



**EXCEL**  
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# EXCEL QUEST

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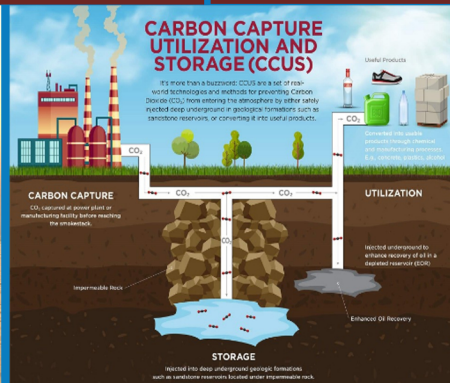
Equleus Spacecraft (EQUilibriUm Lunar-Earth point 6U)



Rise of pan-Turkism means for India



Fifth Scorpène-Class submarine Vagir delivered to Navy



Carbon capture utilisation and storage policy framework: NITI Aayog



NSIC signs MoU with Walmart



The Global Snow Leopard Ecosystem Protection Program (GSLEP)



Sarve Santu Niramaya- An Indian Ideal to carry off



Soil Management and Food Security

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## Director's Message

Dear Aspirants,

The RBI has launched pilots of Central Bank Digital Currency (CBDC) in both the Wholesale and Retail segments. The pilot in the wholesale segment, known as the Digital Rupee -Wholesale (₹-W), was launched on November 1, 2022, with the use case being limited to the settlement of secondary market transactions in government securities. The pilot in the retail segment, known as Digital Rupee-Retail (₹-R), was launched on December 01, 2022, within a closed user group (CUG) comprising participating customers and merchants. The CBDC is a digital token akin to the digital equivalent of a physical bank note which can be transferred electronically from one person to another. It can be stored in a digital wallet and can be spent similarly as cash.

The major difference between cryptocurrency and CBDC is that the former is a decentralized digital currency based on blockchain technology whereas the latter is a legal tender issued by a Central bank in a digital form. The CBDC is a sovereign currency issued by the Central bank according to the monetary policy of a country and is listed as a liability on its balance sheet. The holder of digital currency need not possess a bank account as it is fungible legal money.

One might wonder why a digital currency is being launched when the Unified Payments Interface (UPI) is already being used extensively in India. The major difference between the two is that CBDC is a currency in digital form whereas UPI is a platform where transactions happen digitally. In a UPI transaction, the amount is transferred from one bank account to another with the bank acting as the intermediary. When a person transacts using CBDC, money is transferred directly from one digital wallet to another without the intervention of a bank. Transacting using CBDC involves anonymity as is the way of dealing with cash, but the intermediaries keep a track of the transactions while using the UPI interface.

Expanding the scope of financial inclusion where the informal economy can be pushed into a formal one to ensure better tax and regulatory compliance could be one of the foremost advantages of CBDC. The inability of the banks to reach the interiors of the developing countries can be negated with the CBDC. The accessibility to smartphones can encourage individuals to use CBDC without having a bank account. Also, people could use CBDC as legal tender when cash is unavailable for certain reasons. CBDC would also help realise the vision of cashless society where the government would save the operational, printing, distributing and storing costs. CBDC also would encourage people to wean away from cryptocurrencies which are risk laden and very fluctuating in nature. CBDC in combination with RTGS would help the Central bank's vision of interoperability, transparency, accessibility and financial inclusivity.

The inherent risks associated with CBDC include the flight of money from the banking system to the wallets which would expand the liability side of the central bank's balance sheet. The threat of cyber-attacks and data privacy also lingers. The cost of operations and continuous upgradation of firewalls would be huge for the central bank. The central bank might not pay any interest for the balance in the digital wallet which might be non-appealing for prospective users. Also, the reduced privacy when compared to physical cash could be one more discouraging point for embracing CBDC.

Despite the disadvantages, the switch over to digital currency would help the government plug the loopholes and wipe out the black money from the system. RBI with its CBDC is offering a risk free alternative to cryptocurrency ensuring consumer protection along with the benefits of digital currency to the citizens of India.

Best wishes,

Yours sincerely,



K Rajendra Kumar IPS (Retd)

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## 1. NATIONAL

### 1.1 Ambedkar's India and the Dreams unfulfilled

#### Frame of reference-

- Recently released T J Gnanavel's movie 'Jai Bhim' is amongst those few movies that engages with issues of identity and institutionalised discrimination with some sincerity. It is based on the true story of the struggle of Parvathi, an Irula woman, who fights against the whole system on her own for justice for her husband.

#### Introduction

- When the nation is celebrating the 130th birth anniversary of B R Ambedkar, his role as a social reformer, chairman of the drafting committee of the Indian Constitution, and first law minister of the country is repeated and recited innumerable times. But what's forgotten is the fact that he wore many hats a distinguished economist, active politician, eminent lawyer, labour leader, great parliamentarian, fine scholar, anthropologist, orator, etc. The country has marked the beginning of the “Azadi Ka Amrit Mahotsav” to commemorate 75 years of Independence. It is imperative to reflect on Ambedkar in all his facets to grasp the gravity of his ideas, his role as a nation-builder and actions taken thereupon, to strengthen the social fabric and build a just society and stronger nation.

#### Ambedkar's entry into the freedom struggle

- Baba Saheb Dr. Bhimrao Ambedkar was born on 14th April, 1891 in Mahu in Madhya Pradesh. Born into a poor untouchable family, he was the fourteenth child of his parents.
- Ambedkar spent his whole life raising his voice against social discrimination, bringing in changes and disregarding the system of Chaturvarna – the Hindu categorisation of human society into four varnas – and the Indian Caste System.
- His entry into the freedom struggle started when he returned from London after his doctorate and PhD, and started movements and several steps against the caste system.

#### Organisations set up by him

- In 1923, he set up the 'Bahishkrit Hitkarini Sabha' (Outcastes Welfare Association).
- It was devoted to spreading education and culture amongst the downtrodden, improving the economic status and raising problems in the proper forums to solutions to the same.
- The Hilton Young Commission's recommendation, which considered Ambedkar's guidelines laid out in his paper 'The Problem of the Rupee: Its Origin and Its Solution', helped conceptualizing 'The Reserve Bank of India'.
- As a labour member in Viceroy's Executive Council from 1942 to 1946, he evolved numerous policies in the water, power and labour welfare sectors. He helped in establishing:



- Central Water Commission in the form of the Central Waterways, Irrigation and Navigation Commission (CWINC),
- Central Technical Power Board and integrated water resources management through the establishment of the river valley authority.
- It actively worked upon projects like the Damodar River Valley Project, the Sone River Valley Project, the Mahanadi (Hirakud Project), the Kosi and others on the Chambal and the rivers of the Deccan region.
- The Inter-State Water Dispute Act, 1956, and the River Board Act, 1956

### **His Journalistic career**

- In 1920, Ambedkar entered into the world of newspapers.
- He started his first newspaper, Mooknayak, on January 31, 1920.
- It ran for three years before being closed.

### **Later, he went on to found three more newspapers –**

- Bahishkrut Bharat (1927-1929),
- Janata (1930-56),
- Prabuddha Bharat (1956).
- He was directly involved in the editorial management of the first two newspapers, Mooknayak and Bahishkrut Bharat
- One of the very fascinating aspects of Ambedkar's journalism is manifested in his firm belief that journalism should not blindly cater to the masses. Instead, it should help in establishing democratic ideas.
- He argued that newspapers should lead the way by setting examples for the people.

### **His efforts and endeavours towards dalit upliftment and empowerment**

- In 1927, he led the Mahad March at the Chowdar Tank at Colaba, near Bombay, against the injustice by the higher classes to use public tanks for daily necessities.
- He burnt copies of the 'Manusmriti' publicly.
- This marked the beginning of the anti-caste and anti-priest movement.
- The temple entry movement launched by Dr. Ambedkar in 1930 at Kalaram temple, Nasik is another milestone of his life which reflects his dedication and will to deliver justice to the depressed classes and bring equality.
- During the Bombay Assembly's Poona session in 1937, he introduced a Bill to abolish the Khoti system of land tenure in Konkan.

- In Bombay, the historic peasant march to the Council Hall in 1938 was led by him.
- He was the first legislator in the country to introduce a Bill for abolishing the serfdom of agricultural tenants.
- As a member of the Bombay Assembly, Ambedkar opposed the introduction of the Industrial Disputes Bill, 1937, as it removed workers' right to strike.
- As a labour member, he advocated for "fair condition of life of labour" instead of securing "fair condition of work" and laid out the basic structure of the government's labour policy.
- He contributed to the reduction of working hours to 48 hours per week, lifting the ban on the employment of women for underground work in coal mines, introducing the provisions of overtime, paid leave and minimum wage.
- He also helped to establish the principle of "equal pay for equal work" irrespective of sex and maternity benefits.
- Ambedkar outrightly opposed the communist labour movements, their extraterritorial loyalties and their Marxian approach of controlling all means of production.

### **Communal award and the Poona Pact with Gandhiji**

- When Ramsay McDonald announced the 'Communal Award'. Gandhiji wanted to defeat this design as he knew that this was a part of the overall design of the British to divide and rule and, thus, went on a fast unto death to oppose it.
- On 24th September 1932, Dr. Ambedkar and Gandhiji reached an understanding, which became the famous Poona Pact.
- According to this Pact, in addition to the agreement on electoral constituencies, reservations were provided for untouchables in Government jobs and legislative assemblies.
- The provision of the separate electorate was dispensed with.
- The Pact carved out a clear and definite position for the downtrodden on the political scene of the country.
- It opened up opportunities of education and government service for them and also gave them a right to vote, all because of Ambedkar's farsightedness.

### **Role in Round Table Conferences and Quit India Movement**

- Ambedkar attended all the three Round Table Conferences in London and each time, forcefully projected his views in the interest of the 'untouchable'. He exhorted the downtrodden sections to raise their living standards and to acquire as much political power as possible.

**Views on different concepts****Hinduism:**

- He was of the view that there was no future for untouchables in the Hindu religion and they should change their religion if need be.
- He even converted to Buddhism on the line of his views and statement "Even though I was born in the Hindu religion, I will not die in the Hindu religion"
- He believed that the Hindu religion foisted its weaknesses upon the shudras and turned them into utter slaves of the three Varnas. They turned their religious, social, political and economic life into such that it could not be described as human life.

**Caste system:**

- In his speech in the last meeting of the Constituent Assembly, for instance, he had categorically said that the caste system and democracy cannot coexist.
- That is why the Indian Constitution barred discrimination on the basis of caste and language.
- He believed that any nation is formed by a coming together of its traditions, cultures, religions and languages. Therefore, nationalism has no place for parochialism.

**Future India:**

- Giving importance to the land, its society and the best traditions for nation-building, he stressed that the nation is not a physical entity. It is the result of continuous efforts, sacrifice and patriotism.
- He described nationality as “consciousness of kind, awareness of the existence of that tie of kinship”, as this is how people come close to each other and develop a sense of fraternity.

**Women:**

- Ambedkar was also a pioneer in his thinking on women’s education and jobs.
- He believed that the progress of a community ought to be measured “by the degree of progress which women had achieved”.
- He was probably the first scholar who tried to understand the position of women in the caste structure.
- That led him to advocate for rights and empowerment of women.

**Politics and Religion:**

- An age where both politics and religion have suffered such an enormous decline, Babasaheb Ambedkar offers us an example to learn from.
- For Ambedkar, the challenge of social revolution was inextricably bound to the art of inner transformation.

- Ambedkar's spirituality did not allow for a crude separation of the personal and the political.
- Ambedkar's insistence on a spiritualisation of human life constitutes the truly notable radicalism of his political struggle.
- This is his most significant contribution but also his most forgotten legacy.

### **His role as constitution's drafting committee head**

- Ambedkar drafted the Constitution with the vision that all the citizens of the country were Indians first; their other identities came later.
- Ambedkar's ideas had a unique confluence of politics, law, history and philosophy.
- In November 1948, while proposing to consider the draft of the Constitution, he explained the decision to call India a "Union of States" and not a "Federation of States". Ambedkar was concerned with the challenge of social separation in India, so he said, "If we want to build a democracy, we have to recognise the obstacles in our path because the grand palace of the Constitution stands on the foundation of people's allegiance in democracy."

### **Ambedkar was greatly influenced by the French Revolution and took three words as principles from there:**

- Liberty
- Equality
- Fraternity.
- These words included in the core of the Constitution also deeply influenced his political and social philosophy.
- That is why the fundamental rights provided by the Constitution enshrine the right to equality through Articles 14 to 18, the right to freedom through Articles 19 to 22 and the right against exploitation (Articles 23 and 24).
- His advocacy for universal adult franchise ensured that women had the right to vote immediately after Independence.
- His advocacy of the Hindu Code Bill was a revolutionary measure towards ameliorating women's plight by conferring on them the right to adopt and inherit.
- He contributed to developing federal finance.
- It also needs to be understood that Article 370 was also added to the Constitution against his will.



**Role in post-independence India**

- In 1947, when India became independent, the first Prime Minister Pt. Jawaharlal Nehru, invited Dr. Ambedkar (elected as a Member of the Constituent Assembly from Bengal) to join his Cabinet as a Law Minister.
- Though, later on, Dr. Ambedkar had differences of opinion with the Government over the Hindu Code Bill, which led to his resignation as Law Minister.
- He worked as the Chairman of the Drafting Committee of the Constitution and made the most epic and divine Constitution of the world.

**Dalit assertion in today's India and Ambedkar's teaching**

- The only leader from the pre-Independence era who continues to inspire millions, has become an icon of social revolt and is being discovered by more and more Indians across castes and religions is Babasaheb Ambedkar.
- But Dalit assertion in today's world brought both pros and cons of it

**Cons:**

- The violence against the depressed classes increased vehemently.
- As per the National Crime Records Bureau statistics, the total number of crimes against SCs in the country in 2010 was 32,643, of which UP accounted for 7,522 (23 per cent). The number of crimes increased to 47,064 in 2014, in which UP's share was 8,075. Though its share in the national tally fell by four percentage points to 17 per cent, it continued to top the list. UP's share declined because crimes against SCs increased in MP and Rajasthan.
- This tendency shows serious hidden defects in the society
- First, this reaffirms that caste constitutes the "basic structure" of Indian society.
- The foul mindset is more dominant in the "cow-belt" states i.e. UP, Bihar, MP, Rajasthan; compared to the southern states of Telangana, Andhra Pradesh, Karnataka, Tamil Nadu and Kerala
- Second, the rationalist anti-caste Dravidian movement initiated by Periyar E.V. Ramaswamy in Tamil Nadu and Narayana Guru's reformist movement in Kerala set the tone for social change in the south in the 20th century. The "cow-belt" states have not experienced any radical progressive social movement.
- Swami Dayanand Saraswati's Arya Samaj focussed on the supremacy of Vedic culture, which only reinforced the rigidity of caste-based hierarchy. This explains why cow vigilantism is largely confined to the "cow-belt" states.
- Third, caste-based hierarchy, to use Ambedkar's words, created "graded inequality" that gave a sense of caste superiority not only to the intermediate castes such as Thakurs, but also to many OBCs.

- Though this is a pan-Indian phenomenon, it is more pronounced in the “cow-belt” states.
- Fourth, caste remains the most influential factor in India’s electoral politics, particularly in rural areas, more pronounced in the “cow-belt” states’ rural locales.

**Pros:**

- Until about four or five decades ago, the Dalits would meekly surrender to the wishes of the so-called upper-castes in social, economic and political matters. This is no longer true.
- Access to higher and professional education has enabled horizontal and vertical social and economic mobility for Dalits.
- It has led to the creation of a class of writers, professionals, administrators and entrepreneurs within the Dalit community. This new class has started to refuse the conventional social stigmatisation and subordination of the Dalits by the upper castes.
- Ambedkar’s movement of Dalit liberation created a sense of confidence and assertion in the community, which in turn enabled it to overcome traditional feelings of defeatism.
- Dalit literature played an important role in sharpening confidence.
- Protests by students at the Hyderabad Central University in the wake of the suicide of Rohith Vemula, who faced caste-based harassment, Jignesh Mewani’s mobilisation of thousands of Dalits over the flogging of five Dalit youth for skinning a dead cow in Una, Gujarat, and now, mobilisation by the young lawyer Chandrasekhar and the Bhim Army at the Jantar Mantar in the national capital, are examples of Dalit assertion that seem to have upset casteist sections.

**Some factual points:**

- In 1936, the Independent Labour Party was founded by Ambedkar.
- During the Second World War in 1939, he called upon Indians to join the Army and fight against Nazism, which he said was another side of Fascism.
- On 24th May, 1956, on the occasion of Buddha Jayanti, he declared in Bombay, that he would adopt Buddhism in October. On October 14, 1956 he embraced Buddhism. On 6th December, 1956, Baba Saheb Dr. B.R. Ambedkar attained 'Mahaparinirvan'.
- The place where he was cremated according to Buddhist rites in Dadar is called Chaitya Bhoomi.
- His death anniversary is observed as Mahaparinirvan Din.
- His birth anniversary is celebrated as Ambedkar Jayanti or Bhim Jayanti on 14 April every year.
- In 1990, Dr.B.R.Ambedkar, was bestowed with Bharat Ratna.

- From 14th April 1990 - 14th April 1991, it was observed as the 'Year of Social Justice' in the memory of Ambedkar.
- The Government of India under the Ministry of Social Justice and Empowerment on March 24, 1992 established Dr. Ambedkar Foundation to commemorate Babasaheb's unending contributions for the unified development of India.
- Important books by Dr. Ambedkar: The Annihilation of Caste 1936; The Untouchables 1948; Buddha or Karl Marx 1956, etc.

### **Relevance-**

- The development of Panchteerth Janam Bhumi (Mhow), Shiksha Bhumi (London), Chaitya Bhumi (Mumbai), Diksha Bhumi (Nagpur), Mahaparinirvan Bhumi (Delhi) are steps towards ensuring an appropriate legacy for Ambedkar, the nationalist reformer. The successful implementation of the Mudra Scheme for availing loans, Stand-up India for promoting entrepreneurship in the SC and ST community, the expansion of the merit-cum-means scholarship, the Ayushman Bharat scheme, PM Awas Yojana, Ujjwala Yojana, Deen Dayal Upadhyay Gram Jyoti Yojna, Saubhagya Yojana, the simplification of labour laws are among the several measures that display the government's unwavering commitment to fulfil the dreams of B R Ambedkar.
- His philosophy of “bahujana hitaya bahujana sukhaya” and its belief in equality and justice is relevant today and will remain so in the future.
- The current pressures of politics and the resulting pragmatism may need the symbolic presence of Ambedkar, with Ambedkar being available for everyone.

## **1.2 Reforming Fertilizer Sector**

### **Frame of reference-**

- Recently, the government has announced an increase of 140% in the subsidy amount of DAP (Diammonium phosphate) fertilizer.
- Fertilizer subsidy has doubled in a short period of three years. For 2021-22, the Union Budget has estimated fertilizer subsidy at ₹79,530 crores (from ₹66,468 crore in 2017-18).
- In the last 20 years, the price of urea has increased to ₹5.36 per kg in 2021 from ₹4.60 in 2001. In the same period, the Minimum Support Price of paddy increased by 280% and that of wheat by 230%. In other words, in 2001, 37.7 kg of wheat was required to buy one bag of urea (50 kg), which has now reduced to 13.3 kg.

### **Nutrient Based Subsidy Scheme**

- Nutrient Based Subsidy (NBS) Programme for Fertilizers was initiated in the year 2010.

- Under the scheme, a fixed amount of subsidy decided on an annual basis is provided on each grade of subsidized Phosphatic and Potassic (P&K) fertilizers, except for Urea, based on the nutrient content present in them.
- The scheme is administered by the Department of Fertilizers under the Ministry of Chemicals & Fertilizers.
- In a recent development, the Cabinet Committee on Economic Affairs has approved the proposal of the Department of Fertilizers for the continuation of the Nutrient Based Subsidy (NBS) till 2019-20.
- The continuation of the Nutrient Based Subsidy Scheme will ensure that an adequate quantity of P&K is made available to the farmers at a statutory controlled price.

#### **Reasons for increase in Fertilizer Subsidy:**

- There are large subsidies based on end use only agricultural urea is subsidized which creates incentives to divert subsidized urea to industry and across the border. In fact, subsidized urea suffers from **3 types of leakages:**
  - 24 per cent is spent on inefficient urea producers
  - More inefficient the firm, the more subsidies it receives.
  - 41 per cent is diverted to non-agricultural uses and abroad
  - The 75 percent subsidy on agricultural urea creates a large price wedge which feeds a thriving black market diverting urea to industry and possibly across the border to Bangladesh and Nepal.
  - 24 per cent is consumed by larger, richer farmers.
  - On average this extra expenditure is 17 per cent, and in some states Punjab, UP and Tamil Nadu it is between 55 and 70 percent.
  - These leakages imply that only 35 per cent about Rs. 17500 crore of the total urea subsidy of Rs. 50300 crores reaches the intended beneficiaries, small and marginal farmers.
  - Underpricing urea, relative to other fertilizers, especially P & K, encourages overuse, which has resulted in significant environmental externalities, including depleted soil quality.
  - Multiple distortions price and movement controls, manufacturer subsidies, import restrictions feed upon each other, making it difficult to reallocate resources within the sector to more efficient uses.

#### **Plant Nutrients:**

- **Primary (Macro) Nutrients:** Nitrogen (N), Phosphorus (P), and Potassium (K), Calcium (Ca), Magnesium (Mg), Sulphur (S)
- **Secondary (Micro) Nutrients:** Boron (B), Chlorine (Cl), Copper (Cu), Iron (Fe), Zinc (Zn), etc.



**They are classified based on the essential component in the fertilizer:**

- **Nitrogenous:** Essential Component is Nitrogen (N). Example: Urea, Ammonium Nitrate, Ammonium Sulphate
- **Potassic:** Potassium Nitrate, Chile Saltpetre
- **Phosphatic:** Super Phosphate, Triple Phosphate

**Relevance**

- Fertilizer industry need to be made self-reliant and not depend on import of fertilizers. This way, we can escape the vagaries of high volatility in international prices.
- In this direction, five urea plants at Gorakhpur, Sindri, Barauni, Talcher and Ramagundam are being revived in the public sector.
- We need to extend the NBS model to urea and allow for price rationalization of urea compared to non-nitrogenous fertilizers and prices of crops.
- Also, we need to develop alternative sources of nutrition for plants. There should be a shift towards the use of non-chemical fertilizers as well as a demand for bringing parity in prices and subsidy given to chemical fertilizers with organic and bio fertilizers.
- This also provides the scope to use a large biomass of crop that goes waste and enhance the value of livestock byproducts.
- We need to scale up and improve innovations to develop alternative fertilizers.
- Finally, India should pay attention to improving fertilizer efficiency through need-based use rather than broadcasting fertilizer in the field.
- The recently developed Nano urea by IFFCO shows promising results in reducing the usage of urea. Such products should be encouraged.

**1.3 "Proffering Teens a new Lease of Life"****Frame of reference-**

Recently, a new study titled 'Returns on Investment in Adolescents Sexual and Reproductive Health in Rajasthan' has been released which is conducted by the Population Foundation of India. As there has been high prevalence of child marriages, reducing teenage programmes continues to be the biggest challenge in addressing issues related to the reproductive health of adolescents.

**Introduction:**

- Teenage pregnancy is a major problem and is more likely to occur in marginalized communities, commonly driven by poverty, lack of education and employment opportunities.

- It remains a major contributor to maternal and child mortality and leads to vicious cycle of ill- health and poverty.
- Teenage pregnancy has a direct or indirect effect on a number of social development indicators education, gender, health and nutrition indicators.
- Child marriage has prevailed in India from a very long time where an infant girl who hardly has taken few breaths after her birth get her marriage fixed mere at that time when she was just a child.
- Raja Ram Mohan Ray was one of the social reformers of India who raise his voice against the evil system of child marriage, sati, and widow remarriage.
- But ground reality at present time is that there is prevalence of child marriage which ultimately leads to teenage pregnancies.
- During 1860s, many reform associations like Brahma Samaj, Arya Samaj took up the cause of child marriage. Ishwar Chandra Vidyasagar took the first step against child marriages and due to his effort the Indian Penal Code prohibited the consummation of marriage if the girl was less than 10 years of age. But, still this age was low.
- The marriageable age fixed under the Brahma Act 1872, as it later came to known as the Native Marriage Act was 14 years for girls and 18 years for boys.

#### **Child marriage and Teen Pregnancy – Current Statistics in India:**

- According to the findings of the study recently conducted, more than one third of the girls get married before they cross 18 and 6.3% of girls in the age group of 15 to 19 years are already mothers or are pregnant.
- The prevalence is higher in rural areas (9.2%) compared to urban areas (5%).
- In 2017, an estimate of 11.8 million teenage pregnancies occurred in India.
- Pregnancy during teenage and child birth complications are the leading cause of death among 15 to 19 year old girls, with low-income and middle-income countries accounting for 99% of global, maternal deaths of women aged 15 to 49 years.
- According to the National Family Health Survey 4, the burden of teenage pregnancy was highest in Tripura (18.3%), West Bengal (18%) and Assam (14%).
- As per the latest NFHS-5, teenage pregnancies has increased from 18.8% to 21.9% in Tripura and reduced by just 2% in West Bengal and Assam.

**Observation of societal ills under the garb of legislation:**

- The government of India introduced the Prohibition of Child Marriage Act in 2007 and also did various awareness campaigns to enhance awareness regarding the ill-effects of child marriage and teenage pregnancy through mass-media campaigns.
- Although the efforts lead to decline in teenage pregnancy by almost 50% for the country but reduced only by 2% for states like Assam.
- A higher proportion of women belonging to SC and OBC experienced teenage pregnancy compared to women belonging to ST or general category.
- Lacks of education, lack of health and nutrition, severe anaemia in pregnancy, low birth weight, childhood malnutrition are the major effects of teenage pregnancy.
- Although awareness about contraceptives and their availability has increased but it continue to be discouraged in society. Women admitted to their husband's reluctance and social pressure to not use contraceptive measures.
- A woman in many forms of a girl, a daughter, a wife, a mother have been denied of their basic rights of decision-making and choosing on her own. Society has always imposed restrictions on women by taking the autonomy of a woman.

**Child marriage in Pre-Independent India:**

- Many social reforms and activists worked in the field of enhancing the status of a woman and fought against the evil system of child marriage.
- Some of them are – Raja Ram Mohan Roy, Ishwar Chandra Vidyasagar, Dayanand Saraswati, and Bal Gangadhar Tilak.
- Many efforts were made to make legislation on child marriage.
- The Child Marriage Restraint Act, 1929 popularly known as Sharda Act, after its sponsor Harbilas Sharda, fixed the age of marriage for girls at 14 years and boys at 18 years.
- In 1949, this act was amended and age of girls for marriage was made 15 years and in the year 1978, age of girls for marriage was made 18 years, subsequently.
- The All India's women conference, National Council of women in India articulated the argument in favor of raising the age for marriage and consent.

**Teen Pregnancy – driver to poor health status of women:**

- Teen pregnancy has led to severe problems like malnutrition, child wasting/stunting, increased maternal mortality rate and many health disorders.

- India's child malnutrition rates are still one of the most alarming in the world. The drawback of child and maternal malnutrition is responsible for 15% of India's total disease burden.
- The prevalence of underweight, stunted, wasted children under 5 was at 35.7, 38.4 and 21.0 per cent, as per NFHS-4.
- According to NFHS-5, out 22 states surveyed, only 9 showed a decline in the number of stunted children.
- India loses up to 4% of its GDP and 8% of its productivity due to child malnutrition.
- Prevalence of teenage pregnancies is highest in Tripura (21.9%) as per NFHS-5.
- Material Mortality Rate is 113 per 100,000 live births in sample registration system report 2016-18.
- Assam has highest maternal mortality at 2015.

**State wise disparity:**

- There has been prevalence of state wise disparity. States like Assam, Tripura, West Bengal are in much deteriorated state in the category of maternal mortality, prevalence of child marriage, teenage pregnancy as compare to other states.
- This is mainly due to lack of employment opportunities, illiteracy, vulnerable population, meagre income, lack of institutional deliveries for mothers, absence of antenatal care services, food shortages, lack of affordability to proper medical care.
- Current state is already worrisome so to achieve Sustainable Development Goals like – SDG 1 for no poverty, SDG 2 of zero hunger, SDG 3 for good health and well being, SDG 4 of quality education, SDG 5 of gender equality, the need is to focus on women's reproductive health.

**Some government initiatives and solutions to be adopted:**

- Government of India launched the Adolescent Reproductive and Sexual Health Strategy (2005- 2013) and Rashtriya Kishor Swasthya Karyakram in 2014 to address the problems of adolescent health.
- POSHAN Abhiyan was launched to reduce malnutrition among children by facilitating convergence and providing health and nutrition services for the first 1000 days.
- Integrated Child Development Services facilitates a supplementary nutrition programme, growth monitoring, health education, immunisation, health-checkups to beneficiaries.
- Government launched PM Matru Vandana Yojana which provides financial support to lactating and pregnant mothers.
- Massive awareness needs to be done to make people realize the disadvantages of early marriage and pregnancy and Anganwadi workers should be trained accordingly to address the issues of teenage pregnancy among the marginalized sections of society.

**Way forward:**

- The need of the hour is to address gaps in the present set up through public awareness, community engagement and empowerment not only economically but socially and politically also.
- Budgetary allocation should be increased on health, education alongwith stricter legislative and administrative norms.
- A proper inter-departmental convergence and resource allocation paves the way for eradication of severe malnutrition and food shortage.
- Improving infrastructure, reach of Anganwadis and ICDS centres, revamping the data- monitoring system is need to bridge what has been achieved and what was envisaged.

**1.4 Children's Climate Risk Index (CRI)****Frame of reference-**

- United Nations Children's Fund (UNICEF) in collaboration with FRIDAYS FOR FUTURE (FFF) has recently released “The Climate Crisis Is a Child Rights Crisis” report which is the first climate report to combine high-resolution geographic maps detailing global environmental and climate impacts with maps that show regions where children are vulnerable due to an array of stressors, including poverty and lack of access to education, health care or clean water.
- The report introduces the new Children’s Climate Risk Index (CCRI), a composite index that ranks nations based on children’s exposure to climate shocks, providing the first comprehensive look at how exactly children are affected by the climate crisis,
- Offering a road map for policymakers seeking to prioritise action based on those who are most at risk.
- Pakistan (14th), Bangladesh (15th), Afghanistan (25th) and India (26th) are among four South Asian countries where children are at extremely high risk of the impacts of the climate crisis.
- Earlier an analysis, based on Notre Dame Global Adaptation Initiative (ND-GAIN) index, had shown the impact of Climate Change on children across the world.

**Global situation**

- Countries like Central African Republic, Chad, Nigeria, Guinea, and Guinea-Bissau are analysed at maximum vulnerability where the children are at the highest risk.
- This is due to the acute shortage of even the basic necessities like water, sanitation, health and education and thus, the climate issues affects them deeply in diverse manners.
- Nearly every child around the world is at risk from at least one of the climate and environmental hazards which are Coastal Flooding, Riverine Flooding, Cyclones, Vector Borne Diseases, Lead Pollution, Heat waves and Water Scarcity.

- An estimated 850 million children – 1 in 3 worldwide – live in areas where at least four of these climate and environmental shocks overlap.
- As many as 330 million children – 1 in 7 worldwide – live in areas affected by at least five major shocks.
- The children from countries least responsible will suffer most of all due to Greenhouse gas Emissions (GHGs). They are more susceptible and precarious to toxic chemicals, temperature changes and diseases, among other factors.

**Indian scenario:**

- India is among four South Asian countries where children are most at risk of the impacts of climate change threatening their health, education, and protection.
- It is estimated that more than 600 million Indians will face ‘acute water shortages’ in the coming years, while at the same time Flash Flooding is to increase significantly in the majority of India’s urban areas once the global temperature increase rises above 2 Celsius.
- Twenty-one of the world’s 30 cities with the most polluted air in 2020 were in India.

**Recommendations:****Increase Investment:**

- Increase investment in climate adaptation and resilience for the key services related to children.

**Reduce Greenhouse Gas Emissions:**

- Countries need to reduce their emissions by at least 45% (compared to 2010 levels) by 2030 to limit the temperature rise no more than 1.5 degrees Celsius.

**Provide Climate Education:**

- Provide children with climate education and greens skills, critical for their adaptation to and preparation for the effects of climate change.

**Include Young People in Decisions:**

- Include young people in all national, regional and international climate negotiations and decisions, including at COP (Conference of the Parties- A climate Convention) 26 (It will be held in Glasgow, UK in November 2021).

**Ensure Pandemic Recovery is Inclusive:**

- Ensure the recovery from the Covid-19 pandemic is green, low-carbon and inclusive, so that the capacity of future generations to address and respond to the climate crisis is not compromised.

**About UNICEF:**

- Formerly known as United Nations International Children’s Emergency Fund is special program of UN devoted to aiding national efforts to improve the health, nutrition, education, and general welfare of children.

- It was created in 1946 to provide relief to children in countries devastated by World War II.
- It is headquartered in New York City.
- After 1950, it directed its efforts toward general programs for improvement of children's welfare, particularly in less-developed countries and various emergency situations.
- It was awarded Nobel Prize for Peace in 1965
- Its activities are financed by both government and private contributions.
- It supports immunization programs for childhood diseases and programs to prevent spread of HIV/AIDS.
- It also provides funding for health services, educational facilities and other welfare services.

### **Relevance**

- Global net man-made emissions of carbon dioxide must be nearly halved by 2030, and reach “net zero” by 2050.
- More countries need to work towards their commitment in the Convention on the Rights of the Child to ensure every child is protected from any of the social disasters.

## **1.5 Sarve Santu Niramaya- An Indian Ideal to carry off**

### **Frame of reference-**

- Recently, Prime Minister Narendra Modi has announced the National Digital Health mission under which all citizens will have the option of voluntarily opting for a Health ID.

### **National Digital Health mission has 4 key tea features.**

- Health ID
- Personal health records.
- Digi Doctor
- Health facility register
- NDHM will be implemented by National Health Authority under the ministry of Health and family welfare.

### **National Health ID-**

- It will be a repository of all health related information of a person. According to the National Health Authority, every patient who wishes to have their Health records available digitally must start by creating this Health ID.
- Each Health Id will be linked to a Health data consent manager – which will be used to seek the patient's consent and allow for seamless flow of health information from the Personal Health records module.
- It will contain details of every test, every disease ,the doctors visited, the medicines taken and the diagnosis.



- This ID can be created by using a person's basic details and mobile number or Aadhaar number.

#### **Probable benefits of this scheme-**

- National Health ID provides health data portability which means the doctor who is examining the patient can give more will inform advice and suggestions due to complete access to patient history which was not possible earlier, leading to better diagnosis.
- Mission will enhance efficiency and transparency in the health care services in the country.
- Citizen will be able to get access of health services and doctors easily even in remote areas by Tele-consultation.
- Mission will make easy for citizen to find the right doctors, seeking appointment, payment of fee, making several appointments with doctors leading to availability of the best possible healthcare.
- Private stakeholders will also get opportunity for creating their even products for health care services resulting in better quality.

#### **Issues and challenges-**

- Issues related to privacy- As a large amount of personal health data stored using health ID; there are possibilities of the health data to be misused in an absence of privacy law.
- Misuse by Insurance companies – large private insurance companies could use sophisticated algorithms access the databases to make risk profiles for people and make access to affordable insurance difficult.
- Data mining can prioritise certain rich demographics for their services and direct public and private resources to people who can afford a high premium for their services. This will create discrimination in providing health services.

#### **Crucial problems in health sector- a cause of concern -:**

- Lack of an adequate number of hospitals with trained staff makes it difficult for achieving the goal of universal health coverage.
- The size of the population is larger with huge proportion of rural population poses a major problem for providing accessible, affordable health care services.
- The cost of researching, finding, buying appropriate drugs and treatments are very high.
- When it comes to chronic illnesses and rare disorders, cost of treatment is very high leading to lack of affordable health care to the people.
- Inadequate Funding- Expenditure on public health funding has been low in India which is approximately 1.3% of GDP. As per OECD, India's total out of pocket expenditure is around 2.3% of GDP.
- Lack of focus on tackling Non-communicable diseases is in itself a major drawback for health care system in India.

- Poor infrastructure and management of services poses a bigger challenge for the access of health services.

### **Some international examples relevant for India's healthcare services-**

- China stated a system to provide health services to its citizens by the help of barefoot doctors who are healthcare providers. They underwent medical training and worked in rural areas in china. After receiving minimal basic medical and paramedical education, various farmers' folk healers, rural healthcare providers provided health care services to common people.
- Thailand's success has been attributed to what is called the Universal coverage scheme. Thailand's has their government-run insurance programmes and a comprehensive insurance scheme for civil servants. Thailand's public health expenditure is only about 3% of its GDP. Thailand also has a social insurance cover for its organised sector employees.

### **Government schemes providing health care services other than NDHM-**

#### **1) Ayushman Bharat-**

- It is an umbrella health program launched in 2018 covering health issues at all levels – primary, secondary, tertiary. It has two components-
- Pradhan Mantri Jan Arogya Yojana (PM-JAY) Health and wellness centres.
- Ayushman Bharat is the largest government funded healthcare programme in the world. PM- JAY will cover the financial protection for prevailing healthcare services at secondary and tertiary level.
- Health and wellness centres are aimed to provide cheap and quality health care

#### **2) National Rural Health Mission-**

- It was launched in 2005 to provide accessible, affordable and quality health care to the rural population. A special focus is on empowered action group states.

### **NRHM major initiatives includes-**

- ASHAs – Accredited social Health actions.
- Rogi Kalyani samiti (Patient welfare committee)
- United grants to sub-centres.
- Janani shishu suraksha karyakram- provide fare to &fro transport and free drugs.
- Mobile medical Units.
- Village health sanitation and Nutrition committee.

### **Way Forward**

- Healthier a nation, more progress in economy takes place. So, India should focus on improving health delivery system by increasing its public great expenditure from current 1.3% of GDP.

- Niti Aayog has recently published a document, Investment opportunities in India's Healthcare sector which states the expansion of private players to tier 2 and tier 3 hospitals along with manufacturing of medical devices.
- Various cutting edge technologies like AI, machine learning, cloud computing must be used for improving the current health care sector and eliminating the perils in the delivery of health services..

## **1.6 Kashmir's Resurgence**

### **Frame of reference**

The Army on Monday used a rare tool to wean off local youth from militancy screening a grim, black-and-white animation film of 2 minutes and 13 seconds named Back from Jaws of Death on 23 boys who were rescued from joining militants in north Kashmir's Bandipora in 1998.

### **Introduction to Kashmir issue**

- Maharaja Gulab Singh of Dogra Dynasty signed the 'Treaty of Amritsar' with the British East India Company in 1846. Under this treaty, he paid Rs. 75 lakhs to the East India Company in 1846 in exchange for Kashmir and some other areas. Jammu and Kashmir as a single entity was unified and founded (1846).
- However, Jammu and Kashmir, from 1846 until 1947, remained a princely state ruled by Jamwal Rajput Dogra Dynasty. Like all other princely states in India then, Kashmir too enjoyed only a partial autonomy, as the real control was with the British.

### **Kashmir at the time of Independence**

- During the time of partition of British India (1947), Jammu and Kashmir (J&K) was a Princely State. Britishers had given all princely states choice – either to join India or to join Pakistan or even to remain independent.
- The ruler of Kashmir during that time (1947) was Maharaja Hari Singh, the great-grandson of Maharaja Gulab Singh. He was a Hindu who ruled over a majority-Muslim princely state.
- He did not want to merge with India or Pakistan. Hari Singh tried to negotiate with India and Pakistan to have an independent status for his state. He offered a proposal of Standstill Agreement to both the Dominions, pending a final decision on State's accession. On August 12, 1947, the Prime Minister of Jammu and Kashmir sent identical communications to the Governments of India and Pakistan.

### **Attack by Pakistan**

- Pakistan, though entered into Standstill Agreement with Jammu and Kashmir, had an eye on it. It violated the Standstill Agreement by sponsoring a tribal militant attack in Kashmir in October 1947.
- Pashtun raiders from Pakistan supported by its Army invaded Kashmir in October 1947 and took control over a large area. Hari Singh appealed to the Governor General of free-India, Lord Mountbatten for assistance.

- India assured help on condition Hari Singh should sign the Instrument of Accession. Maharaja Hari Singh signed the instrument of accession with India (1947). It was also agreed that once the situation normalised, the views of the people of J&K will be ascertained about their future. The Maharaja Hari Singh signed Instrument of Accession to India on 26 October 1947 in Srinagar.
- As soon as the accession documents were signed, the Indian Armed Force took over the stage to repulse Pakistan-supported tribal assault. Indian and Pakistani forces thus fought their first war over Kashmir in 1947-48.
- India successfully drove out most of the Pak-supported tribal militants from Kashmir occupation. However, some part of the State continued to be under Pakistani control. India claims that this area is under illegal occupation. Pakistan describes this area as 'Azad Kashmir'. India however, does not recognize this term. India uses the term Pak occupied Kashmir (PoK) for the area of Kashmir under the control of Pakistan.

### **UN Intervention:**

- India referred the dispute to the United Nations Security Council on 1 January 1948. Following the set-up of the United Nations Commission for India and Pakistan (UNCIP), the UN Security Council passed Resolution 47 on 21 April 1948.

### **The UN Resolution was non-binding on India and Pakistan. However, this is what the UN resolution mentioned:**

- Pakistan is the aggressor in the state.
- Pakistan has to vacate all occupied territory in state and handover the vacated territory to India.
- India has to withdraw all its forces leaving aside enough to maintain law and order.
- India to conduct a plebiscite in the State.
- The new Jammu and Kashmir government ratified the accession to India. In 1957, Kashmir was formally incorporated into the Indian Union

### **Complicating Kashmir region**

#### **External Factors**

- Externally, ever since 1947, Kashmir remained a major issue of conflict between India and Pakistan (and between India and China to a minor extent).
- Pakistan has always claimed that Kashmir valley should be part of Pakistan. The conflict resulted in 3 main wars between India and Pakistan – 1947, 1965, and 1971. A war-like situation erupted in 1998 as well (Kargil war).

- Pakistan was not only the illegal occupant of the Kashmir region. China too started claiming parts of the princely state of Jammu and Kashmir.
- By the 1950s, China started to gradually occupy the eastern Kashmir (Aksai Chin). In 1962, India fought a war with China over its encroachments, however, China defeated India. To make matters worse, Pakistan ceded the Trans-Karakoram Tract of Kashmir (Saksham valley) to China.

### **Internal factors**

#### **Insurgency in Kashmir**

- After its humiliating defeat in 1971 war, Pakistan adopted the strategy of proxy war with India by promoting insurgency in Punjab and Jammu & Kashmir. Till 1987, the insurgency in Kashmir was low intensity warfare. In 1987 assembly elections, an eleven party oppositional alliance won only four seats despite its popular support, and a dispute started about rigging in the elections. This dispute had set the stage for birth of insurgency in the Kashmir valley in 1989. Within no time, it was escalated and the armed insurgent groups demanded sovereignty and freedom from the Indian state.

#### **Key players were**

- In the beginning, two main groups of the armed insurgents were the Jammu and Kashmir Liberation Front (JKLF) and the Hizbul-Mujahideen.
- Lashkar-e-Taiba (LeT), Jaish-e-Mohammed (JeM) were the latter faces.

### **Mediation in Kashmir**

#### **Background**

- Early attempts were made by the UN after India filed a complaint against Pakistan in POK to the UNSC in 1948.
- UN then set up United Nations Commission for India and Pakistan (UNCIP) which proposed 3-point action plan
- Pakistani demilitarization of the Kashmir region
- India's reduction in military presence
- Final resolution by Plebiscite
- Pakistan refused to take action and the plan never came into force.
- In 1962, US provided India with defence equipments during war with China on the condition of India agreeing to mediate talks with Pakistan on Kashmir.
- After the war, US and UK tried 6 rounds of negotiations between India and Pakistan.
- Talks ended with the clear indicative by Nehru that India would never give up Kashmir.

- Since then, India resisted any third party mediation due to various reasons:
- Shimla agreement 1971
- Lahore Declaration 1999
- India believes that Third party comes with their own agenda and would try to accomplish that in the name of mediation.
- India eyes itself as a regional leader and doesn't need any assistance in solving disputes with neighbours.
- Historical suspicion too creates an air of distrust as previous attempts by US, UK, World Bank, Russia etc. have failed to bring any results.

### **Extremism and Radicalisation in Kashmir**

- In the last few years, Jammu and Kashmir (J&K) has witnessed a discernible rise in the levels of radicalisation and violent extremism. There has been a marked increase in local recruitment of terrorist groups.
- The youth today appear far more emboldened to disrupt military operations and challenge the State authority, especially in the Kashmir Valley. The frenzied stone-pelting mobs at the encounter sites, of late, have demonstrated increasing levels of motivation and boldness in facilitating the escape of terrorists.
- The Inter-Services Intelligence (ISI) sponsored propaganda and psychological operations based on toxic, warped and intolerant religious and ideological narratives have been instrumental in proselytising the people, eroding the ideals of 'Kashmiriyat' and gradually sowing the seeds of jihadist culture.
- Pakistan has effectively employed the cyberspace, subverted sections of the media and its proxies in the state for this purpose.
- The Friday prayers at the mosques are being used to fuel extremism and the young impressionable minds at the madrassas are also being surreptitiously subjected to jihadist ideology on a daily basis.
- Pakistan has also leveraged the existing communal fault lines in other parts of our country to create insecurities that bolster secessionist tendencies and an inclination for a new political order.

### **Initiatives by Army and Government**

#### **Government approach in Jammu & Kashmir Insurgency**

- India's present response to insurgency in Kashmir is multi-dimensional.
- Military response against violence and prevention of infiltration across border areas,
- Political dialogue and negotiations with those who have given up violence,

- Economic and social developmental measures to improve the living conditions and employment prospects of the local population,
- Encouraging the democratic activity in the Kashmir
- Diplomatic initiatives towards peace which include confidence building measures with Pakistan, and international counter-terrorism cooperation with friendly countries.

### **Military response against insurgency in Kashmir**

- Indian army's Northern Command is prime responsible for tackling terrorism and insurgency in Kashmir.
- Operations of the Army, police, and the paramilitary forces in the region are coordinated by a Unified Headquarters.
- The Paramilitary forces include the Border Security Force, Central Reserve Police Force and Special Forces.
- The Rashtriya Rifles (RR) is a specially organized force to deal specifically with counter insurgency.
- The main aspect of Indian approach to counterinsurgency operations in Kashmir is to stop the infiltration of insurgents from launch pads and training camps in Pakistan across the LOC and the between gaps in the International Border.
- To plug the major infiltration routes, India fenced the LOC. The retired Army soldiers from the local villages have been organized into Village Defence Committees.
- India is continuously following up the modernization of its army with new equipment and training. Intelligence agencies have been organized to provide real-time information

### **Contemporary events till now**

#### **Delhi Agreement**

- In 1951, the State Constituent Assembly was elected. It met for the first time in Srinagar on 31st October 1951.
- In 1952, "The Delhi Agreement" was signed between Prime Ministers of India and Jammu & Kashmir giving special position to the State under Indian Constitutional framework.
- On 6th February 1954, the J&K Constituent Assembly ratified the accession of the State to the Union of India.
- The President subsequently issued the constitution order under Article 370 of the Constitution extending the Union Constitution to the State with some exceptions and modifications.



**J&K Constitution**

- The state's own constitution came into force on 26th January, 1957 under which elections to the state legislative assembly were held for the first time. This constitution also ratified the state's accession to the Union of India.
- Section 3 of the constitution says Jammu & Kashmir is and shall be an integral part of the Union of India.

**Article 370**

- The provision of Article 370 was drafted by Diwan Bahadur Sir Narasimha Gopaldaswami Ayyenger who served as PM of J&K from 1937-1943.
- In the Indian Constitution, it was included as a temporary provision that grants special status to J&K.
- All the provisions of the Constitution which are applicable to other States are not applicable to J&K except for defence, foreign affairs, finance and communications.
- Parliament needs the state government's concurrence for applying all other laws.
- The state's residents live under a separate set of laws, including those related to citizenship and ownership of the property.
- It gives J&K a unique power to have a separate Prime Minister, President, flag and constitution.
- Due to special provisions attached to this article, it always remains debatable. Those who are against it argue that it hampers integration process of J&K with the rest of the country.

**Article 35A**

- It came into existence through a Presidential Order in 1954 and it gives the J&K assembly the right to decide the definition of Permanent residents of the state and prevent the people of the other states from buying real estate in J&K.
- According to the constitution of J&K, a permanent resident is defined as a person who was a state subject on 14th May, 1954 or who has been residing in the state for a period of 10 years and has lawfully acquired immovable property in the state or migrated from the state after 1st March, 1947 and has gone within the present Pakistani border area but has comeback with resettlement permit in the state.
- Under this, citizen of any other state can neither buy property in J&K nor can they become permanent resident of the state.
- The presidential order provided that only the original residents of J&K will have right to scholarships, services, land and settlement.

- It stated that if a girl who is a citizen of J&K marries an outsider then she will lose her right to ownership of property. In 2002, the J&K High Court issued an order stating that in such cases, a girl's right will continue for life.
- It gives special powers to J&K as a state i.e. the state government has right to give and abstain privileges to people who migrated there during independence and other Indian nationals in J&K.
- Some experts argue that spirit of Article 35A flows from Article 370 while some other argue that it is not constitutional as it came through a presidential order.

### **Shimla Agreement, 1972**

- The Shimla Agreement signed by Prime Minister Indira Gandhi and President Zulfikar Ali Bhutto of Pakistan on 2nd July 1972 was much more than a peace treaty seeking to reverse the consequences of the 1971 war.
- It was a comprehensive blue print for good neighbourly relations between India and Pakistan.
- Under the Shimla Agreement both countries undertook to abjure conflict and confrontation which had marred relations in the past, and to work towards the establishment of durable peace, friendship and cooperation.
- The Shimla Agreement contains a set of guiding principles, mutually agreed to by India and Pakistan, which both sides would adhere to while managing relations with each other. These emphasize: respect for each other's territorial integrity and sovereignty; non-interference in each other's internal affairs; respect for each other's unity, political independence; sovereign equality; and abjuring hostile propaganda.

### **The following principles of the Agreement are, however, particularly noteworthy:**

- A mutual commitment to the peaceful resolution of all issues through direct bilateral approaches.
- To build the foundations of a cooperative relationship with special focus on people to people contacts.
- To uphold the inviolability of the Line of Control in Jammu and Kashmir, which is a most important CBM between India and Pakistan, and a key to durable peace

### **Lahore Declaration, 1999**

- Shall intensify their efforts to resolve all issues, including the issue of Jammu and Kashmir.
- Shall refrain from intervention and interference in each other's internal affairs.
- Shall intensify their composite and integrated dialogue process for an early and positive outcome of the agreed bilateral agenda.

- Shall take immediate steps for reducing the risk of accidental or unauthorised use of nuclear weapons and discuss concepts and doctrines with a view to elaborating measures for confidence building in the nuclear and conventional fields, aimed at prevention of conflict.
- Reaffirm their commitment to the goals and objectives of SAARC and to concert their efforts towards the realisation of the SAARC vision for the year 2000 and beyond with a view to promoting the welfare of the peoples of South Asia and to improve their quality of life through accelerated economic growth, social progress and cultural development.
- Reaffirm their condemnation of terrorism in all its forms and manifestations and their determination to combat this menace.
- Shall promote and protect all human rights and fundamental freedoms.
- Refugees from Western Pakistan (1947) are still deprived of the fundamental rights and identity in the state. Such people can vote in Lok Sabha elections but can't vote in local bodies and assembly elections.
- In 1957, about 200 families of the Valmiki Community were brought from Punjab to J&K as Safai Karamcharis. They have been given conditional state subject rights i.e. they can own property but cannot take up any other job.
- In January 1990 after the death of nearly a fifty people in military firing, there was rapid increase in militant activities.
- Violence spread throughout the valley.
- Srinagar's Doordarshan was attacked and its Director was killed and then the attacks against the Kashmiri Hindu community also started.
- Due to selective killings, most of the minority community fled their homes and migrated to the other parts of the Country. After that, they settled in Delhi or wherever they found the place. They have been demanding for their rehabilitation for a long time.

### **Abrogation of Special Status**

- On 5th of August 2019, the President of India promulgated the Constitution (Application to Jammu and Kashmir) Order, 2019.
- The order effectively revokes the special status accorded to Jammu and Kashmir under the provision of Article 370 - whereby provisions of the Constitution which were applicable to other states were not applicable to Jammu and Kashmir (J&K).
- According to the Order, provisions of the Indian Constitution are now applicable to the State.
- This Order comes into force "at once", and shall "supersede the Constitution (Application to Jammu and Kashmir) Order, 1954."

- A separate Bill - the Jammu and Kashmir Reorganisation Bill 2019 - was introduced to bifurcate the State into two separate union territories of Jammu and Kashmir (with legislature), and Ladakh (without legislature)
- Jammu and Kashmir Reservation (Second Amendment) Bill, 2019 was also introduced to extend the reservation for Economically Weaker Sections (EWS) in educational institutions and government jobs in Jammu and Kashmir.

### **Conclusion**

- It requires an enduring strategy that focuses not just on targeting the external and internal actors and conditions that fuel radicalisation but also attends to the process of de-radicalisation. Logically, it should form an additional dedicated prong of our overarching national strategy that aims at bringing normalcy in J&K. In addition to the ongoing military operations, it will require a coordinated deployment of our political, diplomatic, economic, social, and perception management prowess.
- Improvements in governance are necessary, whereby political leaders at all levels and the administration remain committed to the aspirations of the people. The state's Anti Corruption Bureau should be revitalised to deal with widespread corruption, which has precluded the desired economic development in the state. Sincere efforts should also be made in addressing the feelings of any perceived injustice. Rogue political and community leaders, who are playing to the tune of negative elements and spoilers, should be sternly dealt with as per the law.
- Contemporary educational infrastructure with dedicated security cover should be created and the religious preachers at the mosques should not be allowed to spew venom and spread jihadist ideology.
- Since poverty creates exploitable conditions for radicalisation and idle minds are the root of all evil, job opportunities should be created expeditiously by giving a boost to tourism, developing infrastructure and raising additional Home Guards and security forces units
- On the military front, the security forces should continue with their people-friendly counter proxy war operations, employing smart power, which is an imaginative mix of both hard and soft power.

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## 2. INTERNATIONAL RELATIONS

### 2.1 NAM Dying a Slow Death

#### Context

The birth anniversary of Jawaharlal Nehru and the 60th anniversary of the Non-Aligned Movement gave prompt reflection on Nehru's major contribution to the field of international relations.

#### NAM

- The Non-Aligned Movement (NAM) was initiated and founded during the collapse of the colonial system and the independence struggles of the peoples of Africa, Asia, Latin America and other regions of the world and at the height of the Cold War.

#### Congress of Vienna

- The concept of not aligning a country's policy with others can be traced to the Congress of Vienna (1814-15) when the neutrality of Switzerland, by which that country would keep out of others' conflicts, was recognised
- The Congress of Vienna dissolved the Napoleonic world and attempted to restore the monarchies Napoleon had overthrown.
- The Congress was the first occasion in history where on a continental scale, national representatives came together to formulate treaties.

#### Birth of NAM

- It is considered that the Bandung Asian-African Conference is the most immediate antecedent to the creation of the Non-Aligned Movement. This Conference was held in Bandung on April 18-24, 1955 and gathered 29 Heads of States belonging to the first post-colonial generation of leaders.
- Bandung conference laid down ten principles that would govern relations among large and small nations.
- A key role was played in this process by the then Heads of State and Government Gamal Abdel Nasser of Egypt, Kwame Nkrumah of Ghana, Shri Jawaharlal Nehru of India, Ahmed Sukarno of Indonesia and Josip Broz Tito of Yugoslavia, who later became the founding fathers of the movement.
- Six years after Bandung, the Movement of Non-Aligned Countries was founded on a wider geographical basis at the First Summit Conference of Belgrade, which was held on September 1-6, 1961.
- Gandhi's view- he believed in nonviolent solutions and spirituality, with India having a civilizing mission for mankind.
- Nehru's view- he had the desire to innovate in world politics and focused on the conception of modernity. He was opposed to the conformity required by both sides in the cold war.

**Objectives of NAM-**

- NAM has sought to “create an independent path in world politics that would not result in member States becoming pawns in the struggles between the major powers.”
- It identifies the right of independent judgment, the struggle against imperialism and neo- colonialism, and the use of moderation in relations with all big powers as the three basic elements that have influenced its approach.

**Purposes of NAM**

- To promote and reinforce multilateralism
- To serve as a forum of political coordination of the developing countries to promote and defend their common interests
- To promote unity, solidarity and cooperation between developing countries based on shared values and priorities agreed upon by consensus.
- To defend international peace and security and settle all international disputes by peaceful means
- To encourage relations of friendship and cooperation between all nations based on the principles of International Law
- To promote and encourage sustainable development through international cooperation
- To promote peaceful coexistence between nations, regardless of their political, social or economic systems.

**Paradox of NAM movement**

- Nehru ji always saw world problems as interlinked and not a binary of right and wrong.
- He considered India’s interest first, even before the merits of the case.
- This represents the paradox of a moral orientation in foreign policy and the compulsions of the real world.

**Historical events when India followed non alignment-**

- India played a prominent role as facilitator at the 1954 Geneva peace conference on Indochina.
- India also kept itself equidistant from both Koreas and Vietnam by not recognising them.
- But, India recognised one party in two Chinas and two Germanies , which was opposite of the non alignment ideology.
- International events when India moved away from NAM- During the Indo Pakistan war in 1971, two major alignments occurred when US aligned with Pakistan and Soviet union aligned with India. In 1971, with the signing of the Indo-Soviet Treaty of Friendship and Cooperation and India’s involvement in the

internal affairs of its smaller neighbours in the 1970s and 1980s tarnished its image as a non-aligned nation.

### **Causes of failures of NAM-**

- When Yugoslavia and Egypt became non aligned by defying the great powers and convened the first summit conference of NAM in 1961, Nehru who never considered confrontational methods, became a third but hesitant co- sponsor. And according to then Defence minister Krishna Menon ,true non alignment was to be non aligned towards the non aligned.
- Also, another instance which indicates failure of NAM , when Cyprus and Ethiopia , the two members of the conference, supported India in the war with China
- Many non aligned members have plentitude of varying alignments.
- There were also lack of collective action and self reliance, and non establishment of an equitable international economy or order.

### **Relevance of NAM for India in present times-**

- NAM is very much important to maintain a bridge between the political and ideological differences existing in the international relations to maintain peaceful world order, when it comes to India's bilateral and multilateral relations.
- It can act as a platform to raise critical issues and challenges like climate change, Terrorism, Drug trafficking, organised crime etc.
- It's keen to support the concept of sustainable development & can lead the world toward sustainability.
- The idea of preserving the independence of every nation to save the territorial integrity and sovereignty holds its relevance.
- It can be seen as an economic forum for India to increase its economic trade and relations with other member countries.

### **Conclusion-**

- The achievement of the NAM is that it has become an alternative policy, promoting co- existence, peace, disarmament, predominantly nuclear, the equal relationship among states, and opposition to bloc division and policy.
- The Non-Aligned policy is not neutral but a dynamic one. The Non-Alignment has grown from a policy to a movement and shifted its focus from world peace and security to economic and environmental issues.
- The Non-Aligned Movement, faced with the goals yet to be reached and the many new challenges that are arising, is called upon to maintain a prominent and leading role in the current International relations in



defense of the interests and priorities of its member states and for achievement of peace and security for mankind.

## **2.2 Dynamism in India-U.S. Ties**

### **Recently**

- In November, a congressional delegation (CODEL) led by U.S. Senator John Cornyn travelled to the Indo-Pacific Command countries including India, Philippines and Taiwan.
- The delegation noted the “increasing convergence of strategic interests” between India and the U.S. and pointed out for enhancing further cooperation and to promote global peace and stability.

### **Indo – Pacific Command:**

- Indo-Pacific is a single strategic construct linking the contiguous waters of the western Pacific and the Indian Ocean.
- The Indo-Pacific construct means different things to different people.
- For the US, it extends up to the west coast of India which is also the geographic boundary of the US Indo-Pacific command whereas for India it includes the entire Indian Ocean and the western Pacific.
- The ASEAN countries look at Indo-Pacific as a consociational model (means turning fragmented political culture into stable one) , thus bringing in China not only for the sake of giving it some stakeholder ship but looking for ways to cooperate with it in the region.

### **Strategic significance of Indo-Pacific region for India:**

- **Strategic significance:** Indo-Pacific is a multipolar region, contributing more than half of the world’s GDP and population. A stable, secure and prosperous Indo-Pacific Region is an important pillar of India’s strategic partnership with the other countries especially USA.
- **Mineral Resources:** Maritime territories have emerged as depositories of vital resources ranging from fish stocks to minerals and offshore oil and gas. The South China Sea, for instance, is estimated to hold some 10% of the global fish resources as well as 11 billion barrels of oil and 190 trillion cubic feet of gas.
- **Economic Growth:** According to a report of the Asian Development Bank (ADB), countries in the Indo-Pacific produce over 60% of global GDP, making the region the largest single contributor to global growth. Thus, the region is important for India’s economic growth and aim of reaching a \$5 trillion economic goal.
- **Commerce:** The region consists of many of the world’s vital choke points for global commerce, including the Straits of Malacca which is very critical for the growth of the world economy. The Indo-

Pacific region also stands at the intersection of international trade, with around 32.2 million barrels of crude oil pass through annually and 40% of global exports come from the region.

- **Maritime Trade:** Pacific islands are strategically significant from New Delhi's point of view as they sit astride important sea lines of communication through which important maritime trade is conducted.
- **Connectivity:** India is planning to put greater energy to the IORA because the heart of its Indo-Pacific policy is rooted in the Indian Ocean. This integrates the blue economy part of the Indian policy with the security part.
- **Chinese threat:** China's increasingly active presence in the Indian Ocean region as well as its efforts to expand geopolitical reach in Asia and beyond by the use of trade and military demand rule-based order to secure India's interests and free trade. In the present time, the control of sea lanes and ports would be the game.
- **Freedom of navigation:** It is important to adhere to freedom of navigation, adherence to rules-based order and stable trade environment. Also for free sea and air lanes, connectivity and upholding international rules and norms.

### **Defense Agreements Signed Between India and USA**

- The USA has signed 4 important military agreements with India. These agreements are usually signed by the USA with its defense allies for smoother military cooperation. The list of agreements are given below.
1. **General Security of Military Information Agreement (GSOMIA)** – It was signed in 2002, to facilitate sharing military intelligence between India and the USA.
    - GSOMIA paved the way for greater technology cooperation in the military sector.
    - It allows the sharing of classified information from the U.S. government and American companies with the Government of India and Defense Public Sector Undertakings (DPSU) but not with Indian private companies.
  2. **Logistics Exchange Memorandum of Agreement (LEMOA)** – It was signed in 2016, as per this agreement. India and USA can use each other's military bases to carry out repairs and for resupplying.
    - It gives both the nations access to each other's military facilities. But it does not make it automatic or obligatory.
    - It is a tweaked India-specific version of the Logistics Support Agreement (LSA) which the
    - U.S. has with several countries it has close military to military cooperation.
    - The agreement will primarily cover four areas port calls, joint exercises, training and Humanitarian Assistance and Disaster Relief. Any other requirement has to be agreed upon by both sides on a case-by-case basis.

- 3. Communications Compatibility and Security Agreement (COMCASA)** – This agreement is to share and secure communications exchange between 2 nations during training exercises and operations.
- COMCASA is meant to provide a legal framework for the transfer of communication security equipment from the U.S. to India.
  - This would facilitate “interoperability” between their forces and potentially with other militaries that use U.S. origin systems for secured data links.
- 4. Basic Exchange and Cooperation Agreement (BECA)** It is signed on October 27th 2020, India and the United States signed the Basic Exchange and Cooperation Agreement – BECA.
- It was signed during the third round of 2+2 dialogue.
  - It facilitates exchange of geospatial information. It would set a framework through which the US could share sensitive data to aid targeting and navigation with India.

These agreements can bring military advantage to India though they have been politically contentious. Also, it is feared that they may undermine India’s military autonomy.

#### **Conclusion:**

- Indo Pacific is a strategic space which offer a number of challenges and opportunities for India and all other stakeholders.
- Appropriate diplomatic maneuvering and economic and military assertion is vital for the implementation of India’s interests in the region along with leveraging the space as a building block for a multipolar world order.

### **2.3 Bharath response to the rise of Pan Turkism**

#### **Recently-**

The influence of Turkey is expanding in European region.

#### **Internationalism**

Internationalism implies a feeling of brotherhood nourished by all people of the world. It is a system of feeling, thought and action designed to promote peaceful co-operation and co- existence. All of us are parts of a single unified society and our needs are inter-dependent.

Distances mean nothing in these days of high-speed. The need for inter-dependence is now more urgent than ever before. No longer is it for a nation to isolate itself from the rest of the world.

#### **Indian tryst with Internationalism**

- India has a middle power status and a rising power mindset.
- The emerging multi polar world manifests opportunities as well as challenges to India’s foreign policy.

- The newness quotient is Prime Minister Narendra Modi's 'economy first' approach rooted in his desire to create external conditions necessary to ensure domestic economic progress.
- He has displayed dynamism while engaging all major powers, promoting and reintegrating India with the global economy, promoting greater cooperation with South Asian neighbors and renewing strategic connections in the Indian Ocean, the Middle East, Central Asia and Africa.
- Pragmatism in India's foreign policy is seen in Indo-US relations reaching a new level or in cooperation with China on climate change while opposing its territorial claims in the South China Sea and One Belt One Road Project.
- To counter China, India has sought close strategic partnerships with the USA and its allies and main partners in Asia-Pacific while retaining its strategic autonomy.
- A major challenge to India's foreign policy is the downward spiral of relations with Pakistan
- By all reckoning, India has arrived on the world stage. In the last three decades, India's large and rapidly expanding economy coupled with its huge population and its nuclear powers captured international attention and enhanced the image of India with a profound change

### **Benefits of Internationalism**

- Internationalism should be pursued in order for the world and its people to have to have lasting safety and security.
- With the world that people now live in internationalism should be the main focus to try and help combat against terror and violence. To try and make the world safe for everyone no matter the culture, ethnicity or financial state.
- The World Trade Organization (WTO) sets agreed upon terms for international trade that aim to ensure that all trade is reasonably fair and minimizes any manipulation between trade partners with any power inequities. It has also been successful in playing a significant role in the widespread reduction of trade protectionism - a concern that has existed since at least the time of mercantilism
- We also have a number of globally systemic issues that currently exist and will potentially exist that cannot be resolved through the decisions of a single-state actor. Some of these include and may include: climate change, artificial general intelligence, nuclear disarmament, modifying the human genome, automation, cyber terrorism, global tax avoidance, and catastrophe risk.
- The most prominent examples of internationalism today include Intergovernmental Organizations' (IGO's) such as the EU, African Union, World Bank, UN, NATO, ASEAN, IPCC, WTO, Mercosur, OECD, and the League of Arab States.

### **Internationalist card by Turkey**

- Turkey has stunned much of the world with its military power projection into the region.

- In the war between Armenia and Azerbaijan earlier this year, Turkish military intervention decisively tilted the war in favor of the Azerbaijan.
- Many in the region are beginning to purchase Turkish drones that played a key role in Azerbaijan's victory. Last year, Kazakhstan signed an agreement for wide-ranging defense and security cooperation with Turkey.
- The Kazakhstan, a member of the Russia-led regional security bloc, is moving towards strategic cooperation with Turkey, a member of US-led NATO, points to the thickening pan-Turkic bonds in a rapidly changing regional order.
- For the Central Asian states, living under the shadow of Chinese economic power and Russian military power, Turkey offers a chance for economic diversification and greater strategic autonomy.
- Turkey was the first Muslim-majority nation that established full diplomatic relations with Israel.

### **Council of Turkic States**

- President Turgut Ozal convened the first Turkish summit with some central Asian states in 1992.
- The arrival of Erdogan as the leader of Turkey in 2002 speeded up the process. He converted the annual summit with the inner Asian states into a Council of Turkic States in 2009.
- Azerbaijan, Kazakhstan and Kyrgyzstan joined Turkey as founding members.
- In Ankara, it was hailed as the “first voluntary alliance of the Turkic states in history”. Uzbekistan joined the council last and raised its profile at the Istanbul summit last week
- At a summit of the Council's leaders last week in Istanbul, it was announced that the forum has been elevated to an “Organisation of Turkic States”.
- Hungary, which has a long history of association with Turkic people, and Turkmenistan have observer status.
- At least a dozen other countries have apparently shown interest in getting observer status.
- The OTS also adopted a vision document called “Turkish World 2040” that will guide the organization's efforts to develop intensive cooperation among its members and contribute vigorously to regional and international security.

### **Pan Turkey ideology**

- The ideology of pan-Turkism is not new. Its origins date back to the mid-19th century when campaigns for uniting Turkic people in Russia gained traction. Its geographic scope would eventually become much wider, covering the huge spread of Turkic people from the “Balkans to the Great Wall of China”. A defining slogan of pan-Turkism is this: “Where there are Turks, there is Turkey.”

### **Turkey progress in last three decade**

Over the last three decades, a number of soft power initiatives in education, culture, and religion have raised Turkey's profile in Central Asia and generated new bonds with the region's elites. But it is in the domains of hard power in commercial and military that Turkey's progress has been impressive.

- Nearly 5,000 Turkish companies work in Central Asia.
- Turkish annual trade with the region is around \$10 billion. This could change as Turkey strengthens connectivity with Central Asia through the Caucasus.
- Turkey has also made impressive progress in building transportation corridors to Central Asia and beyond, to China, Georgia and Azerbaijan. The so-called Lapis Lazuli Corridor now connects Turkey to Afghanistan via Turkmenistan.

### **Difference between India and Turkey**

- India was non-aligned and Turkey, a member of the Western Cold War alliances like NATO.
- Turkey tilted to Pakistan on the Kashmir issue, and India moved closer to Nicosia in Turkey's dispute with Cyprus
- Turkey's growing role in Afghanistan opens a more difficult phase in relations between Delhi and Ankara. India's opposition to alliances and Turkey's alignments reflected divergent international orientations between both the countries.
- Turkey's Islamist internationalism under Recep Tayyip Erdogan has inevitably led to its deeper alliance with Pakistan, greater meddling in South Asia, and a sharper contraction with India.

### **Dealing with Turkey**

- Sustained dialogue between the two governments and the strategic communities of the two countries
- Dealing with Turkey must be an important part of India's foreign and security policy.
- Erdogan's ambitions have offended many countries in Eastern Mediterranean, the Middle East and the Caucasus.
- Many of them are eager to expand strategic cooperation with India in limiting Turkish hegemony. This opens a range of new opportunities for Indian foreign and security policy in Eurasia.

### **India should learn from Turkey geopolitics**

- Turkey is a NATO member has not stopped Erdogan from a strategic liaison with Russian President Vladimir Putin. That he purchases advanced weapons like S-400 missiles from Moscow.
- Ankara's criticism of China's repression of Turkic Uighurs in Xinjiang — that was once called "Eastern Turkestan" goes hand-in-hand with deep economic collaboration with Beijing

## **Opportunities for India**

- Located at the crossroads of Asia and Europe, it is geopolitically an important player in a volatile region, and economically, as a hub for third country exports, particularly as a stepping stone into the EU market.
- Potential for multifaceted cooperation across a wide spectrum, ranging from trade and investment to defense and high technology.
- Turkey joining an Indian initiative, the Coalition for Disaster Resilient Infrastructure, exemplifies our collaboration for a common cause.
- The two countries are “victims of terrorism, including cross-border terrorism, both have to join hand to end terrorism.

## **Conclusion**

- The friendship treaty with Turkey that Jawaharlal Nehru signed in 1951 underlined India’s hopes for building a lasting partnership in the post-colonial era. Prime ministers, Rajiv Gandhi and Atal Bihari Vajpayee, tried to end the stalemate in relations with Turkey, but did not succeed.
- Erdogan’s enduring enthusiasm for Pakistan does not preclude Turkey from doing business, economic and strategic ties with India. Turkey is an important regional player that must be factored into India’s current recalibration of its Middle East policy.

## **2.4 Lawfare - A New Weapon of National Security**

### **Frame of Reference**

Military experts, international relations academics, and practitioners like retired diplomats dominate the debates on global security in India. International lawyers are largely absent in these debates despite security issues being placed within the framework of international law. The situation needs to be looked deeply and resolved as soon as possible.

### **Role of International Laws in security issues**

- In the era where various geopolitical poles are formed on the world map, international law covers a wide array of security issues ranging from terrorism to maritime security.
- Article 1 (1) of the UN Charter recognises the maintenance of “international peace and security” as a principal objective of the UN.
- International laws forces the international parties when such security issues come forward as every country is a part of world geopolitics whereby maintenance of it's own stand is important for country's benefit.

### **India in using international laws to articulate its security interests**

#### **Successes:**

- Kulbhushan Jadhav case



- This is when India correctly played its chance and focused on the security concern dragging Pakistan to the International Court of Justice.
- Developing International law to counter terrorism
- Whereby directly pointing towards the security agendas.

**Failures:**

- When India struck the terror camps in Pakistan in February 2019, days after a dastardly act of terrorism in Pulwama was carried out by a Pakistan based terror outfit.
- In justifying the use of force, rather than placing the 'Self-defence' card since Pakistan was unable or unwilling to act against the terrorist groups operating from its soil; it stuck to the contested doctrine of 'non military pre-emptive action'.
- After the Pulwama attack, when India decided to suspend the most favoured nation (MFN) status of Pakistan, India used Section 8A(1) of the Customs Tariff Act, 1975, to increase customs duties on all Pakistani products to 200%. The notification on this decision did not even mention 'national security'
- Though, under international law contained in the General Agreements on Tariffs and Trade, countries can deviate from their MFN obligations on grounds of national security.
- Still, Instead of suspending the MFN obligation towards Pakistan along these lines, it used a very weak step against Pakistan.
- When India wished to deport the Rohingya refugees, posing a security threat, the argument to justify this deportation was given to be non-signatory to the Refugee Convention.
- This is a weak argument since India is bound by the principle of non-refoulement (a customary international law principle that prohibits a country from returning refugees to countries where they face a clear threat of persecution on account of race, religion, nationality, political opinion, among others).
- National security is one of the exceptions to the non-refoulement in international refugee law. If India wishes to deport the Rohingya, it should develop a case on these lines showing how they constitute a national security threat.
- Fourth, to put pressure on the Taliban regime to serve India's interest, India has rarely used international law.
- For instance, India could have made a case for the South Asian Association for Regional Cooperation (SAARC) using its implied powers under international law to temporarily suspend Afghanistan from SAARC's membership.



**Reasons for international law remaining at the margins of foreign policy making in India**

- There are several reasons for the neglect of international law in the foreign policy-making in India.
- First, there is marginal involvement of international lawyers in foreign policymaking.
- The Legal and Treaties Division of the Ministry of External Affairs, (which advises the government on international law matters) is both under-staffed and largely ignored on policy matters.
- Moreover, an international law expert has far greater incentive to join the government as a generalist diplomat than as an international lawyer.
- Second, several other Ministries like Commerce and Finance which also deal with different facets of international law, every now and then, have negligible expertise in international law.
- Third, there has been systemic neglect of the study of international law.
- There is scarcity of such institutions which undertake studies in this. And even if present, they have institutionalised mediocrity
- University centres mandated to develop the stream suffer from uninspiring leadership and systemic apathy.
- Fourth, many of the outstanding international law scholars that India has produced prefer to converse with domain experts only. Thus, they have failed in popularising international law among the larger public.

**Suggestions**

- With the aim and intention to emerge as a global power and comeback as the old golden bird, it has to make use of 'law fare' i.e., use law as a weapon of national security.
- To mainstream international law in foreign policymaking, India should invest massively in building its capacity on international law. Develop special institutions for the same field and appoint lawyers with expertise on International law on important government positions and even in the committees. All the various ministries dealing with International law now and then should be made compatible with the changing scenario. After all, India is the place where Kautilya was born, a master of International relations and laws.

**2.5 India and Bangladesh - A Cautious Friendship****Frame of reference**

Majoritarian violence against Bangladesh's Hindu minority community during Durga Puja in Bangladesh caused at least six people dead and dozens injured. This was triggered due to fake news circulation through social media.

**Reasons for recent attacks**

- According to the Government, fake news reports shared over social media, indicates a conspiracy to instigate the violence. The mob violence appears to have begun in Comilla, in Chittagong district, where an image allegedly showing disrespect to the Koran was circulated, and resulted in several major mob attacks on Hindu temples and homes belonging to the minority community.

**Indian and global response to such incidents Indian government****Response:**

- Condemned the incident but praised the Bangladesh government for quick action.
- The Indian High Commission in Dhaka, which was in touch with law and order officials at the Centre, also stepped in to meet with members of the Bangladeshi Hindu community, including representatives from the ISKCON group that was attacked

**Global response:**

- The UN and US condemned this incident.
- Calling the attacks on minority Hindus in Bangladesh as violative of the values enshrined in its Constitution, the UN called out to Prime Minister Sheikh Hasina government to ensure an impartial inquiry into the incidents.

**Traditional ties between both the countries**

- 2021 is being commemorated as 50th anniversary of the 1971 India-Pakistan war that led to the liberation of Bangladesh, which even led to a 122-member contingent of the Bangladesh Armed Forces participating in the this year's Republic Day parade.
- India was one of the first countries to recognize Bangladesh and establish diplomatic relations immediately after its independence in December 1971.

**Areas of cooperation between India and Bangladesh****Corona Pandemic**

- The year 2020, despite onset of the COVID-19 pandemic, witnessed intense high level engagements at political and official levels reflects the bond of friendship between the two countries.
- As part of bilateral assistance, the Government of India has extended three tranches of medical assistance including 30,000 surgical masks, 15,000 head covers, 50,000 surgical latex gloves, 100,000 Hydroxychloroquine medicine tablets and RT-PCR test kits capable of running 30,000 tests in March-April 2020 to Bangladesh to assist in its efforts to fight against the COVID pandemic.

**Defense cooperation**

- High level exchanges in the year 2020 include the second edition of India-Bangladesh CORPAT ‘Bangosagar’ exercise on 03-05 October 2020, Regional Commanders meeting of Coast Guards on 19 October 2020, and the third Annual Defense Dialogue on 02 November 2020.
- Joint exercises like Exercise Sampriti and Exercise Milan

### **Connectivity**

- The newly restored railway link between Chilahati (Bangladesh) and Haldibari (India)
- Feni Bridge (Maitree Setu) connecting LCS Subroom (Tripura) and LCS Ramgarh (Bangladesh) has been launched for better connectivity.
- Signing of the second addendum to the Protocol on Inland Water Transit and Trade (PIWTT).
- Agreed to an early operationalization of the Bangladesh-Bhutan-India-Nepal (BBIN) initiative Motor Vehicles Agreement through the expeditious signing of the Enabling MoU for Bangladesh, India and Nepal to commence the movement of goods and passengers, with provision for Bhutan to join at a later date.
- The use of the Chattogram and Mongla ports in Bangladesh for movement of goods to and from India, particularly from Northeastern India

### **Economic Trade**

- Bangladesh is India’s biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh. Bilateral trade between India and Bangladesh has grown steadily over the last decade
- Bangladesh has appreciated the Duty-Free and Quota Free access given to Bangladeshi exports to India under South Asian Free Trade Area (SAFTA) since 2011.

### **Cooperation in various sectors:**

- Cooperation in the power sector has become one of the hallmarks of India- Bangladesh relations. Bangladesh is currently importing 1160 MW of power from India.
- Bangladesh is the biggest development partner of India today. India has extended various Lines of Credits (LOC) and grant assistance to Bangladesh in the last 8 years for development of infrastructure in various sectors including roads, railways, shipping and ports
- High Impact Community Development Projects (HICDPs) constitute an active pillar of India’s development assistance. The Government of India has funded 68 HICDPs including construction of student hostels, academic buildings, skill development and training institutes, cultural centers, and orphanages etc. in Bangladesh and another 16 HICDPs are being implemented.

- The recent summit on a virtual platform on 17 December 2020 brought both countries together to sign seven bilateral instruments in various sectors including hydrocarbons, agriculture, trade, development projects, and conservation of heritage.
- India resolved and stood with Bangladesh in the Rohingya Crisis

### **Cooperation on Multilateral forums:**

- Bangladesh supported India in its election to the United Nations Security Council.
- Both countries agreed to continue working together towards achieving early reforms of the UN Security Council, combating climate change, attainment of the Sustainable Development Goals (SDGs) and protection of the rights of migrants.
- Strong presence and agreement on regional organisations such as the South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) have an important role to play.
- Bangladesh will assume chairmanship of the Indian Ocean Rim Association (IORA) in 2021 and requested the support of India for working towards greater maritime safety and security

### **Issues with both**

- One of the major issues that arises amongst the two is the Teesta river water sharing issue.
- The sharing of the Teesta waters has been a long standing demand of Bangladesh since the livelihood of millions is attached to the river's water.
- Moreover, constant building of dams along the Teesta in Sikkim has resulted in lean seasonal flow draining into Bangladesh. Since Bangladesh is a lower riparian country, it is naturally sensitive about transboundary river issues, and the sharing of the Teesta waters currently holds the key to improved India-Bangladesh relations.
- From allotment of catchment areas of Teesta to India in 1947 to Joint River Commission in 1972 to ad-hoc arrangement for settlement of this issue and even the 2011 failed agreement; various attempts have been made to solve the issue but in vain.
- India and Bangladesh share 4096.7 km. of border, which is the longest land boundary that India shares with any of its neighbours. This often creates tension between the two since the Land Boundary Agreement was signed.
- India and Bangladesh share 54 common rivers. A bilateral Joint Rivers Commission (JRC) has been working since June 1972, but issues regarding water sharing arise from time to time
- Other issues to look upon and resolve are continental shelf issues in the Bay of Bengal, border incidents and mainly infiltration, media issue etc.

- National Register of Citizen (NRC) also brought up a sour point between the two neighbours and even the active participation of Bangladesh over the Belt and Road Initiative (BRI) is a sore point for India

### **Way forward with suggestions**

- India and Bangladesh share bonds of history, language, culture, and multitude of other commonalities. The excellent bilateral ties reflect an all-encompassing partnership based on sovereignty, equality, trust, and understanding that goes far beyond a strategic partnership.
- India needs to address issues and doubts of Bangladesh and shouldn't shied away from the same
- Teesta river issue needs to be resolved soon for the turning the direction of wind in our favour, amidst the growing paws of China.
- As a regional leader, India has a greater role in the South-Asian geopolitics. However, it must ensure that its domestic drivers do not upset carefully built foreign relations..

## **2.6 Article 6 of the Paris Agreement- the centre of the debate at Glasgow**

### **Frame of reference-**

As UNFCCC CoP26 is going to be held at Glasgow, Article 6 of the Paris agreement would be the most contentious issue as it has remained unresolved since the agreement was signed. Despite several rounds of high-level meetings, it remains highly technical and crucial issue that needs to come to a conclusion at the upcoming CoP26.

### **Article 6 of Paris Agreement**

- Article 6 of the Paris agreement introduces provisions for using international carbon markets to facilitate fulfilment of Nationally Determined Contributions (NDCs) by countries.

### **Few provisions of Article 6**

- Article 6.2 gives an accounting framework for international cooperation and allows for the transfer of carbon credits between countries internationally.
- Article 6.4 provides for establishment of a central UN mechanism to trade credit from emission reduction generated through specific projects.
- Article 6.8 provide setting up of a work program for non-market approaches, such as imposing taxes to discourage emissions.

### **Clean Development Mechanism**

- The clean development mechanism defined in Article 12 of the Kyoto Protocol, allows a country with an emission- reduction or emission limitation commitment, if a country is an Annex B country , then it has to implement an emission reduction project in developing countries.

- Such kinds of projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO<sub>2</sub>.
- It is the first global, environmental investment and credit scheme of its kind, providing a standardized emission offset instrument, CERs.
- A CDM project can involve a rural electrification project using solar panels, green energy projects, controlling of pollution projects etc.
- The projects must qualify through a rigorous public registration and issuance process and approval is given by Designated National Authorities.
- The mechanism is overseen by the CDM Executive Board.

### **The Kyoto flexible market protocol mechanisms are of 3 types.**

- 1) Clean Development Mechanism
- 2) Emission trading
- 3) Joint implementation

- Carbon credit also called as carbon offset is a tradable certificate or permit and one carbon credit is equal to 1 tonne of carbon dioxide.
- Joint implementation allows a country with an emission reduction commitment under the Kyoto Protocol (Annex B country) to earn Emission reduction units (ERUs) by investing in an emission reduction project in another Annex B country.

### **Article 6 a sensitive issue**

- India registered 1703 projects under the CDM which is the second highest in the world and total certified emission reductions issued for these projects are 255 million which accounts for an overall inflow of approximately US\$2.55 billion in the country but at a conservation price of US \$ 10 per CER. So, India has a lot to gain from thriving carbon market.
- Developing countries are also required to have mitigation targets so, development countries are facing dilemma of either selling their carbon credits in return for lucrative foreign investment flows or use these credits to achieve their own mitigation targets.

### **Role of market mechanisms for developing and developed countries**

- For a developing country, the carbon market mechanism is much more a tool for fulfilling its mitigation targets under the NDCS.
- The new market mechanism must also promote sustainable development and assist in climate change adaptation in the developing countries to achieve the SDG targets.

- Private sector participation and foreign investment should be encouraged under the new mechanism to support low carbon development in the developing country.
- For developed countries, the market mechanism should make them achieve their climate targets as they would be comparatively low cost options.

### **Debatable issues related to Article 6**

- CDM transition- As CDM projects have gone through due diligence and credits so the Article 6 mechanism allow for a smooth transition of there projects to ensure not only viability of these projects but also to build trust for private sector. If the decision regarding transition of CDM is not favorable then it could lead to a loss of billions of dollars.
- Accounting rules- The mechanism under article 6.4 is meant for incentivising the private sector and public entities for undertaking mitigation activities.
- So, a country can purchase emission reductions from public and private entities of host country to meet its NDC targets but this does not automatically implies for emission reduction units to be transferred from host country to other country for meeting NDC targets.
- Also, under article 6.5, the host country is not required to undertake corresponding adjustment for the projects outside its NDC.

### **Share of Proceeds (SoP) to the Adaptation Fund**

- This is one of the major issue which needs to be addressed properly. Adaptation is a necessity for developing countries but adaptation fund remains severely underfunded as compared to mitigation activities.
- Developing countries emphasize on uniformity in application of Article 6.2 and 6.4 to fund adaptation, while developed countries want to restrict its application to only Article 6.4. This limits the voluntary cooperation to Article 6.2.
- Another issue to be discuss is the equitable sharing of carbon and developmental space.
- Carbon markets allow developed countries to keep emitting and developing countries to benefit from revenue generated from sale of their carbon credits, this should not be done. The main agenda of carbon market should be attaining climate targets and sustainable development.

### **Suggestions:**

Climate justice demands that developing countries must get access to their fair share of global carbon markets space. A facilitative carbon market mechanism that respects the principles enshrined in UNFCCC will greatly help to accelerate the transition to low carbon development mechanism Also, a new supervisory body can be

made under the Paris Agreement to look after the emission reduction units and make sure that they are not counted again and again.

## **2.7 Border Disputes in Himalayas States (PoK, Nepal, China)**

### **Frame of reference-**

As the winter is setting in, in the icy cold deserts of Ladakh and there is no respite for Indian and Chinese soldiers who will remain deployed against each other. Although, the period is calm at the tactical level, the satisfied atmosphere, low-temperature and high altitude take their toll on both man and material.

### **Border disputes with Pakistan – Events occurred:**

- The border dispute with Pakistan traces back to the creation of Pakistan. The proxy war started over Kashmir issues since 1947.
- In the year 1965, Pakistan launched a violent attack in Rann of Kutch and Jammu and Kashmir region. India too launched counter-attack on the Punjab border.
- In 1966, Tashkent agreement was signed which was a peace agreement between Lal Bahadur Shastri and Mohammad Ayub Khan.
- Again in 1971, full fledged war started due to 80 lakh refugees from Bangladesh in India. With the support of native population of East Pakistan, Indian army surrounded Dhaka and Bangladesh was created.
- With operation Meghdoot in 1984, a permanent establishment was made in Siachen Glaciers.
- And in the year 1999, Kargil was occurred which is a limited war, not a full fledged war.

### **Disputed territories:**

- India shares 3323 km. of its border with Pakistan which is third highest after Bangladesh and China.

### **The Disputed territories are:-**

- Jammu and Kashmir
- Siachen Glacier
- Saltoro ridge
- Sir Greek Dispute
- Pakistan occupied Kashmir
- Gilgit Baltistan
- Pakistan illegally occupied 78,000 km<sup>2</sup> of Indian territory of Jammu & Kashmir and also it ceded 5180 km<sup>2</sup> in Pakistan occupied Kashmir to China.



- Siachen Glacier is situated in the eastern Karakoram and east of the Actual Ground Position Line between India-Pakistan. Currently, the whole glacier is under control of Indian army since 1984.
- Salto Mountains is a sub range of the Karakoram or the Salto ridge. They are located at the center of Karakoram on the South-West of Siachen Glacier. They are claimed as part of Ladakh by India and as part of Gilgit-Baltistan by Pakistan. India gained control over main peaks in 1984.
- Sir Greek – It is a 96km strip of water disputed between India and Pakistan in Rann of Kutch. Pakistan claims the eastern line of the share of the estuary and India claims the center line to follow.

### **Border Disputes with China:**

- Border shared by India and China is 3488 kms. in length. Four states of India share border with China which are Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh with a union territory of Ladakh.
- The Line of Actual Control (LAC) is the demarcation that separates Indian-controlled territory from Chinese controlled territory.
- India considers the LAC to be 3488 km. long while the Chinese consider it to be only around 2000 km long.

### **Disputed territories**

- Western Sector (Ladakh)
- Middle Sector (Uttarakhand and Arunachal Pradesh)
- Eastern Sector Himachal Pradesh)
- In the Western sector, the territorial dispute is over the Aksai-Chin. India claims it as part of Kashmir and China claims it as a part of Xinxiang province. China occupied Aksai-Chin in 1957 which followed war of 1962.
- India considers Johnson Line which showed Aksai-Chin as part of Jammu and Kashmir whereas China considers McDonald line which showed Aksai-Chin as part of China.
- The middle sector consists of Himachal Pradesh and Uttarakhand touching Tibet (China) and there are not much disagreements in this region.
- In the eastern sector, the alignment of the LAC is along the 1914 McMohan Line. China does not consider McMohan line and claims entire Arunachal Pradesh as South Tibet.
- India-China also fought a war in 1962 in this sector but the war was won by China.
- India recently had conflicts in the Naku la sector and Pangong Tso in Ladakh.

- Naku la is a pass in Sikkim, located ahead of Cho Lhamu or Muguthang (source of Teesta River).
- Pangong Tso is a 135km long lake of which, one third is under Indian control i.e., 45km while the left over 90 km is under Chinese control. It is a saline lake formed from Tethys geosyncline.

**The four points where India and China had conflict during May 2020 are-**

- Patrol Point 15- at Chang Chenmo river valley in Ladakh
- Patrol Point 17A – near Gogra Post
- Patrol Point 14 – Galwan valley
- Northern Bank of Pangong Tso.
- Daulat Beg Oldi (DBO), close to Karakoram pass; Demchok, south of LAC in Ladakh; Chushul, south of Pangong Tso Lake; Spanggur Gap, along the LAC are some disputed areas between India & China.

**Border dispute with Nepal:**

- Recently, Nepal included Lipulekh, Kalapani and Limpiyadhura territories in its own map which are claimed by India as Indian territories.
- The Nepal Kingdom stretched from Sutlej River in the west to the Teesta river in the west and after losing Anglo-Nepalese War, Nepal signed treaty of Sugauli in 1816 which stated that Nepal ceded whole of lowlands between river Kali and Rapti to British India.
- The Kali river act as a boundary between Uttarakhand and Nepal from Limpiyadhura.
- As the Kali river originates from the headwaters of Kalapani river below Lipulekh pass and Kuthi yankit river below Limpiyadhura range, and it changes its course very often, giving rise to disputes between India and Nepal.
- Nepal claims that maps of 1850 and 1856 prepared by Survey of India showed Mahakali river originating from Limpiyadhura, northwest of Kakapani and hence, Kalapani is part of Nepal but, India rejects this claim of Nepal and considers map of 1875 which shows Mahakali river originating from east of Kalapani.
- The Lipulekh pass is at the tri-junction of India, China (Tibet) and Nepal.
- Nepal claims that India encroached around 372km<sup>2</sup> area towards Limpiyadhura through Kalapani during 1962 Indo-China war and hence, occupied the region.

## 2.8 National Events

### Frame of reference-

#### Justice Delayed is Justice Denied

Recently, former Chief Justice of India, N.V. Ramana quoted a former Chief Justice of the US Supreme Court, Warren Burger, "The notion that ordinary people want black robed judges, well- dressed lawyers in fine courtrooms as settings to resolve their disputes is incorrect. People with problems, like people with pains want relief and they want it as quickly and inexpensively as possible."

#### Judicial pendency current status:

- When it comes to judiciary, it is not very shocking that the nation's judiciary is hurling towards a disaster and needs an immediate action.
- A measure of the justice delivery system is the pendency of cases in courts. And more than 40% of cases are decided after 3 years in India, while in many other countries less than 1% of cases are decided after 3 years.
- Till January 2020, the total pending cases in India were 375 lakh with 83 lakh increase in pendency of cases, which accounts an average 5.7 lakh cases/year in 14 years.
- And till July 2021, 449 lakhs were pending cases with an increase of 23 lakh cases in this year which accounts for 23 lakh cases increase in a year.

#### Cause of Judicial Delays:

- A large number of unfilled judicial vacancies.
- The time taken by the judicial process to reach the end point of the results is often way too long. The witnesses involved in cases don't come forward whereas, medical reports, forensic reports take a lot of time to be presented and studied before the court. This makes the whole process very long, time taking and tiring as well.
- Another cause is fast growing population of our country, where there is an increase in rise of cases but the number of judges, lawyers, advocates are not increasing at this pace to counter the increase in cases of people.
- Other major cause is lack of infrastructure – as said by Chief Justice, Dipak Misra, lack of infrastructure as one of the causes for judicial delays.
- An increasing number of state and central laws posing restrictions and delays in the judicial process.
- Lack of good quality judges, as lawyers are not that much experienced.
- There is also an increase in appeals in the High Courts against the orders of the quasi judicial bodies.

- Delays also occur during pretrial and trial of cases and also due to inadequate system of monitoring of cases, their current status.

### **Impact of Judicial Delays:**

- According to the National Crime Records Bureau, lakhs of people lodged in jail are waiting for their pleas to be heard.
- Thousands are in jail for petty crimes and have spent their more jail time than are required by law.
- In total, there are overall 18,000 women prisoners in central jails, out of this 18000, the hearing of 6328 women had not even started in courts.
- The rich, the powerful and the wrong- doers have a field day by getting their cases expediated or delayed as they wish.
- The poor and marginalized are most severely impacted by judicial delays as they being poor, can't earn their living and when in jail serving their punishment and under trial can't even support their family.
- As according to National Judicial Data Grid, over 2 crore 72 lakh cases are pending in Indian Courts, and 70% of prisoners in India are under trials and are mostly poor citizens.

### **Tackling pendency of cases- few measures:**

#### **Filling Judicial Vacancies:**

- Pendency of cases can be reduced by filling up the sanctioned vacancies. Analysis shows that between 2006 and 2019, the average increase in pendency was less than 2% per year whereas the average vacancy in sanctioned judicial positions was about 21%. If the sanctioned posts had been filled, pendency of cases would have gone down.
- Nation needs to add about 20% of judges in the judiciary to finish the backlog of cases pending.
- Selection of judges is largely with the judiciary and appointments of subordinate judges lies with the state government and high courts. So, they need to wake up and start appointing judges to get away with this judicial pendency.
- Also, filling all the vacancies requires about 5000 courtrooms. So, an easy solution would be to run 5000 courts in double shift.

#### **Use of Technology:**

1. The committee of the Supreme Court has made three outstanding recommendations-
  - a) Computer algorithms should decide on case using, case allocation and adjournments with only 5% override given to judges. Case allocation should take into account logical criteria.

- b) Courts should focus on e-filing. The committee made detailed standards of procedure on how petitions and affidavits can be filed and payment of fees can be done electronically without lawyers or litigants having to travel to the courts or use paper.
  - c) Recommendations focused on virtual hearings. COVID-19 prompted courts to adopt virtual hearings.
2. All the courts must shift to a hybrid virtual mode immediately and start disposing cases. This will make access to justice easier for litigants, reduce costs and give a fair opportunity to young lawyers.

The above recommendations don't require any kind of change in laws. So, they must be implemented to bring the pendency of cases. Infrastructure management, case monitoring, timeline judgements must be effectively used by lawyers and judges to finish backlogs.

For e-commerce disputes, Online Dispute Resolution (ODR) has been able to resolve the conflicts. Several institutional arbitration centres across the world, like Singapore International Arbitration Centre, have released guidance documents for video-conferencing-led remote participation in hearings.

The United States launched MI-Resolve in response to COVID-19. It is an online tool to resolve small disputes.

#### **Way Forward:**

- Justice delayed is justice denied. So, the need of the hour is to work effectively and reduce the pending cases to zero. Speedy justice is a prerequisite for maintaining rule of law and delivering good governance.
- Judicial reforms and committee's recommendation must be taken seriously to end this problem of judicial system.
- Mechanisms like Lok Adalats, ADR (Alternative Dispute Resolution), Gram Nyayalayas should be effectively utilised and implemented.

### 3. ECONOMY

#### 3.1 Scheme for Intellectual Property (IP) protection revised

- Patent applications filed by Startups increases from 179 in 2016-17 to 1500 in 2021-22; Trade Mark applications filed by Startups increases from 4 in 2016-17 to 8649 in 2021-22
- To protect and promote Intellectual Property Rights (IPR) of Startups and to encourage innovation and creativity among them, Government of India had launched a Scheme for facilitating Start-Ups Intellectual Property Protection (SIPP) in 2016. The scheme facilitated startups in filing and processing of their patent, design or trademark application through the assistance of IP Facilitators, whose fee was borne by the Office of the Controller General of Patents Designs and Trademarks, Department for Promotion of Industry and Internal Trade, Government of India. After its successful implementation resulting in a significant increase in IP filings by Startups the Scheme was extended for a period of three years till 31st March 2023.
- To further encourage the IP facilitators to provide quality services to Startups in order to increase the number of IP Applications filed by startups, the scheme has now been revised and facilitation fees has been notably increased by at least 100%
- In addition to above scheme, IP filling by startups are also encouraged by providing with fee rebates under respective IP legislations. Startups are provided 80% fee rebate in filing patent applications and 50% fee rebate in filling trademark application. In addition, there are also provisions for fast-track examination of patent applications.

#### **Resultantly, there has been a significant increase in IP activities by Startups in last 6 years:**

- Patent applications filed by Startups have increased from 179 in 2016-17 to 1500 in 2021-22;
- Trade Mark applications filed by Startups have increased from 4 in 2016-17 to 8649 in 2021-22;
- From 2016-17 to October 2022, 7430 patent applications and 28749 Trade mark applications have been filed by Startups.
- To further strengthen the Intellectual Property (IP) Ecosystem in the country, the Office of Controller General of Patents Designs and Trademarks has launched a daily “Open Conference”

#### **Patents;**

- A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application.
- In principle, the patent owner has the exclusive right to prevent or stop others from commercially exploiting the patented invention. In other words, patent protection means that the invention cannot be commercially made, used, distributed, imported or sold by others without the patent owner's consent.

### **3.2 National Bamboo Mission (NBM)**

- Advisory group formed for boosting the Bamboo sector development
- The Advisory group encompasses the representation of various stakeholders viz., academicians, researchers, innovators, progressive entrepreneurs, designers, farmer leaders, marketing specialists and policy makers. The inter-ministerial and public- private consultation is envisaged to dovetail the bamboo initiatives of the Ministries/ Departments and to help revamp the developmental architecture of the sector by incorporating synergy between all the sections related to the bamboo value chain.
- The restructured National Bamboo Mission (NBM) was launched during 2018-19 as a Centrally Sponsored Scheme. NBM mainly focuses on the development of complete value chain of Bamboo sector to link growers with consumers starting from planting material, plantation, creation of facilities for collection, aggregation, processing, marketing, micro, small & medium enterprises, skilled manpower and brand building initiative in a cluster approach mode. Over the years of the interventions through policy, facilitations and awareness creations, the bamboo industry is witnessing a phase change by the opening of multiple avenues of the resource utilization. Recently, the Prime Minister inaugurated the new terminal of the Bengaluru (Kempagowda) Airport in which the versatility of bamboo as an architectural and structural material has been proved and the destiny of this green resource defined as the ‘green steel’. Apart from using in the construction sector as design and structural element, the potential of bamboo is multifaceted. Ecofriendly mouldable granules from bamboo can replace the use of plastic. Bamboo is a reliable source for the ethanol and bio-energy production due to its fast rate of growth and abundance. The market of Bamboo based lifestyle products, cutleries, home decors, handicrafts and cosmetics also is in a growth path. The National Bamboo Mission is striving to bring the benefits of this growing sector to the farmers and human resources of the Nation.
- The Subject experts and other stakeholders who are actively working in the bamboo sector will advise about the areas to be focused as well as the policy interventions to be taken in coordination with other stakeholders of the sector. The Union Agriculture Secretary will be the Chairperson and Mission Director of National Bamboo Mission will be the Convener of the Committee. The members of the committee shall advise the Ministry of Agriculture & Farmers Welfare on issues and technologies in propagation, plantation of bamboo & intercropping, primary processing, product development, value addition, market infrastructure and linkages, processing machineries, skill development etc.

### **3.3 Centre’s reforms result in consistent increase of FDI inflow; FDI grows from US \$ 45.15 billion in 2014-2015 to US\$ 84.84 billion in 2021-22**

- In spite of Covid related disruptions Gross Value Addition (GVA) in manufacturing sector sees a trend of positive overall growth
- The total employment in the manufacturing sector increases from 57 million in the year 2017-18 to 62.4 million in the year 2019-20



- The reforms taken by Government have resulted in increased Foreign Direct Investment (FDI) inflows in the country. FDI inflows in India stood at US \$ 45.15 billion in 2014-2015 and have continuously increased since then, and India registered its highest ever annual FDI inflow of US\$ 84.84 billion (provisional figures) in the financial year 2021-22, Minister of State for Commerce and Industry.
- 'Make in India' is an initiative which was launched on 25<sup>th</sup> September, 2014 to facilitate investment, foster innovation, build best in class infrastructure, and make India a hub for manufacturing, design, and innovation. It is one of the unique 'Vocal for Local' initiatives that promoted India's manufacturing domain to the world. The 'Make in India' initiative is not a state/district/city/area specific initiative, rather it is being implemented all over the country.
- 'Make in India' initiative has significant achievements and presently focuses on 27 sectors under Make in India 2.0. Department for Promotion of Industry and Internal Trade (DPIIT) coordinates action plans for 15 manufacturing sectors, while Department of Commerce coordinates 12 service sector plans. Investment outreach activities are done through Ministries, State Governments and Indian Missions abroad for enhancing International co-operation and promoting both domestic and foreign investment in the country.
- In addition to ongoing schemes of various Departments and Ministries, Government has taken various steps to boost domestic and foreign investments in India. These include the introduction of Goods and Services Tax, reduction in Corporate tax rate, interventions to improve ease of doing business, FDI policy reforms, measures for reduction in compliance burden, policy measures to boost domestic manufacturing through public procurement orders, Phased Manufacturing Programme (PMP), to name a few.
- The series of measures taken by the Government to improve the economic situation and convert the disruption caused by COVID 19 into an opportunity for growth includes Atmanirbhar packages, introduction of Production Linked Incentive (PLI) Scheme in various Ministries, investment opportunities under National Infrastructure Pipeline (NIP) and National Monetisation Pipeline (NMP), India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), soft launch of the National Single Window System (NSWS), etc. An institutional mechanism to fast-track investments has been put in place, in the form of Project Development Cells (PDCs) in all concerned Ministries/ Departments of Government of India along with an Empowered Group of Secretaries (EGoS).
- Keeping in view India's vision of becoming 'Atmanirbhar' and to enhance India's Manufacturing capabilities and Exports, an outlay of INR 1.97 lakh crore (over US\$ 26 billion) has been announced in Union Budget 2021-22 for PLI schemes for 14 key sectors of manufacturing, starting from fiscal year (FY) 2021-22.
- As per Economic Survey 2021-22, inspite of Covid related disruptions there is trend of positive overall growth of Gross Value Addition (GVA) in manufacturing sector. The total employment in this sector has increased from 57 million in the year 2017-18 to 62.4 million in the year 2019-20.



- The activities under the Make in India initiative are also being undertaken by several Central Government Ministries/ Departments and various State and UTs Governments. Ministries formulate action plans, programmes, schemes and policies for the sectors being dealt by them, while States also have their own Schemes for attracting investments.

### **3.4 Most sectors except certain strategically important sectors open for 100% FDI under the automatic route**

- Department for Promotion of Industry and Internal Trade's (DPIIT) dynamic reform exercise Business Reforms Action Plan (BRAP) strives to promote Ease of Doing Business, boosts competitive federalism
- Amalgamation facilitates consolidation among Public Sector Banks; helps achieve economies of scale and synergy benefits
- To promote FDI in the country, the Government has put in place an investor-friendly policy, wherein most sectors except certain strategically important sectors are open for 100% FDI under the automatic route, Minister of State for Commerce and Industry.
- It may be noted that the policy on FDI is reviewed on an ongoing basis, to ensure that India remains attractive and investor friendly destination. Changes are made in the policy after detailed consultations with stakeholders including apex industry chambers, associations, sectoral ministries/ departments and representatives of industries/groups and other organizations. Government has recently undertaken a number of reforms across sectors like Defence, Petroleum and Natural Gas, Insurance etc.
- The Department for Promotion of Industry and Internal Trade (DPIIT) is the Nodal Department for coordinating the initiatives under Ease of Doing Business which are aimed at creating an investor-friendly ecosystems across the country. In addition to ongoing schemes of various Departments and Ministries, Government has also undertaken various steps to boost domestic and foreign investments in India. These include the introduction of Goods and Services Tax, reduction in Corporate taxes, financial market reforms, consolidation of public sector banks, Foreign Direct Investment (FDI) policy reforms, reduction in compliance burden, various policy measures to boost domestic manufacturing, to name a few.
- DPIIT, in coordination with States and Union Territories (UTs), is spearheading various reforms to improve the business regulatory environment in the country. DPIIT undertakes a dynamic reform exercise called Business Reforms Action Plan (BRAP), wherein all States and UTs are assessed on the basis of implementation of designated reform parameters. The focus of the reforms has been on streamlining the existing regulations and processes and eliminating unnecessary requirements and procedures. The Action Plan for the year 2022 covers 352 reform points.
- All the States and UTs, including Jharkhand, Delhi and West Bengal have also participated actively in this exercise over the years and reforms implemented by them are recorded on the BRAP Portal .The exercise

boosts competitive federalism among the States/UTs and thereby helps to further facilitate investor-friendly ecosystems across the country.

### **Amalgamation facilitates consolidation among Public Sector Banks; helps achieve economies of scale and synergy benefits**

Comprehensive reforms have been undertaken by the Public Sector Banks (PSBs) under Enhanced Access and Service Excellence reforms agenda to improve the ease of doing business including, *inter alia*, the following

- 1) Setting up of Loan Management Systems and Centralised Processing Centres, resulting in retail loan disbursement turnaround time reducing from 31 days to 10 days;
  - 2) Enhancement of access to mobile and Internet banking by PSBs through increase in average number of services offered, customer-friendly features, and regional languages available on the customer interface;
  - 3) Introduction of end-to-end automated digital lending in most of the larger PSBs for unsecured personal loans, loans to micro-enterprises and renewal of loans to MSMEs;
  - 4) Enablement of digital retail loan request initiation through digital channels in all large PSBs; and
  - 5) Thrust on customer-need-driven, analytics-based credit offers by large PSBs.
- The objective of amalgamation of the banks was to facilitate consolidation among PSBs to create strong and competitive banks capable of achieving economies of scale and realization of synergy benefits with wider product and service offering to customers. As a result of this effort, customers of amalgamated banks received access to increased number of branches and ATMs from which they can now avail banking services.
  - Customers have also received access to a larger bouquet of products and services through harmonization of the same across banks being amalgamated together and enhanced their lending capacity for loans of a larger size. Further, the increased scale and customer base in the amalgamated banks has also enabled banks to opening/reorganizing controlling offices and processing centers, equipping them for better customer serving.

### **3.5 One District One Product (ODOP) initiative operationally merged with ‘Districts as Export Hub (DEH)’ initiative**

- ODOP initiative is operationally merged with ‘Districts as Export Hub (DEH)’ initiative of the DGFT, Department of Commerce, with the Department for Promotion of Industry and Internal Trade (DPIIT) as a major stakeholder, Minister of State for Commerce and Industry.
- Central Government has initiated One District One Product (ODOP) in all States/UTs of the country, as a transformational step towards realizing the true potential of a district, fueling economic growth, generating employment and rural entrepreneurship, taking us to the goal of Aatmanirbhar Bharat. The ODOP Initiative is aimed at fostering balanced regional development across all districts of the country, enabling

holistic socio-economic growth across all regions. The objective is to focus on District of the country as unit for converting into a manufacturing and export hub by identifying products with export potential in the District. The Department is engaging with State and Central Government agencies to promote the initiative of ODOP, which is an on-going process.

- In this context, Districts Export Action Plans include specific actions required to support local exporters / manufacturers in producing / manufacturing identified products in adequate quantity and with the requisite quality, for reaching potential buyers outside India, thereby creating economic value. These plans also include identifying and addressing challenges for exports of such identified products/services, improving supply chains, market accessibility and handholding for increasing exports, paving way for employment generation.

**The following are some of the achievements of ODOP:-**

- 1) The ODOP GeM Bazaar was launched on the Government e-Marketplace (GeM) on 29<sup>th</sup> August 2022 with over 200 product categories created on the platform to promote sales and procurement of ODOP products across the country.
- 2) ODOP products are showcased in various International forums such as World Economic Forum, DAVOS in May 2022, at International Yoga day (IYD) in New York, US in June 2022 etc.
- 3) The ODOP initiative has been identified for the prestigious Prime Minister's Award for Excellence in Public Administration in Holistic Development through One District One Product (ODOP) category in April, 2022.
- 4) Under DEH (a) State Export Promotion Committee (SEPC) and District Export Promotion Committee (DEPC) has been constituted in all the 36, States/UTs. (b) products/services with export potential have been identified in 734 Districts across the country (Including Agricultural & Toy clusters and GI products in these Districts); (c) State Export Strategy has been prepared in 28 States/UTs; (d) Under DEH, State Nodal officers are nominated in 34 States/UTs; (e) DEPC meetings has already been conducted in 681 Districts; (f) Draft District Action Plan has been prepared for 570 Districts; (g) a web portal to monitor the progress of District Export Action Plan in all the Districts has been developed by DGFT

**3.6 NSIC signs MoU with Walmart**

- A MoU was signed between Walmart Global Sourcing India Private Limited and The National Small Industries Corporation Limited
- Through this MoU NSIC will be able to extend the NSIC schemes and other services to MSMEs who would participate in various Vridhhi program. Moreover, the MSMEs would get the exposure to various advantages of gaining working capital, bulk procurement support etc. under various opportunities offered by NSIC. MSMEs who are part of the NSIC ecosystem will also be linked to the Vridhhi program in relevant clusters and get access to existing business training content, advisory support, tools and

knowledge under the program – “free of cost”. The MoU will play a critical role in enabling MSME’s reach \$2 trillion worth of exports by 2030.

### **3.7 National Small Industries Corporation**

- National **Small Industries Corporation Limited (NSIC)** is a Mini Ratna government agency established by the Ministry of Micro, Small and Medium Enterprises, Government of India in 1955. It falls under Ministry of Micro, Small & Medium Enterprises of India. NSIC is the nodal office for several schemes of Ministry of MSME such as Performance & Credit Rating, Single Point Registration, MSME Databank, National SC ST Hub, etc.
- Government of India to promote small and budding entrepreneurs of post independent India, decided to establish a government agency which can mediate and provide help to small scale industries (SSI). As such they established *National Small Industries Corporation* with objectives to provide machinery on hire purchase basis and assisting and marketing in exports. Further, SSIs registered with NSIC were exempted from paying Earnest money and provided facility of free participation in government tendered purchases. Also for training persons the training facilities centres and for providing assistance in modernising the small industries several branches of NSIC were opened up by government over the years in several big and small towns, where small industries were growing.
- NSIC also helps in organising supply of raw materials like coal, iron, steel and other materials and even machines needed by small scale private industries by mediating with other government companies like Coal India Limited, Steel Authority of India Limited, Hindustan Copper Limited and many others, who produce these materials to provide same at concessional rates to SSIs. Further, it also provides assistance to small scale industries by taking orders from Government of India owned enterprises and procures these machineries from SSI units registered with them, thus providing a complete assistance right from financing, training, providing raw materials for manufacturing and marketing of finished products of small scale industries, which would otherwise not be able to survive in face of competition from large and big business conglomerates. It also helps SSI by mediating with government owned banks to provide cheap finance and loans to budding small private industries of India.

### **3.8 Promoting Women Entrepreneurship**

- Ministry of Skill Development and Entrepreneurship (MSDE) has taken various initiatives towards promotion of women entrepreneurship across the Country. However, the MSDE has not conducted any study on the challenges being faced by women entrepreneurs in the country.

**In order to promote women entrepreneurship, the details of the various initiatives taken by MSDE are as under:**

- ‘Economic Empowerment of Women Entrepreneurs and Start-ups by Women’ (WEE) project is being supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German

Federal Ministry for Economic Cooperation and Development (BMZ) in partnership with the MSDE to improve the framework conditions for women-led enterprises in India. The project aims to pilot incubation and acceleration programmes for women micro-entrepreneurs, enabling them to start new businesses and scale up existing enterprises in the States of Maharashtra, Rajasthan, Telangana, Uttar Pradesh and 8 North Eastern States of the country.

- Under the title of 'Her&Now', the WEE project has also been running a film and media campaign to share the stories of successful women entrepreneurs and to foster a positive mindset change on gender roles and norms in society. Till now, over 900 women entrepreneurs have been supported under the project under both incubation and acceleration support programmes.
- Entrepreneurship Development in Six Holy Cities, a project of the MSDE, aims to catalyse local entrepreneurial activities through involvement of potential & existing entrepreneurs, unemployed youth, college dropouts, youth from backward community etc. The Project is being implemented in Puri, Bodh Gaya, Kollur, Varanasi, Haridwar and Pandharpur. The total number of beneficiaries trained under the project is 7,185 out of which 4,535 were women.
- MSDE implemented PM YUVA Pilot Project (from November 2019 to March 2022) towards creating an enabling ecosystem through entrepreneurship education, training, advocacy and easy access to entrepreneurship network. The scheme focuses on students/trainees and alumni coming out from skilling ecosystem {i.e. Industrial Training Institutes (ITIs), Polytechnics, Pradhan Mantri Kaushal Kendras (PMKKs) and Jan Sikshan Sansthans (JSSs)}. The scheme was implemented in 10 States and 2 Union Territories, namely, Assam, Bihar, Delhi, Kerala, Meghalaya, Maharashtra, Puducherry, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh, and West Bengal. Although this programme did not specifically focus on women but conscious efforts were made to ensure substantial participation of women in the programme. The total number of beneficiaries covered under the project is 63,255, out of which 24,398 were women.

### **Initiatives taken by the government to boost manufacturing**

- The growth of manufacturing sector was adversely affected due to COVID-19 pandemic, which has shown positive growth in double digits in the Financial Year 2021-2022

### **Schemes undertaken by DPIIT to promote manufacturing sector**

- Government of India has undertaken various steps to promote manufacturing sector and to boost domestic and foreign investments in India. These include introduction of Goods and Services Tax, reduction in Corporate tax, interventions to improve ease of doing business, FDI policy reforms, measures for reduction in compliance burden, policy measures to boost domestic manufacturing through public procurement orders, Phased Manufacturing Programme (PMP), to name a few.

- The series of measures taken by the Government to improve the economic situation and convert the disruption caused by COVID 19 into an opportunity for growth includes Atmanirbhar packages, introduction of Production Linked Incentive (PLI) Scheme in various Ministries, investment opportunities under National Infrastructure Pipeline (NIP) and National Monetisation Pipeline (NMP), India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), soft launch of the National Single Window System (NSWS), etc. An institutional mechanism to fast-track investments has been put in place, in the form of Project Development Cells (PDCs) in all concerned Ministries/ Departments of Government of India.
- Keeping in view India's vision of becoming 'Atmanirbhar' and to enhance India's Manufacturing capabilities and Exports, an outlay of INR 1.97 lakh crore (over US\$ 26 billion) has been announced in Union Budget 2021-22 for PLI schemes for 14 key sectors of manufacturing, starting from fiscal year (FY) 2021-22. With the announcement of PLI Schemes, significant creation of production, skills, employment, economic growth and exports is expected over the next five years and more.
- The reforms taken by Government have resulted in increased Foreign Direct Investment (FDI) inflows in the country. FDI inflows in India stood at US \$ 45.15 billion in 2014-2015 and have continuously increased since then, and India registered its highest ever annual FDI inflow of US\$ 84.84 billion (provisional figures) in the financial year 2021-22.
- As per Economic Survey 2021-22, inspite of Covid related disruptions there is trend of positive overall growth of Gross Value Addition (GVA) in manufacturing sector. The total employment in this sector has increased from 57 million in the year 2017-18 to 62.4 million in the year 2019-20.

**Details of some of the major initiatives /schemes are as follows:**

1. **Make in India initiative:** 'Make in India' is an initiative which was launched on 25th September 2014 to facilitate investment, foster innovation, build best in class infrastructure and make India a hub for manufacturing, design and innovation. It was one of the unique single, vocal for local initiative that promoted India's manufacturing domain to the world. 'Make in India' initiative is not the state/district/city/area specific initiative, rather it is being implemented all over the country.
2. **Industrial Corridor Development Programme:** In order to accelerate growth in manufacturing, Government of India (GoI) has adopted the strategy of developing Industrial Corridors in partnership with State Governments. The objective of this programme is to develop Greenfield Industrial regions/areas/nodes with sustainable infrastructure & make available Plug and Play Infrastructure at the plot level. As part of National Industrial Corridor Program, 11 Industrial Corridors are being developed in 4 phases.
3. **Ease of Doing Business:** The objective is to improve Ease of Doing Business and Ease of Living by Simplifying, Rationalizing, Digitizing and Decriminalizing Government to Business and Citizen



Interfaces across Ministries/States/UTs. The key focus areas of the initiative are simplification of procedures, rationalization of legal provisions, digitization of government processes, and decriminalization of minor, technical or procedural defaults.

4. **National Single Window System:** The setting up of National Single Window System (NSWS) was announced in the Budget 2020-21 with the objective to provide “end to end” facilitation and support to investors, including pre-investment advisory, provide information related to land banks and facilitate clearances at Centre and State level. Envisioned as a one-stop shop for investor related approvals and services in the country, the National Single Window System (NSWS) was soft-launched on 22nd September, 2021 by Hon’ble Commerce & Industry Minister. Large number of States/UTs Single Window Systems have been linked with the NSWS Portal thereby providing access to approvals of these States/UTs to be applied through NSWS.
5. **PM Gati Shakti National Master Plan (NMP):** PM Gati Shakti National Master Plan (NMP), a GIS based platform with portals of various Ministries/Departments of Government, was launched in October, 2021. It is a transformative approach to facilitate data-based decisions related to integrated planning of multimodal infrastructure, thereby reducing logistics cost. Empowered Group of Secretaries (EGoS) and Network Planning Group (NPG) have been created as institutional arrangement. About 2000 data layers of various Central Ministries/Departments/State Governments have so far been uploaded on the NMP.

For enhanced capital expenditure by states for infrastructure development, the Ministry of Finance, Department of Expenditure through the “Scheme for Special Assistance to States for Capital Investment for 2022-23” on 6th April 2022 has made a additional provision of Rs. 1,00,000 crore for disbursement among the states as long term loans at a zero interest rate. Out of this, under Part II of the scheme Rs 5,000 crore are specifically provided for PM GatiShakti related expenditure.

6. **National Logistics Policy:** National Logistics Policy (NLP) was launched on 17th September 2022, that aims to lower the cost of logistics and lead it to par with other developed countries. It is a comprehensive effort to address cost inefficiency by laying down an overarching interdisciplinary, cross-sectoral, and multi-jurisdictional framework for developing entire logistics ecosystem. This would boost economic growth, provide employment opportunities, and make Indian products more competitive in the global market.
7. **Production Linked Incentive scheme:** Keeping in view India’s vision of becoming ‘Atmanirbhar’, Production Linked Incentive (PLI) Schemes for 14 key sectors have been announced with an outlay of Rs. 1.97 lakh crore to enhance India’s Manufacturing capabilities and Exports. These schemes have potential for creation of high production, economic growth, exports and significant employment over the next five years and more.

**8. Indian Footwear and Leather Development Programme (IFLDP):** The Central Government has approved the Central Sector Scheme 'Indian Footwear and Leather Development Programme (IFLDP)' in January, 2022 with an allocation of Rs.1700 crore till 31.03.2026 or till further review, whichever is earlier.

**9. North East Industrial and Investment Promotion Policy (NEIIPP), 2007:**

North East Industrial and Investment Promotion Policy (NEIIPP), 2007 was notified for a period of 10 years from 1.4.2007 to 31.03.2017 with the purpose to boost industrialization of the region. The registered eligible units continue to receive benefits under grand-parenting of scheme.

**Schemes undertaken by other Ministries/ Departments to promote manufacturing sector**

**1. Schemes to encourage domestic manufacturing of pharmaceutical drugs including bulk drugs and medical devices** are as follows;

- 1) The Scheme for *Promotion of Bulk Drug Parks*, with a financial outlay of Rs. 3,000 crores and the tenure from FY 2020-2021 to FY 2024-25, provides for financial assistance to three States for establishing Bulk Drug Parks.
- 2) The scheme of *Strengthening of Pharmaceutical Industry (SPI)*, was launched with a financial outlay of Rs. 500 crores and the tenure from FY 2021-2022 to FY 2025-26, to provide infrastructure support for pharma MSMEs in clusters and to address the issues of technology upgradation of individual pharma MSMEs.
- 3) Under the scheme "*Promotion of Medical Devices Parks*", final approval for financial assistance of Rs. 100 crore each, has been given to the States of Uttar Pradesh, Tamil Nadu, Madhya Pradesh and Himachal Pradesh for establishment of common facilities in their Medical Device Parks.

**2. Modified Programme for Semiconductors and Display Manufacturing Ecosystem:** In furtherance of the vision of Aatmanirbhar Bharat and positioning India as the global hub for Electronics System Design and Manufacturing, a comprehensive program for the development of semiconductors and display manufacturing ecosystem in India was approved by Government of India with an outlay of 76,000 crore (>10 billion USD). The Programme contained various schemes to attract investments in the field of semiconductors and display manufacturing.

**3. FAME-India Scheme (Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles):** In order to promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same, FAME-India Scheme- Phase-I [Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India] was implemented from 1<sup>st</sup> April 2015 for a period of two years which was subsequently extended upto 31<sup>st</sup> March, 2019. Total outlay of Phase-I of the FAME-India Scheme has been enhanced from Rs. 795 Crore to Rs. 895 Crore.



The Phase-II of FAME-India scheme proposes to give a push to electric vehicles (EVs) in public transport and seeks to encourage adoption of EVs by way of market creation and demand aggregation.

4. **Udyami Bharat Scheme:** ‘Udyami Bharat’ is reflective of the continuous commitment of the government, right from day one, to work towards the empowerment of Micro Small and Medium Enterprises (MSMEs). The government has launched several initiatives from time to time like MUDRA Yojana, Emergency Credit Line Guarantee Scheme, Scheme of Fund for Regeneration of Traditional Industries (SFURTI) etc. to provide necessary and timely support to the MSME sector, which has helped benefit crores of people across the country. ‘Raising and Accelerating MSME Performance’ (RAMP) scheme with an outlay of around Rs 6000 crore, aims to scale up the implementation capacity and coverage of MSMEs in the States, with impact enhancement of existing MSME schemes.

5. **PM Mega Integrated Textile Region and Apparel (PM MITRA):**

In order to have world-class industrial infrastructure which would attract cutting age technology and boost FDI and local investment in the textiles sector, Ministry of Textiles issued notification to set up 7 Mega Integrated Textile Region and Apparel (PM MITRA) Parks with a total outlay of Rs. 4,445 crore. These parks will offer an opportunity to create an integrated textiles value chain right from spinning, weaving, processing/dyeing and printing to garment manufacturing at one location. PM MITRA scheme aspires to position India strongly on the Global textiles map.

### **3.9 National Single Window System facilitates over 44000 approvals since launch; over 28 thousand applications under process**

- The **National Single Window System (NSWS)** currently accepts applications for **248 G2B clearances from 26 Central Ministries/ Departments**, in addition to different State/UT Level clearances in 16 States/ UTs.
- The portal is rapidly gaining traction amongst the investors community and as of date has about 3.7 lakh plus unique visitors. 44,000+ approvals have been facilitated through NSWS and 28,000+ approvals are currently under process. The portal will progressively onboard a greater number of approvals and licenses, based on user /industry feedback. The Government is committed to reforms and other bold measures for creating a conducive business and investment environment in all sectors.
- NSWS was soft launched to all stakeholders and the public on the 22nd of September 2021
- NSWS was created by Department for Promotion of Industry and Internal Trade (DPIIT) as per the budget announcement of creation of an Investment Clearance Cell (ICC) to provide a single platform to enable the identification and obtaining of approvals and clearances needed by investors, entrepreneurs, and businesses in India.

- The system is envisioned to reduce duplicity of information submission to different ministries, reduce compliance burden, promote sector specific reforms and schemes, reduce gestation period of projects, and promote ease of starting and doing business. NSWS enables the identification, applying and subsequent tracking of approvals for all integrated States and Central Departments, making it a true National Single Window System.

## 4. ENVIRONMENT

### 4.1 Carbon Capture utilisation and storage policy framework: NITI Aayog

#### Context:

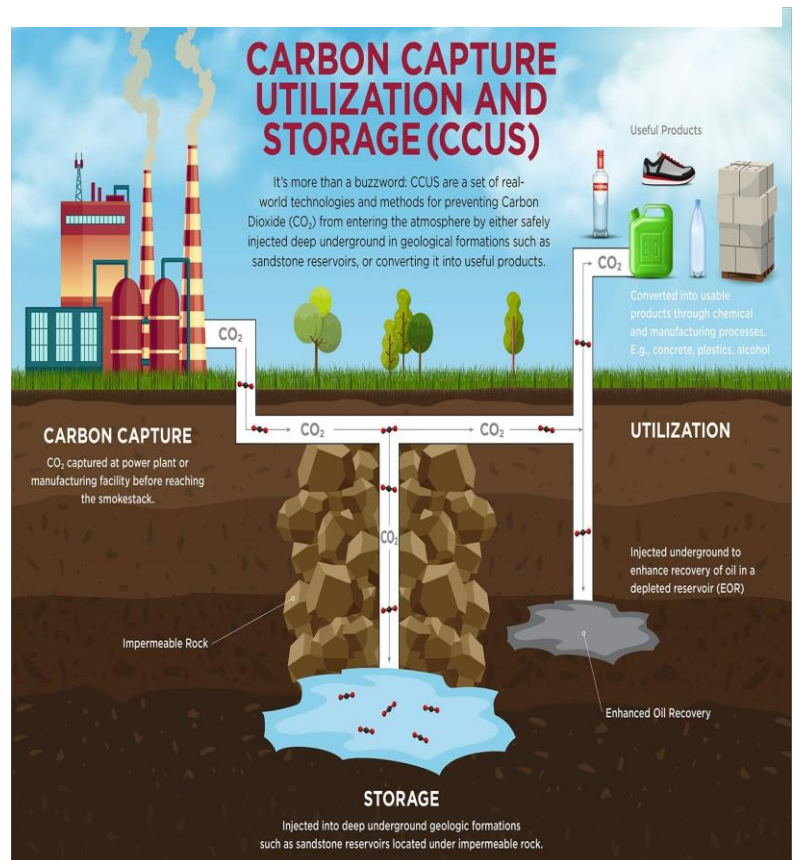
- Recently, a study report on the Carbon Capture, Utilisation and Storage (CCUS) Policy Framework and Deployment Mechanism in India has been released by NITI Aayog.

#### About the Framework

- The report examines the significance of Carbon Capture, Utilization, and Storage as an emission reduction technique.
- The paper describes the broad-scale policy interventions required across numerous sectors for its deployment.
- India's annual CO<sub>2</sub> emissions per person were around 1.9 tonnes, which is around one-fourth of China's and less than 40% of the global average

#### What is Carbon Capture, Utilization and Storage (CCUS)?

- Its main objective is to prevent the captured carbon dioxide from entering the atmosphere, by either storing or reusing it in order to reduce carbon emissions.
- It is a three-step process that involves capturing the carbon dioxide produced by energy production or industrial processes, like the production of steel or cement, transporting it, and then storing it underground.
- It is a technology used to decarbonize carbon dioxide (CO<sub>2</sub>) from highly polluting industries like steel, cement, oil, gas, petrochemicals, chemicals, and fertilisers.
- Saline aquifers and exhausted oil and gas reservoirs are two potential locations for carbon emissions storage.
- It would support the development of a low-carbon, hydrogen economy and aid in reducing atmospheric CO<sub>2</sub>



#### Significance of CCUS

- It will help to reduce the carbon intensity of industrial operations and is fundamental component to meet the global net-zero ambitions of the Paris Agreement.

- The Intergovernmental Panel on Climate Change in its Global Warming of 1.5 °C report stated that net-zero emissions can't be achieved by 2050 without ambitious mitigation action.

### Associated Challenges

- **Cost:** Reduce the price of the mechanisms needed to implement the technology.
- **Doesn't attract Private Sector:** Reluctance of private sector to invest, since there are no sufficient incentives or benefits associated with the sale of CO<sub>2</sub>.
- **Dangers associated with storage and transportation of CO<sub>2</sub>:** While the accident count for such cases is low, but the potential danger cannot be ignored.
- **Security issues:** Leakages would prove highly fatal due to high toxicity of the gas, leaving the air unbreathable.

### Significance

- **Cleaner Products:** Enabling production of cleaner products; reducing imports & leading to AtmaNirbhar Bharat
- **Decarbonising Sectors:** Implementing CCUS will prove crucial in decarbonising the otherwise challenging sectors
- **Employment Generation:** It is estimated that by 2050, carbon capture of about 750 mtpa will generate around 8-10mn jobs
- **Reduce Social Cost of Carbon:** The social cost of carbon is the projected cost and benefit to society from a change in climate brought on by an extra metric tonne of CO<sub>2</sub> put into the atmosphere each year.
- **Widely Opportunistic:** Provide wide range of opportunities to various value-added products such as: Green Urea, Chemicals (methanol & ethanol), Building Materials (concrete & aggregates), Food and beverage form application, Polymers (including bioplastics)
- **Enable Sunrise Sectors:** Play a significant role in enabling sunrise sectors such as coal gasification & hydrogen economy
- **Concrete Enrichment:** This would strengthen concrete, thereby increasing the durability of infrastructure.

### Way Forward

- It will prove beneficial for the economy if value-added products like green ammonia, green methanol are available through the process of carbon capturing.
- Indian economy will sustain fossil-fuel-based resources in the future, thus CCUS policy will prove beneficial in the course of time.

- Government must enact a policy for mandatory implementation of CCUS technology and create a market favouring its use.
- There must be a financing and funding mechanism associated with the early stage of the policy.

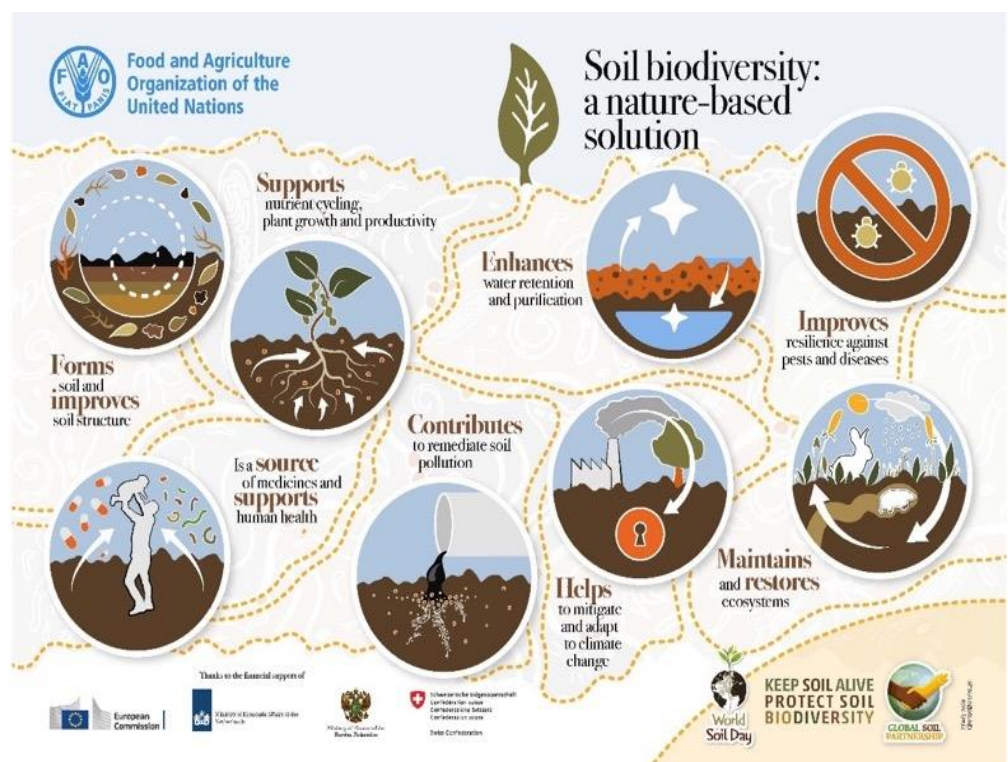
#### 4.2 Soil Management and Food Security

##### Context

- World Soil Day 2022 was recently observed with its guiding theme, ‘Soils: Where food begins’. It was a means to raise awareness of the importance of maintaining healthy soils, ecosystems and human well-being.

##### About Soil degradation

- Soil degradation is the loss of the intrinsic physical, chemical, and/or biological qualities of soil either by natural or anthropic processes, which results in the diminution or annihilation of important ecosystem functions.
- Soil degradation affects around 29% of India’s total land area.
- Nearly 7 million hectares suffer from a nutrient loss in soil, depletion of soil organic matter, or SOM.



- About one-third of the earth’s soils are already degraded and, about 90 per cent could be degraded by 2050 if no corrective action is taken.

##### What is the significance of healthy soils?

- They support healthy plant growth to enhance both our nutrition and water percolation to maintain groundwater levels.
- Soils help to regulate the planet’s climate by storing carbon
- They are the second largest carbon sink after the oceans.
- They help maintain a landscape that is more resilient to the impacts of droughts and floods.
- Soil is essential for food production as nearly 95% of global food production depends on soil.



**What are the causes of soil degradation?**

- Industrial activities and mining,
- Unscientific waste disposal and treatment,
- Unsustainable agricultural practices like the production of water-intensive crops
- Fossil fuel extraction and processing and transport emissions.
- Soil nutrient loss range from soil erosion, runoff, leaching and the burning of crop residue

**What conservation strategy has India adopted?**

- The government of India is implementing a five-pronged strategy for soil conservation. This includes
- making soil chemical-free
- saving soil biodiversity
- enhancing SOM
- maintaining soil moisture
- mitigating soil degradation and preventing soil erosion
- Soil Health Card (SHC) scheme was launched in 2015 and is used to assess the current status of soil health and determine changes in soil health over time.
- Pradhan Mantri Krishi Sinchayee Yojana, to prevent soil erosion, regeneration of natural vegetation, rainwater harvesting and recharging of the groundwater table was launched.
- National Mission for Sustainable Agriculture promotes traditional indigenous practices such as organic farming and zero-budget natural farming, thereby reducing dependency on chemicals

**How has FAO collaborated with India to promote soil conservation?**

- FAO is collaborating with the National Rainfed Area Authority and the Ministry of Agriculture and Farmers' Welfare to develop forecasting tools using data analytics that will aid vulnerable farmers in making informed decisions on crop choices, particularly in rain-fed areas.
- FAO, in association with the Ministry of Rural Development, supports Deen Dayal Antyodaya Yojana-National Rural Livelihoods Mission's Community Resource Persons to increase their capacities towards supporting on-farm livelihoods
- The FAO works in eight target States, namely, Madhya Pradesh, Odisha, Rajasthan, etc. for boosting crop diversification and landscape-level planning.

**Way forward**

- Strengthen communication channels between academia, policymakers and society for the identification, management and restoration of degraded soils, as well as in the adoption of anticipatory measures.
- Dissemination of timely and evidence-based information to all relevant stakeholders.
- Greater cooperation and partnerships are central to ensuring the availability of knowledge, sharing of successful practices, and universal access to clean and sustainable technologies.
- Planting trees to protect topsoil, developing and maintaining home/kitchen gardens, and consuming foods that are mainly locally sourced and seasonal.

**4.3 Perennial rice developed in China****Why in news?**

Farmers in China are now growing a perennial variety of rice which does not need to be planted every year.

**About the Perennial Variety of Rice**

- Perennial rice is a variety of long-lived rice; capable of regrowing season after season without reseeded.
- They can spread by horizontal stems that are either below or just above the soil's surface, like many other perennial plants, but they can also reproduce sexually by generating flowers, pollen, and seeds.
- Developed by researchers at Yunnan University and the first variety was released to Chinese growers in 2018.
- Nomenclature– perennial rice PR23
- Process- By cross-breeding regular annual rice *Oryza sativa* with a wild perennial variety from Africa.

**Associated Features**

- Higher productivity & Perennial in Nature- Contrary to conventional rice, which is planted each season, PR23 can produce eight harvests (6.8 tons per hectare) in a row over the course of four years (as these plants with stronger roots grow back vigorously after each harvest).
- Cheaper– Growing PR23 is significantly less expensive because it needs less labour, seeds, and chemical inputs.
- Other benefits– as per the journal Nature Sustainability–growing perennial rice over a period of four years resulted;
- Environmental advantages like increased water availability for plants and soils that accumulate about a ton of organic carbon per acre each year.

- **Drought resistance:** Because of its shallow root system, annual rice is highly vulnerable to drought.
- **Resist weed invasion:** As the fallow period has reduced, weed pressure has increased in upland rice systems.
- **Plant nutrition:** Deep-rooted perennial plants can get a large amount of their phosphorus from the subsoil, whereas shallow-rooted species, like rice, get the majority of their nutrients from the topsoil.

### Rice Cultivation in India

- In India, rice is grown from 8 to 35°N latitude and up to 3000 meters above sea level.
- A hot, humid atmosphere is necessary for rice production.
- It works best in areas with high humidity, continuous sunshine, and a reliable supply of water.
- The crop needs an average temperature between 21 and 37°C for the duration of its life.
- The crop can withstand temperatures up to 40 to 42°
- The two main soil types in India where rice is farmed are uplands and lowlands.
- West Bengal has the highest production of rice in India followed by UP, Punjab, Tamil Nadu and Andhra Pradesh.

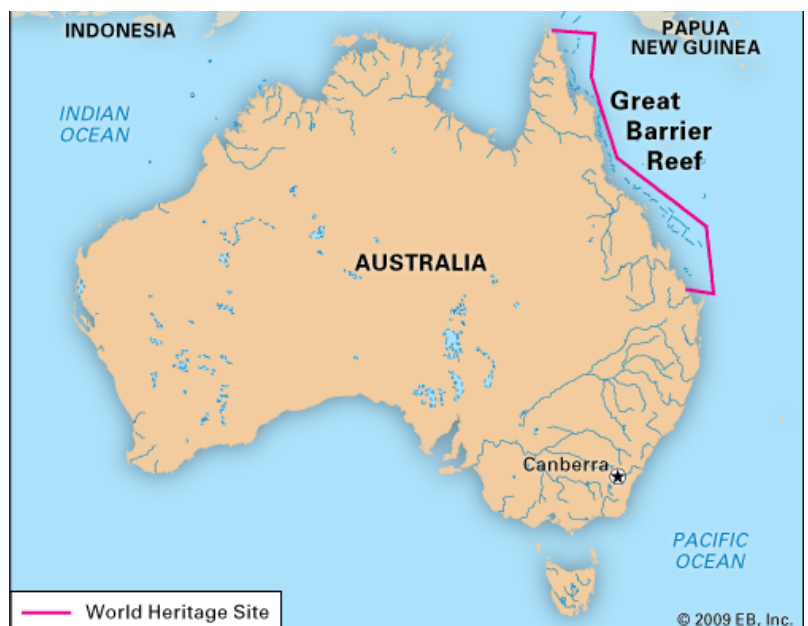
### 4.4 Great Barrier Reef reported to be 'in danger'.

#### Context:

- Recently, a joint report by the International Union for Conservation of Nature (IUCN) and UNESCO's World Heritage Centre (WHC) expressed concern about the status of the Great Barrier Reef (GBR) in Australia, recommending that it "be inscribed on the List of World Heritage in Danger."

#### About Corals

- Corals are marine invertebrates or animals without spines. Corals are scientifically classified under the phylum Cnidaria and the class Anthozoa.
- The polyps that makeup coral are genetically similar organisms. In the tissues of these polyps, there are tiny algae called zooxanthellae.
- Corals and algae share a mutualistic relationship.
- They are known as "Rainforests of the Seas".





**About the Great Barrier Reef (GBR)**

- It is the largest and most spectacular coral reef ecosystem in the world, made up of over 2,900 individual reefs and 900 islands.
- It is located in the Coral Sea (North-East Coast), off the coast of Queensland, Australia.
- It is the biggest single living structure in the world and is visible from outer space.
- The coral polyps that make up this reef's structure number in the billions.
- They are composed of microscopic, soft-bodied organisms with genetically identical bodies called polyps. The structure of coral reefs is made up of a hard, protective limestone skeleton known as a calicle.
- In 1981, it was selected as a World Heritage Site.

**Key Findings of the report**

- Factors affecting GBR: The GBR is adversely and significantly impacted by climate change (affecting its resilience to sustain and regenerate), frequent bleaching events (making many reefs sterile), degraded water quality.
- Conservation Outlook: Critical, Fishing and Coastal Development highlighted as major threats to the GBR
- The Reef 2050 Long-Term Sustainability Plan has been recognised as a significant step in providing an overarching framework for the management of the site and addressing the multiple threats it is facing; however, progress towards achieving some of the targets has been slow so far and it has not been possible yet to stop the decline in many of the site's values.
- As a result of climate change in conjunction with other factors, such as reef building and recruitment, the integrity of numerous critical processes supporting the complexity of the Great Barrier Reef has also been declining.
- Coral recruitment across the entire Great Barrier Reef is estimated to have decreased by 89 percent in 2018 compared to recruitment levels before 2016.

**What does putting GBR on the List of World Heritage in Danger entail?****Objective:**

- According to UNESCO, “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, and to encourage corrective action.”
- Under the 1972 World Heritage Convention: Inscribing a site on the List allows the WHC to allocate immediate assistance from the World Heritage Fund to the endangered property, while simultaneously gathering international support and attention to the site.

- Inclusion in such a list can have a tangible impact on all kinds of developmental projects, which may be politically significant for governments.

### Challenges before Australia

- If Australia were to adopt the recommendation of the panel to phase out “gill net fishing” which indiscriminately harms marine life (not just the intended catch), it would have to make substantial investments to compensate fisheries which rely on such a method.
- It may also lose political goodwill amongst fishermen who form a voting block in Queensland.

## 4.5 Black Corals

**Context:** Recently Scientists have discovered new species of black corals near the Great Barrier Reef.

- Black corals can be found growing both in shallow waters and down to depths (over 8,000 m).
- Some of them are feather-like while others are straight and are not as colourful as the other corals that depend on sun and photosynthesis for energy.
- Black corals are filter feeders and eat tiny zooplankton that is abundant in deep waters.
- Coral Reefs are underwater ecosystems which are formed of colonies of coral polyps held together by calcium carbonate.



### Conditions for the formation of Coral Reefs:

- Grow only in shallow photic zones in a symbiotic relation with zooxanthellae
- Warm tropical water (25°-27° C)
- Low nutrient water
- Cannot survive near river mouths as fresh water is high

### Types of Corals:

- **Fringing Reef:** found in continent margins.
- **Barrier Reef:** wide, elongated and extensive corals away from the land.
- **Atoll:** they are circular-shaped corals found in open seas far off from lands.

### Threats

- Coral bleaching

- Dredging and trawling methods
- Global climatic change
- Unsustainable fishing
- Land-based pollution

#### 4.6 Himalayan Yak

##### **Context:**

- The Himalayan yak has recently earned the food animal tag from the Food Safety and Standard Authority of India (FSSAI). The categorisation is expected to help check the decline in the population of the high-altitude bovine by making it a part of the conventional milk and meat industry.

##### **About:**

- Yaks belong to the genus *Bos* and are therefore related to cattle (*Bos primigenius* species).
- Domestic Yak (*Bos Grunniens*) descended from the wild yak (*Bos mutus*).

##### **Distribution:**

- Yak is found throughout the Himalayan region -- Arunachal Pradesh, Sikkim, North Bengal, Uttarakhand, Himachal Pradesh, Ladakh and Jammu and Kashmir -- while wild Yak is found in Tibet.
- It is also found as far north as Mongolia and Russia.



##### **National Research Centre on Yak:**

- The Government of India established the ICAR-National Research Centre on Yak, in 1989 at Dirang, Arunachal Pradesh as a dedicated centre for research into yak husbandry.

##### **Yak Census 2019:**

- According to a census carried out in 2019, India has some 58,000 yaks – a drop of about 25% from the livestock census of 2012.
- The drastic decline could be attributed to less remuneration from the bovid and discouraging the younger generations from continuing with nomadic yak rearing.
- The sale of yak milk and meat is limited to local consumers.

#### **4.7 Loss and Damage decisions: Pitfalls and Promises**

##### **Context:**

- UN parties agree on funding mechanism to fight impacts of climate change.

##### **About the News:**

- United Nations Climate Change Conference (COP27) has recently clinched a breakthrough agreement to provide “loss and damage” funding for vulnerable countries hit hard by climate disasters.
- The funding will address the impacts on the lives and livelihoods of communities ruined by the very worst impacts of climate change.
- The package will help strengthen countries to cut greenhouse gas emissions besides boosting the support of finance, technology and capacity building needed by developing countries.
- The step is seen as the commitment of global parties to limit global temperature rise to 1.5 degrees Celsius above pre-industrial levels.

##### **Loss and Damage mechanism:**

- **About:** It is an outcome of the Conference of Parties (COP-27) to focus on new funding arrangements for Loss and Damages to parties particularly vulnerable to the adverse effects of climate change.
- **Compensation mechanism:** It will focus on establishing causal relations between the injurer and the victim since the adverse effects of climate change occur substantially later than greenhouse gas emissions causing them
- **New committee:** UN will create a new transitional committee to prepare elements relating to the operationalisation of the new funding arrangements to be adopted at COP28.

##### **Major issues:**

- **Absence of clarity:** The committee formed to identify and expand sources of funding lacks transparency on the source of funding for the new funding mechanism.
- **Non-compliance:** There is apprehension over non-compliance by developed countries for the new L and D fund as the climate finance commitment of mobilising \$100 billion per year by 2020 is yet to materialise.
- **Lack of teeth:** The new funding arrangements will complement the existing arrangements thus diluting the demands by the Alliance of Small Island States (AOSIS) to set up a dedicated loss and damage response fund in addition to existing climate finance commitments.

**Important outcomes of COP27:**

- **Technology:** Launching of a new five-year work program at COP27 to promote climate technology solutions in developing countries.
- **Mitigation:** Launching of mitigation work programme for scaling up mitigation ambition and implementation until 2026 with periodical review for its extension.
- **Nudge for SDG targets:** Formal requests to governments to revisit and strengthen the 2030 targets in **their** national climate plans by the end of 2023 besides accelerating efforts to phasedown unabated coal power and inefficient fossil fuel subsidies.
- **Energy crisis:** Need for transforming energy systems for more secure, reliable, and resilient clean energy in the aftermath of unprecedented global energy crisis.

**4.8 200 million Indians at risk of lethal heat waves annually: World Bank****Context:**

- A new World Bank report finds that climate change triggered temperature rise and lethal heat waves could affect more than 160 to 200 million people every year, and around 34 million Indians will face job losses due to heat stress-related productivity decline.

**About the News:**

- World Bank has released the “Climate Investment Opportunities in India’s Cooling Sector” report which talks about India’s key vulnerabilities, opportunities and need to shift to a more energy-efficient pathway.

**Key Vulnerabilities of India are:**

- More than 160 to 200 million people could be exposed to a lethal heat wave in India every year.
- Around 34 million Indians will face job losses due to heat stress-related productivity decline.
- Current food loss due to heat during transportation is close to \$13 billion annually

**Major Opportunities for India are:**

- By 2037, the demand for cooling is likely to be eight times more than current levels
- Need to deploy alternative and innovative energy efficient technologies for keeping spaces cool could open an investment opportunity of \$1.6 trillion by 2040 besides reducing greenhouse gas emissions significantly and creating 3.7 million jobs.
- With the demand for cooling shooting up, there will be a demand for a new air-conditioner every 15
- These cooling requirements could lead to an expected rise of 435% in annual greenhouse gas emissions over the next two decades.



**What were the key recommendations of the report?**

- The report proposes a roadmap to support New Delhi's India Cooling Action Plan (ICAP) 2019, through new investments in three major sectors: building construction, cold chains and refrigerants.
- Adopting climate-responsive cooling techniques as a norm in both private and government-funded constructions.
- This can ensure that those at the bottom of the economic ladder are not disproportionately affected by rising temperatures.
- The report suggests that India's affordable housing program for the poor, the Pradhan Mantri Awas Yojana (PMAY), can adopt such changes on scale.
- Enact a policy for district cooling which could lead to the consumption of 20-30% less power than the most efficient conventional cooling solutions.
- District cooling technologies generate chilled water in a central plant which is then distributed to multiple buildings via underground insulated pipes. This brings down the cost for providing cooling to individual buildings.
- Implementation of local and city-wide urban cooling measures such as cool-roofs should also be considered.
- Fixing gaps in cold chain distribution networks by investing in pre-cooling and refrigerated transport systems.
- This will minimize rising food and pharmaceutical wastage during transport due to higher temperatures.
- It can help decrease food loss by about 76% and reduce carbon emissions by 16%.
- Improvement in servicing, maintenance and disposal of equipment that uses hydro chlorofluorocarbons alongside a shift to alternative options with a lower global warming footprint. This can create two million jobs for trained technicians over the next two decades and reduce the demand for refrigerants by around 31%

#### 4.9 **Great Indian Bustard (GIB)**

The Supreme Court of India recently requested the Union ministry of environment, forest and climate change to consider launching 'Project Great Indian Bustard (GIB)' like one for tigers.

##### **About:**

- The Great Indian Bustard, found mainly in the Indian subcontinent, is the flagship grassland species of India.
- It is one of the largest flying birds in the world, and India's heaviest flying bird.
- The male bird weighs upto 12-15 kg and female bird up to 5-8 kg.



##### **Physical description:**

- Black crown on the forehead contrasting with the pale neck and head.
- The body is brownish and the wings are marked with black, brown and grey.

##### **Diet:**

- They feed on grass seeds, insects like grasshoppers and beetles, and sometimes even small rodents and reptiles. The species primarily feed on meswak, sewan grass.

##### **Distribution:**

- Its population of about 150 in Rajasthan accounts for 95% of its total world population.
- They are mainly in Jaisalmer district of Rajasthan, including the Desert National Park which is the natural habitat of the species.
- Grasslands of Kutch in Gujarat which is home to second-largest bustard population in India. Arid regions of Maharashtra (Solapur), Karnataka (Bellary and Haveri) and Andhra Pradesh (Kurnool)
- It is the State bird of Rajasthan.

##### **Conservation status:**

- Listed in Schedule I of the Indian Wildlife (Protection) Act, 1972,
- Listed in Appendix I of CITES,
- Listed as Critically Endangered on the IUCN Red List.

##### **Project Tiger:**

- The 'Project Tiger', launched in 1973, is a Centrally Sponsored Scheme (CSS) of the Ministry of environment, forests and climate change.



- It is providing funding support to 18 tiger range states for in-situ conservation of tigers in designated tiger reserves, and has put the endangered animal on an assured path of recovery by saving it from extinction.
- It started five decades back with nine tiger reserves, now increased to 51 covering 2.23% of the country's geographical area.

#### **4.10 Turtle Species in Global Endangered List**

##### **Context:**

- Recently Red-Crowned Roofed Turtle and Leith's Softshell Turtle facing high extinction risk have been added in Appendix I of CITES (COP 19.)
- Both the species are freshwater reptiles with who are known to retreat inside their shells to get away from people or animals.

##### **Habitat:**

##### **Red-crowned roofed turtle**

- India, Nepal and Bangladesh
- In India: The Ganga and Brahmaputra River basins, National Chambal River Gharial Sanctuary

##### **Leith's soft-shell turtle (endemic to India)**

- Rivers and reservoirs mainly in southern peninsular: Cauvery, Tungabhadra, Ghataprabha, Bhavani, Godavari and Moyar drainages
- Odisha, Madhya Pradesh, Karnataka, Andhra Pradesh, Kerala, Maharashtra and Tamil Nadu.

##### **Threats:**

- Habitat loss due to unchecked mining and pollution.
- Water extraction and irrigation leading to irregular flow of dams.
- Illegal fishing nets, poaching and illegal trade.
- Sand mining and agriculture in Ganga basin is destroying sandbars (nesting sites)

##### **Conservation status:**

| <b>List</b>             | <b>Red-Crowned Roofed Turtle</b> | <b>Leith's Softshell Turtle</b> |
|-------------------------|----------------------------------|---------------------------------|
| IUCN                    | Critically Endangered            | Critically Endangered           |
| Wildlife Protection Act | Schedule I                       | Schedule IV                     |
| CITES                   | Appendix I                       | Appendix I                      |

#### 4.11 30x30 goal and CBD

**Context:**

- As per the new research, Asia is not likely to meet the ambitious 30X30 goal proposed under the Post-2020 Global Biodiversity Framework of the Convention on Biological Diversity (CBD).

**About:****30x30 goal**

- It is a worldwide initiative for governments to designate 30% of Earth's land and ocean area as protected areas by 2030.
- It was launched by the High Ambition Coalition for Nature and People in 2020.
- It was first floated in 2019.

**Convention on Biological Diversity (CBD)**

- It is a legally binding treaty to conserve biodiversity has been in force since 1993.

**It has 3 main objectives:**

- The conservation of biological diversity.
- The sustainable use of the components of biological diversity.
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- CBD Secretariat is based in Montreal, Canada.

#### 4.12 The Global Snow Leopard Ecosystem Protection Program (GSLEP)

**Context:**

Indian scientists recently received international award on behalf of snow leopard conservation alliance.

**About:**

- Indian snow leopard experts received the Madrid-based BBVA Foundation's Worldwide Biodiversity Conservation Award on behalf of a 12-nation intergovernmental alliance -The Global Snow Leopard Ecosystem Protection Program (GSLEP).



### What is The Global Snow Leopard Ecosystem Protection Program (GSLEP)?

- The GSLEP is a first-of-its-kind intergovernmental alliance for the conservation of the snow leopard and its unique ecosystem.
- It is led by the environment ministers of 12 countries in Asia that form the home range of the snow leopard. These are Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan and Uzbekistan. The total range spans two million square kilometres.
- The GSLEP Program's secretariat is based in Bishkek, and is hosted by the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic.
- GSLEP was created in 2013 when officials, politicians and conservationists arrived at a common conservation strategy enshrined in the Bishkek Declaration (2013) to cooperate in the conservation of this species and its habitat.

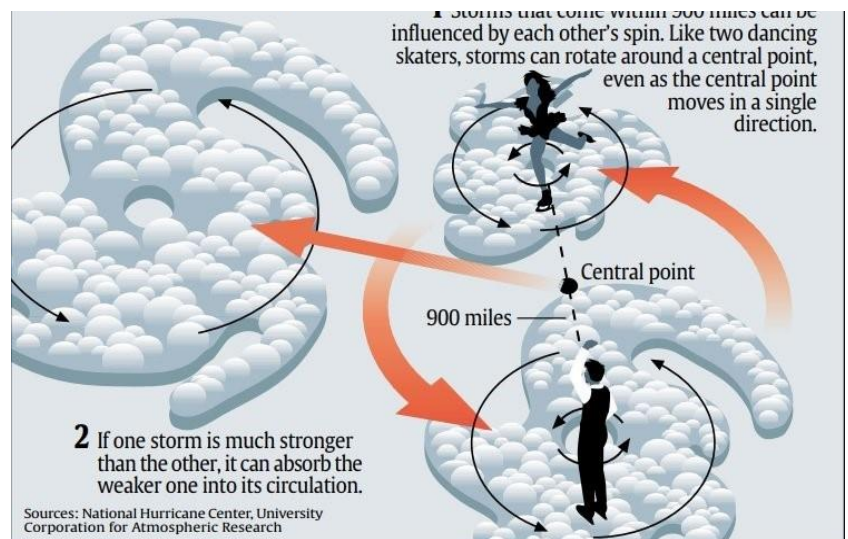
#### 4.13 Fujiwhara effect

##### Context:

- Recently, two cyclones, namely Hinnamnor and Gardo interacted showcasing Fujiwhara Effect.

##### About:

- It is any interaction between tropical storms formed around the same time in the same ocean region with their centres or eyes at a distance of less than 1,400 km, with intensity varying between a depression and a super typhoon.
- The interaction could lead to changes in the track and intensity of either or both storms' systems.
- In rare cases, the two systems could merge, especially when they are of similar size and intensity, to form a bigger storm.



#### 4.14 Red Sand Dunes (Erra Matti Dibbalu) of Vishakapatnam

##### Context:

- Recently scientists urged the Andhra govt to protect the glacial-period coastal red sand dunes of Vizag.
- Erra Matti Dibbalu also called as Red Sand Hills is located very near to the Bay of Bengal.
- The top light yellow sand units have remained geochemically unaltered. The site represents the late quaternary geologic age and its continuation till the present.

- This site was declared as a geo-heritage site by the Geological Survey of India (GSI) in 2014 and the Andhra Pradesh government has listed it under the category of ‘protected sites’ in 2016.

**Significance**

- They exhibit badland topography, including gullies, sand dunes, buried channels, beach ridges, paired terraces, the valley in the valley, wave-cut terrace, knick point and waterfalls.
- It can help study the impact of climate change, as it has seen both the glacial and the warm periods.
- They are found in 3 tropical regions only which includes Teri Sands in Tamil Nadu and in Sri Lanka.
- The artefacts indicate an Upper Palaeolithic horizon and Late Pleistocene epoch, which is 20,000 BC as the excavations revealed stone implements of 3 distinctive periods and the pottery of the Neolithic man.

## 5. SCIENCE & TECHNOLOGY

### 5.1 Global antimicrobial resistance and use surveillance system (GLASS) report, 2022

#### Recently WHO has released GLASS Report 2022

- It was launched in 2015 to foster Antimicrobial Resistance (AMR) surveillance and inform strategies to contain AMR.

#### What is Antimicrobial resistance (AMR)

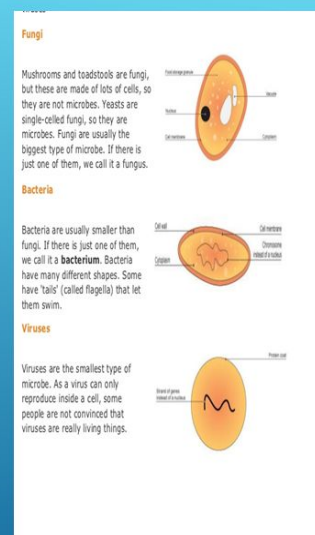
- AMR occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat.
- WHO has declared that AMR is one of humanity's top 10 global public health threats.
- Misuse and overuse of antimicrobials are the main drivers in the development of drug-resistant pathogens.
- Lack of clean water and sanitation and inadequate infection prevention and control promotes the spread of microbes, some of which can be resistant to antimicrobial treatment.
- WHO has recommended few of the antimicrobials like Escherichia coliand, Klebsiella pneumoniae, E. coli, Staphylococcus aureus, Staphylococcus aureus, N. gonorrhoeae which are creating AMR in humans.

#### Global Action Plan on Antimicrobial Resistance (GAP)

- Globally, countries committed to the framework set out in the Global Action Plan<sup>1</sup> (GAP) 2015 on AMR during the 2015 World Health Assembly and committed to developing and implementing multisectoral national action plans.
- It was subsequently endorsed by the Governing Bodies of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE).

### Difference between fungi, bacteria and viruses

| Features                 | Viruses     | Bacteria                 | Fungi            |
|--------------------------|-------------|--------------------------|------------------|
| Size                     | 0.02-0.3 μ  | 0.3-2μ                   | 3-10μ            |
| Cell Type                | Acellular   | Prokaryote               | Eukaryote        |
| DNA/ RNA                 | Either      | Both                     | Both             |
| Nucleic acid replication | Host cell   | Continuous               | G & S phase      |
| Replication              | Complex     | Binary fission           | Mitosis/ Meiosis |
| Organelle                | Uses host   | Not membrane bound       | Membrane bound   |
| Ribosomes                | None        | 70S(30S+50S)             | 80S(40S+60S)     |
| Cell memb                | Env/Non env | No sterol<br>#Mycoplasma | Ergosterol       |
| Cell wall                | None        | Peptidoglycan            | Chitin, Glucan   |





## 5.2 Project Vanni

Google India has teamed up with the Indian Institute of Science (IISc) for the initiative of Project Vanni.

It aims to build an artificial intelligence/machine learning (AI/ML) model to collect language samples from 773 districts across India.

- It will be an AI-based language model that can understand diverse Indian languages and dialects.
- The potential use of such datasets is in building apps in health, agriculture, and financial inclusion areas.

### Objectives of Project Vaani :

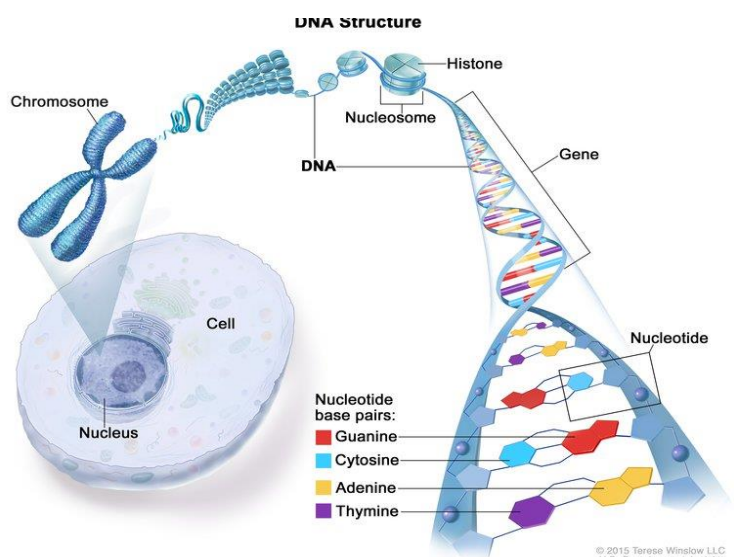
- Automatic speech recognition, speech-to-speech translation and natural language understanding.
- To deliver a technological solution that can eliminate the linguistic barriers
- It will help in future in to create an artificial intelligence-based language model that can understand diverse languages and dialects used in India.
- The new model proposed under the Vaani project supports both speech and text translation. This would be a leap from the Multilingual Representations for Indian Languages (MuRIL), which only supports text-based translation.
- The new model would be trained on speech and text from over 100 Indian languages, which are spoken by over 1 lakh people across India.

## 5.3 Wave of COVID pandemic and Genome sequencing

- Union Health Ministry has directed all states and UTs to ramp up genome sequencing as sudden surge in COVID cases in countries like China, USA, Japan etc. pose a threat of another wave of COVID pandemic.

### What is Genome sequencing?

- It is figuring out the order (sequence) of DNA nucleotides, or bases, in a genome the order of As, Cs, Gs, and Ts that make up an organism's DNA.
- The human genome is made up of over 3 billion of these genetic letters.
- Genome sequencing is often compared to "decoding," but a sequence is still very much in code. In a sense, a genome sequence is simply a very long string of letters in a mysterious language.
- Genome sequencing to track variants will be



done through Indian SARS-CoV-2 Genomics Consortium (INSACOG) network.

- It is a consortium of National Laboratories to monitor the genomic variations in SARS-CoV-2 (virus that causes COVID-19) aiding understanding of how virus spreads and evolves, provides information to aid public health response etc.
- It is jointly initiated by Union Health Ministry of Health, and Department of Biotechnology with Council for Scientific & Industrial Research and Indian Council of Medical Research.

#### **5.4 Fifth Scorpène-Class submarine Vagir delivered to Navy**

- Six Scorpene submarines are being built indigenously under Project-75 by Mazagon Dock Shipbuilders Limited (MDL) under technology transfer from Naval Group of France.
- **Other 5 submarines are:** Kalvari, Khanderi, Karanj, Vela, Vagsheer.
- These submarines have capability of operating in a wide range of Naval combat including anti-warship and anti-submarine operations, intelligence gathering and surveillance and naval mine laying.

#### **About Scorpene-Class Submarines**

- The Scorpene-class submarines are one of the most advanced conventional submarines in the world.
- The submarine has superior stealth features, such as low radiated noise levels, advanced acoustic silencing techniques and the ability to attack with precision-guided weapons on board.
- The Indian Navy intends to use the submarines for missions such as intelligence gathering, area surveillance, anti-surface warfare, anti-submarine warfare and minelaying operations.
- It can launch crippling attacks on the surface and underwater enemy targets.
- Moreover, the attack submarines can travel at a maximum submerged speed of approximately 20 knots and have the ability to remain submerged for 21 days.
- These Submarines have a diving depth of more than 350 m.
- The Scorpene class of submarines were designed by French naval shipbuilding firm DCNS in partnership with Spanish shipbuilding firm Navantia.

#### **What submarines does India have now?**

- India has 16 conventional diesel-electric submarines, which are classified as SSKs excluding the INS Vagir and INS Vagsheer
- India also has two nuclear ballistic submarines, classified SSBN, INS Arihant and INS Arighat.
- As of now, India however has just **one operational SSBN in INS Arihant.**

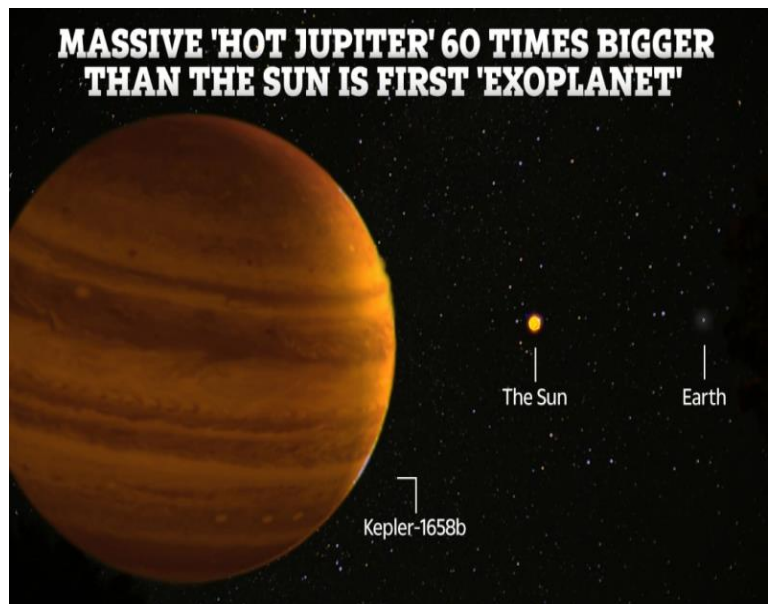




### 5.5 Kepler-1658b

**THE NASA Kepler space telescope's first ever potential planet discovery has officially been confirmed as an 'exoplanet'**(An exoplanet is a planet that is outside of our solar system and Nasa says this newly confirmed one is 60 times larger than the Sun.)

- Kepler-1658b is spiralling closer to an ageing star and is on the verge of death.
- Kepler-1658b is a gas giant (also called Hot Jupiter) exoplanet (any planet beyond our solar system) that orbits the star Kepler-1658.
- Kepler-1658b It is only 0.0544 Astronomical Unit (roughly the distance from Earth to the Sun) away from its star.



#### **Kepler Telescope:**

It is a now retired space telescope which was launched by NASA back in 2009 with the aim of discovering Earth-size planets orbiting other stars. Since its launch, it has discovered thousands of exoplanets.

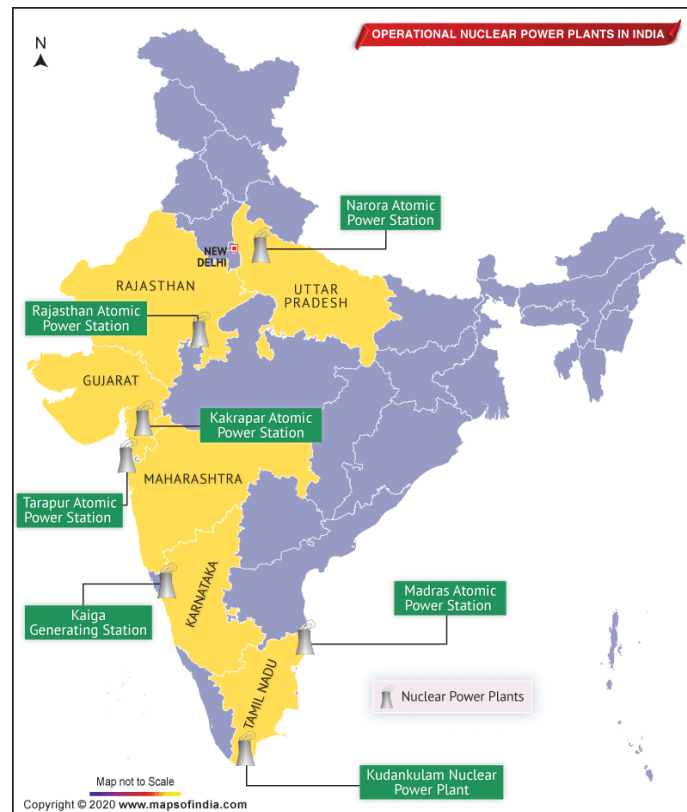
### 5.6 TVS-2M nuclear fuel

- Russia has supplied first batches of TVS-2M nuclear fuel to India for Kudankulam Nuclear Power Plant.
- TVS-2M contains mixed Uranium-Gadolinium oxide with Uranium enrichments, but without Burnable Absorbers Rods (BARs).
- BARs contain neutron-absorbing material that is inserted into guide tubes of a pressurized water reactor.

### Significance of TVS- 2M

- More efficient and more vibration-resistant due to rigidity of a fuel bundle.
- Increased uranium capacity one TVS-2M assembly contains 7.6% more fuel material as compared to earlier fuel.
- Efficiently operated in an 18-months fuel cycle

### Nuclear power plants In India:



### 5.7 BF.7

- Four cases of BF.7 have been detected in India.
- BF.7 variant is a subvariant of BA.5 highly transmissible subvariant of Omicron.
- Presently, there are 10 different variants of SARS-CoV-2 in India and BF.7 is the latest of them.
- It may cause serious illnesses in people with weaker immune systems.
- BF.7 is actually short form. Full name is: BA.5.2.1.7. This is a sub-variant of Omicron's BA.5 variant.
- Omicron's BA.5 variant has the highest number of reported cases worldwide. About 76.2% of the total cases.
- However, the BA.4 and BA.5 sub-variants did not spread much in India. We have the highest number of BA.2.75 cases.
- The corona virus is mutating and mutations can create many variants and sub-variants. This process is called convergent evolution. These sub-variants have been given names like BA.2.75.2, BF.7 and BQ.1.1.

**What is Mutation?**

- Like any other organism, the **Covid-19 is also constantly mutating**, with some changes in its genetic structure happening in **every replication cycle**.
- The **RNA strand of the virus will replicate** and will make mistakes resulting in mutations.
- Most of these mutations are **inconsequential and do not alter the overall nature or behaviour of the virus**.
- These mutations can introduce **important changes, helping the virus to adapt or survive better**.
- **Three kinds of changes** keenly watched are those that
  - Increase the ability of the virus to spread faster.
  - Cause more severe disease in the infected person.
  - Help the virus escape the immune response.
- The **INSACOG was set up for this purpose only with an objective** to sequence the samples from at least 5% of all the infected cases through a network of laboratories.
- Studying genetic changes in the organism is important for understanding the origin, transmission and impact of the virus on patients.

**5.8 Akash Weapon System**

- **AKASH** is a medium range (<25km) Surface to Air Missile System to protect vulnerable areas and points from air attacks.
- Akash Weapon System (AWS) can simultaneously engage Multiple Targets in Group Mode or Autonomous Mode. It has built-in Electronic Counter-Counter Measures (ECCM) features.
- It can destroy aerial targets such as fighter jets, cruise missiles, and air-to-surface missiles, as well as ballistic missiles.
- It is unique in that it can engage numerous targets in group or autonomous mode at the same time

**FEATURES:**

- Range of Operation : 4.5 km to 25 km
- Altitude of Operation : 100 m up to 20 km
- Length : 5870 mm
- Diameter : 350 mm
- Weight : 710 kg

### INDIA'S 'AKASH' TO COUNTER DRAGON FIRE

**Mission** » To track & destroy hostile aircraft, helicopters, drones & sub-sonic cruise missiles

**Surface-to-Air missile (SAM)** system was one of the five core missile systems of the Integrated Guided Missile Development Programme launched by India in 1983. After long delays due to technical glitches, Akash now finally being deployed by IAF & army

**IAF** » Inducting eight squadrons, each with 2 'flights' of 4 launchers  
Cost | ₹6,200 Cr

**Army** » Inducting 2 Akash regiments, with six firing batteries & hundreds of missiles each  
Cost | ₹14,180 Cr



### MISSILE CHARACTERISTICS

- 5.6 metre in length;
- integrated two-stage Ramjet rocket propulsion technology; powered by an air-breathing engine; can carry warhead of 60kg
- 25-km interception range
- Low reaction, all-weather capability
- 96% indigenous
- Can handle multiple aerial threats from several directions simultaneously
- 88% kill probability within a specified kill zone



### 5.9 India to assume chairmanship of Wassenaar Arrangement (WA) On January 1, 2023

#### Wassenaar Arrangement:

- It is a multilateral export control regime (MECR) that works to promote transparency and responsibility in transfers of conventional arms and dual-use goods and technologies through regular exchanges of information among its members.
- WA was established in 1996. It is a voluntary export control regime consisting of 42 members.
- India joined WA in 2017 as its 42nd participating state.
- MECR are voluntary and non-binding agreements. It prevents proliferation of Weapons of Mass Destruction (WMD) which includes nuclear, radiological, chemical, biological or other weapon.

#### Other regimes under MECR includes:

### Export Control Regime Examples

|                                      | Conventional Weapons        | Weapons of Mass Destruction and their delivery systems |   |   |                                    |
|--------------------------------------|-----------------------------|--|---|---|------------------------------------|
|                                      |                             | Missiles   | Nuclear Weapons                         | Chemical Weapons and Biological Weapons |                                    |
| Treaties                             |                             |  | NPT<br>Nuclear Non-proliferation Treaty | BWC<br>Biological Weapons Convention    | CWC<br>Chemical Weapons Convention |
| International Export Control Regimes | WA<br>Wassenaar Arrangement | MTCR<br>Missile Technology Control Regime              | NSG<br>Nuclear Suppliers Group          | AG<br>Australia Group                   |                                    |

#### Nuclear Supplier Group (NSG), 1975:

- Prevents nuclear proliferation by implementing guidelines for nuclear and nuclear-related exports. India is not member of NSG.

**Australia Group, 1985:**

- Ensures that exports do not contribute to development of chemical or biological weapons. 43 members including India and EU.

**Missile Technology Control Regime (MTCR), 1987:**

- Prevent proliferation of missile and unmanned aerial vehicle technology capable of delivering WMD.
- It is not legally-binding treaty.
- 35 members including India.
- China is not member of MTCR.

**5.10 Country's annual rate of HIV infection has declined**

- On eve of World AIDS Day, the National AIDS Control Organization (NACO) has revealed that the country's annual rate of HIV infection has declined by 46% between 2010 and 2021 against a global average of 32%.
- Also, AIDS-related mortalities have declined by 76%. NACO, under the Ministry of Health & Family Welfare (MoH&FW), acts as nodal agency for activities of National AIDS Control Program (NACP).
- #AbNahiChalega campaign to eliminate HIV-related stigma and discrimination is supported by MoH&FW.
- World AIDS Day has been globally observed on 1st December since 1988.
- Theme of World AIDS Day, 2022 is "Equalize".
- Equalize slogan call to take practical actions to address inequalities in HIV (Human Immunodeficiency Viruses) infected and affected populations and help in ending AIDS

**HIV Virus:**

HIV is a virus that weakens a person's immune system by destroying important cells that fight disease and infection.

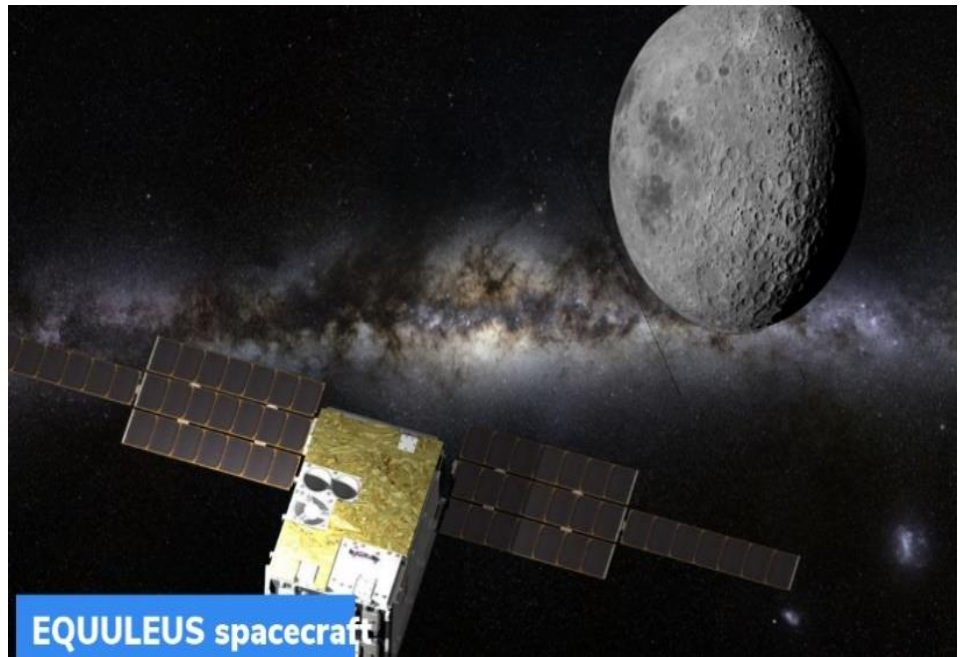
Currently, there is no effective cure for HIV.

If HIV not treated well it can lead to AIDS.



### 5.11 Equuleus Spacecraft (EQUilibriUm Lunar-Earth point 6U):

- Recently, Japan's space agency JAXA successfully used steam to propel Equuleus Spacecraft toward the moon.
- It was the world's first successful orbit control beyond low-earth orbit using a water propellant propulsion system.
- Equuleus (EQUilibriUm Lunar-Earth point 6U) is a deep-space 6U spacecraft launched by NASA's Orion Spacecraft.



- It aims to demonstrate low-energy trajectory control technologies by reaching to the Earth-Moon Lagrange point 2 (EML2).
- Lagrange points are positions in space where objects sent there tend to stay put due to precisely equal gravitational pull of two large bodies

### 5.12 eSanjeevani

- eSanjeevani initiative is the world's largest government owned telemedicine platform.
- eSanjeevani is a part Ayushman Bharat Digital Health Mission
- It comprises two Verticals eSanjeevani Ayushman Bharat-Health and Wellness Centers' (HWCs): bridge rural-urban digital health divide by providing assisted teleconsultations to beneficiaries of Ayushman Bharat Scheme.
- eSanjeevaniOPD: caters to citizens in both rural and urban alike

### 5.13 Sponge bleaching

This year, New Zealand recorded the largest-ever sponge bleaching event off its southern coastline.

**Sponge Bleaching**

**Why in News?** New Zealand recorded the largest-ever sponge bleaching event off its southern coastline caused by marine heatwaves earlier this year.

**Key Highlights**

- Sponges are more resilient to ocean warming and marine heat waves than other organisms.
- But in this event only a single species of cup sponge *Cymbastella lamellata* was affected.
  - The bleaching turned millions of the normally dark brown sponges bright white.
- Instances of tissue loss, decay and death of other sponge species across parts of New Zealand had also been reported.

**About the Sponges**

- One of the most ancient and abundant animals on rocky reefs across the world.
- Sponges contain symbiotic relationships like the corals.
- In New Zealand, they occupy up to 70% of the available seafloor.
  - They are found extensively in mesophotic ecosystems at depths of 30-150m.
- Functions of Sponges
  - Filter large quantities of water.
  - Capture small food particles.
  - Moving carbon from the water column to the seafloor.
    - It provides food for bottom-dwelling invertebrates.
  - Sponges add 3-dimensional complexity to the sea floor.
    - It provides habitat for various species such as crabs, shrimps and starfish.

**Sponge Bleaching**

- Unlike other species *Cymbastella lamellata* hosts dense populations of diatoms which give the sponge its brown color.
- These diatoms live within the sponge tissue, exchanging food for protection.
- When the sponge bleaches, it expels the diatoms, leaving the sponge skeleton exposed.
- This leads to tissue loss or tissue decay which are amplified with increased heat stress.

### 5.14 SpaceTech Innovation Network (Spin)

- Space Research Organisation (ISRO) has signed an MoU with Social Alpha to launch SpIN.
- SpIN will be India's first dedicated platform for innovation, curation, and venture development for the space entrepreneurial ecosystem.
- It has launched its first innovation challenge.
- Selected start-ups and innovators will be able to access both Social Alpha's and ISRO's infrastructure and resources.

**It will primarily focus in three distinct innovation categories:**

- Geospatial Technologies and Downstream Applications,
- Enabling Technologies for Space & Mobility,
- Aerospace Materials, Sensors, and Avionics.





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