntarily contribute their knowledge and resources to the widest spectrum of stakeholders in society, in a spirit of service and conscious reciprocity”**.
- ▶ A central agency will be established at DST to implement the SSR. Other ministries would also be encouraged to make their own plans to implement SSR as per their mandate.
- ▶ For implementation of the policy, a national portal will be developed up to capture societal needs requiring scientific interventions and as a platform for implementers and for reporting SSR activities.

Conclusion:

- ▶▶ When most research is being done by using taxpayers' money, the scientific establishment has an ethical obligation of "giving back" to the society.
- ▶▶ SSR is not only about scientific impact upon society but also about the social impact upon science. SSR would therefore strengthen the knowledge ecosystem and bring efficiencies in harnessing science for the benefit of society.

12. Central Equipment Identity Register (CEIR)

Central Equipment Identity Register (CEIR):

- ▶▶ International Mobile Equipment Identity (IMEI) is supposed to be a unique identity of a mobile phone device.
- ▶▶ IMEI number being programmable, some miscreants do reprogram the IMEI number, which results in cloning of IMEI causing multiple phone devices with same IMEI number.
- ▶▶ As on date, there are many cases of cloned/duplicated IMEI handsets in the network.
- ▶▶ If such IMEI is blocked, a large number of mobile phones will get blocked being handsets with same IMEI causing inconvenience to many genuine customers.
- ▶▶ Thus, there is a need to eliminate duplicate/fake IMEI mobile phones from the network.
- ▶▶ Accordingly, a project called Central Equipment Identity Register (CEIR) system has been undertaken by the DoT for addressing security, theft and other concerns including reprogramming of mobile handsets.

Objectives:

- ▶▶ Blocking of lost/stolen mobile phones across mobile networks thus discouraging theft of mobile phones. Facilitate in tracing of such reported lost/stolen mobile phones.
- ▶▶ Prevention of mobile devices with duplicate and fake IMEIs in the network.
- ▶▶ Curtail the use of counterfeit mobile devices.
- ▶▶ Reduced health risks to the users with the control of use of counterfeit mobile phones
- ▶▶ Improved QoS and reduced call drops with reduction in use of counterfeit mobile devices.

13. Akademik Lomonosov- Russia's Floating Nuclear Power Plant

Why in News?

- ▶▶ Recently **Russian-built floating nuclear power plant** completed its 5,000-km journey along the Northern Sea Route, causing excitement in the energy sector, but sparking fears among environmentalists over the safety of the Arctic region. The 'Akademik Lomonosov', is the first such plant to be built in the world.

About Akademik Lomonosov:

- ▶▶ The Akademik Lomonosov is a **first-of-its-kind floating nuclear power station** built in **St Petersburg, the Russian port city** on the Gulf of Finland. Three tugboats pulled it from the northern port of Murmansk for 5,000 kilometres to Chukotka, in Russia's far east.
- ▶▶ Named after the 18th-century Russian scientist Mikhail Lomonosov, the 21,000-tonne floating plant is 144 m long and 30 m wide, and **contains two nuclear reactors of 35 MW each**. It is a small plant compared to conventional land-based nuclear projects.
- ▶▶ Run by the state-owned nuclear energy corporation Rosatom, the Akademik Lomonosov is expected to have a working life of 40 years which can be expanded to 50 years.
- ▶▶ According to Rosatom, the Akademik Lomonosov is part of a larger plan to provide energy to remote regions in Russia and around the world.
- ▶▶ It said that floating nuclear units could be particularly beneficial to island nations and can be used to power desalination plants for countries with a shortage of fresh water.
- ▶▶ The company has also said that, because many remote areas rely on coal-burning plants, the portable nuclear plants will help to reduce emissions of carbon dioxide, a greenhouse gas that contributes to climate change.

Concerns of Disaster:

- ▶▶ The environmental group Greenpeace has called the plan "Chernobyl on Ice", referring to the 1986 nuclear power plant meltdown, which released large levels of radiation into the atmosphere, forced thousands to flee their homes and sparked long-term fears of health and environmental repercussions.
- ▶▶ Activists fear that any accident aboard the plant could cause great damage to the fragile Arctic region. A recent nuclear accident in Russia after which there was a brief spike in radiation levels has added to the fears.
- ▶▶ The radiation fallout from the Fukushima nuclear disaster in Japan is also cited as a reason to not rush into such projects.
- ▶▶ The launch is part of a wider ambition of Russian President Vladimir Putin to develop the Northern Arctic region. That desire has become more realistic in recent years with global warming and melting ice caps making some areas more accessible.
- ▶▶ Critics have pointed to past incidents involving nuclear sea vessels, including the sinking of the gargantuan Kursk Submarine in 2000 and the leaking of radiation by a Russian icebreaker off the coast of Siberia in 2011.

Conclusion:

- ▶▶ The incident-ridden history of Russian nuclear icebreakers and submarines shows the need for strict, independent oversight with international peer review. This must start now, before the reactors are loaded, and span the plant's entire risky operation - including transport, decommissioning and waste management.

14. Impact of Attack on Saudi Arabia's Oil Facility

Why in News?

- ▶▶ Last week the Houthis, a rebel Shia group of Yemen that is backed by Iran, bombed the Abqaiq plant as well as the Khurais oil field in Saudi Arabia.
- ▶▶ The attack, executed by drones is the largest-ever disruption in crude oil production in Saudi Arabia, which supplies 10 per cent of global world supply and is the world's largest crude oil exporter.

Global Impacts:

- ▶▶ Saudi Aramco, the state-owned oil company suspended the production of almost 6 million barrels per day (about 6 per cent of global oil supply) and also restricted the use of 2 mbd of spare capacity. This is the largest-ever disruption in crude oil production and therefore oil prices across the world are expected to rise.

Impacts on India:

- ▶▶ India imports 80 per cent of the oil it consumes, which means there are multiple ways in which the country will be impacted by this disruption.
- ▶▶ The first issue is supply. India is already trying to make up for the loss of supply from Iran after US-imposed sanctions. After Iraq, Saudi Arabia is India's second-largest supplier of crude oil – it accounts for almost 17 per cent of the country's imports.
- ▶▶ Although Saudi Arabia has assured that there will be no loss of supply, if the process of restoration takes more time than anticipated, India would have to look for alternatives. This may not be easy since the global supply has been fairly volatile because of disruptions in some of the other big suppliers such as Venezuela, Libya and Nigeria.
- ▶▶ India is expected to import 1.6 billion barrels of crude oil in the current financial year. So an increase in oil prices by just one dollar essentially means an increase of \$1.6 billion in the import bill. That's an additional Rs 11,500 crore at the current exchange rate.
- ▶▶ But supply constraints and rising oil prices would mean that the rupee will weaken further against the dollar – that's because, as the dollar prices of crude oil rise, India would need to buy more dollars for the same amount of oil, thus depreciating the value of the rupee vis-a-vis the dollar. Rising oil prices will worsen the Indian government's fiscal balance.

- ▶▶ higher crude oil prices would also lead to higher domestic oil prices, which, in turn, will further depress the demand for all things, especially those that use oil as the primary input say, cars.
- ▶▶ This dip in consumption demand, which is already under strain as the recent growth slowdown has shown, would likely mean lower economic activity and consequently lower revenues for the government.

15. National Institute of Ocean Technology (NIOT)

Why in News?

- ▶▶ Officials from the Ministry of Earth Sciences apprised the Vice-president of the status of the National Institute of Ocean Technology's research facility at Thupilipallam village in Nellore District of Andhra Pradesh.

Highlights:

- ▶▶ The foundation stone for the research facility at Thupilipallam was laid in 2016 but the project has seen delays due to legal hurdles.

National Institute of Ocean Technology (NIOT):

- ▶▶ NIOT is an autonomous society under the Ministry of Earth Sciences, established in 1993.
- ▶▶ It has its main office at Chennai, Tamil Nadu.
- ▶▶ The chief objective of the institute is to develop reliable indigenous technologies to solve the various engineering problems associated with the harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ), which is about two-thirds of the land area of India. The institute engages in developing technologies for sustainable utilization of ocean resources.
- ▶▶ It also engages in providing solutions to organisations working in the field.

Exclusive Economic Zone (EEZ):

- ▶▶ The EEZ is a sea zone prescribed by the UNCLOS in 1982, over which a country has special rights regarding the exploration and use of marine resources, including energy production from water and wind. It stretches from the baseline out to 200 nautical miles from a country's coast. The term EEZ does not include the continental shelf beyond 200 nautical miles. It also does not include the territorial sea.
- ▶▶ The difference between territorial sea and the EEZ is that the former confers full sovereignty over the waters, whereas the latter is merely a "sovereign right" which refers to the coastal nation's rights below the surface of the sea.
- ▶▶ The surface waters are international waters.

16. India Is the Top Source of Immigrants Across the Globe

A UN Report Reveals that one-third of all immigrants come from 10 countries

- ▶▶ As per the recent report (The International Migrant Stock 2019) released by the United Nations Department of Economic and Social Affairs (UN-DESA) in New York, India has emerged as the leading country of origin for immigrants across the world, with 17.5 million international migrants in 2019 coming from India, up from 15.9 million in 2015.

Key Findings of the Report:

- ▶▶ The percentage of international migrants of the total global population has increased to 3.5% from 2.8% in 2000.
- ▶▶ Among countries, the U.S. hosts the highest number of international migrants (51 million), about 19% of the global population.
- ▶▶ The statement also said that around two-fifths of all international migrants had gone from one developing country to another.

Facts regarding India:

- ▶▶ India remained as the top source of international migrants among all other countries as per the report.
- ▶▶ The number of migrants living in India saw a slight decline from 5.24 million in 2015 to an estimated 5.15 million in 2019 – both 0.4% of the total population of the country.
- ▶▶ Bangladesh was the leading country of origin for migrants in India, the report stated.

About United Nations Department of Economic and Social Affairs (UN DESA):

- ▶▶ Part of the United Nations Secretariat that upholds the objective of development
- ▶▶ Member of the United Nations Development Group
- ▶▶ Based at UN Headquarters in New York
- ▶▶ It is a vital interface between global policies in the economic, social and environmental spheres and national action.
- ▶▶ Its work is guided by the universal and transformative 2030 Agenda for Sustainable Development, along with a set of 17 integrated Sustainable Development Goals (SDGs) and 169 associated targets.

17. Atlantic Meridional Overturning Circulation (AMOC)

Why in News?

- ▶▶ While greenhouse warming caused by human activity is heating up the Indian oceans, it is likely to boost a key system of currents in the Atlantic Ocean that plays a key role in determining the weather across the world.

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
- ▶▶ For thousands of years, AMOC has remained stable, but since the past 15 years, it has been weakening.
- ▶▶ This change could have dramatic consequences for Europe and other parts of the Atlantic rim.

Impact of AMOC slowdown:

- ▶▶ AMOC last witnessed a slowdown 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.

Need for delaying AMOC slowdown:

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

Uncertainty ahead:

- ▶▶ Scientists don’t know for how long this enhanced warming in Indian Ocean will continue.
- ▶▶ If other tropical oceans’ warming, especially the Pacific’s, catches up with the Indian Ocean, the advantage for AMOC will stop. Moreover, it isn’t clear whether slowdown of AMOC is caused by global warming alone or it is a short-term anomaly related to natural ocean variability.

18.Mochi Swabhimaan Initiative

Why in News?

- ▶▶ The Union Minister for Skill Development and Entrepreneurship, GOI awarded Recognition of Prior Learning (RPL) Certificates to more than one thousand workers from the leather sector in Chennai. He also launched the Mochi Swabhimaan Initiative.

RPL Certificates:

- ▶▶ RPL certificates are given under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) of Skill India to the unorganised semi-skilled and unskilled workers.
- ▶▶ These certificates can help them get assessed and certified on their current competencies as per NSQF levels (National Skills Qualifications Framework).
- ▶▶ RPL also shows them a path to bridge their current knowledge and skill levels to reach a competency level or go for higher skills for professional growth.
- ▶▶ The RPL scheme envisions to impart skill-based training to one crore people between 2016 and 2020.
- ▶▶ The certificates can give workers the chance to go for higher education in their respective fields. It will also give them different options in upgrading and upskilling.
- ▶▶ RPL certificates certify skills acquired informally and drive young people to venture into aspirational job roles.
- ▶▶ The industry will also be benefitted because formalizing the skills of employees will give a clear picture of the available skill sets, skill gaps and the need for upgradation to achieve desired quality and productivity benchmarks.

Mochi Swabhimaan Initiative:

- ▶▶ It is a nationwide activity in which the Leather Sector Skill Council (LSSC) will extend support to the cobbler community who provide leather-based services, with CSR funds and bring respect to their skills by giving them a better working environment in the form of kiosks/umbrellas.

Leather Sector Skill Council (LSSC):

- ▶▶ It is a non-profit organisation dedicated to meeting the demand for skilled workforce in the leather industry in India.
- ▶▶ The LSSC was set up in 2012 as one of the key sector skill councils approved by National Skill Development Corporation (NSDC).
- ▶▶ The LSSC caters to the training and employment needs of various subsectors in the leather industry such as finished leather, footwear, garments, leather goods, accessories, saddlery and harness sectors. It also has a partnership with the Council of Leather Exports (CLE).

19. Paika Rebellion (1817)

Why in News?

- ▶▶ On September 27-28, President Ram Nath Kovind will visit Odisha's Khorda district to lay the foundation of a memorial dedicated to the 1817 Paika Rebellion.
- ▶▶ Paika memorial is a project planned and proposed by the central government.

Paika Rebellion of Odisha (1817):

- ▶▶ Paikas had been recruited since the 16th century by kings in Odisha from a variety of social groups to render martial services in return for rent-free land (nish-kar jagirs) and titles.
- ▶▶ After entering Odisha in 1803, the British introduced new revenue settlements, due to which many Odia proprietors ended up losing their lands to absentee Bengali landlords.
- ▶▶ Changes in the currency and revenue systems meant the Odias had to pay taxes in silver, which was more expensive for them, and resulted in their further marginalisation and oppression.
- ▶▶ In 1817, some 400 Kondhs, who belonged to the state of Ghumsur, banded together to revolt against the British.
- ▶▶ **Bakshi Jagabandhu Bidyadhar Mohapatra Bharamarbar Rai**, the highest-ranking military general of King of Khorda Mukund Dev II, led the Paikas to join the uprising.
- ▶▶ During the course of the rebellion, government buildings in Banapur were set on fire, policemen and British officials were killed, and the treasury was looted.
- ▶▶ The uprising lasted for a few months but was eventually crushed by the better-equipped and trained forces of the East India Company.
- ▶▶ Bakshi escaped to the jungles, and ultimately surrendered in 1825 under negotiated terms.

Nationalist Movement or A Peasant Rebellion?

- ▶▶ The Paika Rebellion is one among the peasant rebellions that took place in India when the British East India Company was expanding its military enterprise.
- ▶▶ Because these uprisings violently clashed with European colonialists and missionaries on many occasions, their resistance is sometimes seen as the first expression of resistance against colonial rule — and therefore considered to be “nationalist” in nature.

Why Is the Rebellion Being Remembered Now?

- ▶▶ In April 2017, to mark the 200th anniversary of the Paika Rebellion, Prime Minister Narendra Modi honoured descendants from 16 families that were associated with the uprising.

- ▶▶ In July 2017, the Odisha government decided to formally ask the Centre to declare the rebellion as the “first war of independence in Indian history”. On this, then Culture Minister Ashok Chandra Panda had said, “In the real sense, the rebellion of Khorda in 1817 is the first well organised rebellion against the British.”
- ▶▶ In May 2018, after a review of school textbooks, the NCERT introduced a page on the Paika rebellion in the Class-8 history textbook. In December 2018, Prime Minister Modi released a stamp and a coin to commemorate the rebellion.

20. Industry 4.0

Why in News?

- ▶▶ A Pilot Project for ushering in ‘Industry 4.0’ in the country, is launched for implementation at the Modern Coach Factory (MCF), Raebareli.

Industry 4.0:

- ▶▶ ‘Industry 4.0’ commonly referred to as the fourth industrial revolution, is a name given to the current trend of automation, interconnectivity and data exchange in manufacturing technologies to increase productivity.
- ▶▶ Industry 4.0 is a complex Cyber-Physical Systems which synergizes production with digital technologies, the Internet of Things, Artificial Intelligence, Big Data & Analytics, Machine Learning and Cloud Computing.
- ▶▶ Therefore, the architecture to be conceptualized and formulated in MCF initially would be gradually expanded in a phased manner to encompass all complexities that constitute Industry 4.0 in all manufacturing spheres in the country.
- ▶▶ Full transition to the digital factory using ‘Industry 4.0’ across entire value chain from design to production will help enhance productivity hugely by providing insight into production process and also make the decisions in real-time basis.
- ▶▶ This will also help in minimizing human errors by effective monitoring to ensure that resources are put to the best utilization measured by, what is called the Overall Equipment Effectiveness (OEE).
- ▶▶ Such a National Policy for Advanced Manufacturing envisages that manufacturing sector should contribute at least 25% to GDP.
- ▶▶ All over the world, countries who have been able to achieve phenomenal growth, could do that with the advent of rapid strides in manufacturing sector. This initiative in Railways may have wider ramifications to spur growth in defence production as well as in private manufacturing sector also.