



# EXCEL QUEST

VOLUME - 25, JANUARY 2022



Barbados votes for the first time in a general election today

## What is OIC?



Humanitarian Trust Fund for Afghanistan: OIC



Fishing turns into a major diplomatic issue between India, Sri Lanka



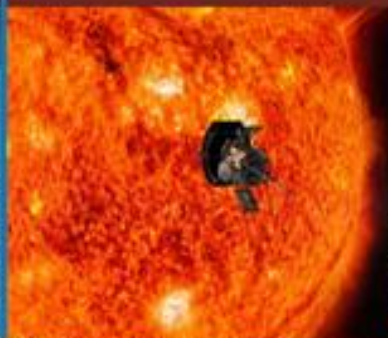
US Imposes New Sanctions on China



What is a 'Sponge city' in Water Management?



Carcass Of Endangered Bryde's Whale found at Odisha Coast



NASA's Parker Solar Probe becomes first spacecraft to 'touch' the sun



India successfully flight-tests indigenously developed ABHYAS off Odisha coast

A Monthly Magazine from

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## Director's Message

Dear Aspirants,

Recently, the Union Cabinet approved the proposal to change the legal age of marriage for women from 18 to 21 years. On 20<sup>th</sup> December 2021, the Prohibition of Child Marriage (Amendment) Bill, 2021, was introduced in the Lok Sabha. It has been sent to a Standing Committee. According to the Bill, a child is defined as “a male or female who has not completed 21 years of age”. A NITI Aayog task force appointed to recommend women's legal age for marriage also said that a woman must be at least 21 years old at the time of first pregnancy. The rationale behind this amendment is to provide equal opportunity to women by giving them more time to complete their education, access employment opportunities, attain psychological maturity before marriage and ensure gender parity.

In the statement of objects and reasons in the Bill, it has been argued by the Government that the “highly detrimental practice of child marriage” continues despite the Prohibition of Child Marriage Act (PCMA), 2006, and there is therefore “an urgent need to tackle this societal issue and bring in reforms”. The statement adds that enactments such as the Indian Christian Marriage Act, 1872, the Parsi Marriage and Divorce Act, 1936, the Muslim Personal Law (Shariat) Application Act, 1937, the Special Marriage Act, 1954, the Hindu Marriage Act, 1955, and the Foreign Marriage Act, 1969, relating to the age of marriage do not provide a uniform age of marriage for men and women. It says that existing laws do not “secure the Constitutional mandate of gender equality in marriageable age among men and women” and that women were put at “a disadvantageous position with regard to education, vocational education, attainment of psychological security and skill sets”. It also says that it is critical that girls become self-reliant by entering the employment sphere and becoming part of the workforce before they get married. Bringing down teenage pregnancies, reducing stillbirths, miscarriages, responsible parenting (or taking better care of the children) are the other imperatives listed in the statement of objects and reasons for rising the age of marriage to 21.

Lawyers and activists who have been working for the cause say that the Bill sets forth the rationale for increasing the age of marriage for girls to 21 years based on the principle of equality (same age for men and women) and the need to increase the age so as to ensure that the “physical, mental and reproductive health” of women is protected but their only criticism is why hasn't Section 3 (1) been amended to declare child marriage void. While delivering a judgement on Rape Law in Supreme Court in 2017, a bench of Justices M.B. Lokur and Deepak Gupta (both are now retired) have pointed out that “Parliament has made child marriage an offence and has provided punishments for contracting a child marriage when it is voidable as per the law”. Marriage itself with a minor is not void under the PCMA. It makes child marriage voidable at the option of any contracting party, who was a ‘child’ at the time of the marriage. With the recent amendment proposing to increase the age for girls to 21 years, both girls and boys now will have time till 23 years to file a marriage annulment petition.

Several grassroot women's organisations had opposed this move and said that "When we think of a legal framework that builds towards women's empowerment, marriage or age of marriage should not be its primary focus. This narrows the scope of change dramatically — making it about the act of marriage and not the disabling circumstances that early marriage is a symptom of," stated the memorandum. They opine that law isn't a fix and also the existing law is just punitive and not preventive. Even 40 years after marriage age was raised from 16 to 18, child marriages account for 23% of all marriages. This reflects the failure on the part of the government to reach its target of providing opportunities for girls in backward and poverty-stricken areas or better access to healthcare. It has also not changed conservative and anti-women attitudes towards women.

The Civil Society activists argue that enacting a statute does not impose a financial burden on the government but creating the infrastructure to provide easy access to education and health care does. They opine that the government has paid only lip service to the cause of women's empowerment by increasing the marriage age. Only law or changing women's age for marriage will not empower the women but educating her, increasing availability of better health care infrastructure, equal opportunities, respect, and change in the mind set towards them will definitely empower women and thereby reduce child marriages. The ingrained belief in rural areas that the girls are only nurturers whereas the boys are the providers should be addressed with schemes providing employment opportunities to educated girls. There must be provision of education, special livelihood training, safety, empowerment programmes and other opportunities for girls that offer viable social and economic options outside of marriage so that their parents are convinced that there are other ways to nurture and empower a girl child apart from marrying her off.

Best wishes.

Yours sincerely,



K. Rajendra Kumar IPS (Retd)

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## 1. NATIONAL

### 1.17 Project Samhati

- The new National Education Policy 2020 lays emphasis on imparting teaching in the mother tongue in primary classes. However, when seen from the context of the diverse language-base of tribal people, the task appears to be quite onerous.
- In this scenario, Odisha's decade-long experiment in multilingual education may come in handy to take up the challenge.
- The most important aspect of Mother-Tongue Based Multi-Lingual Education (MTBMLE) is that it helps save endangered tribal languages.
- The ST and SC Development Department of the Odisha government has started a project called 'Samhati'.
- It intends to address the language issues faced by tribal students in early grades or elementary classes.
- Under this, the department plans to cover approximately 2.5 lakh students in 1,450 primary schools in the State.
- The Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRTI) along with the Academy of Tribal Language and Culture (ATLC), Bhubaneswar are implementing the project.
- Under Samhati, it has been decided that all teachers of primary level would be provided functional knowledge of tribal languages and ways of communicating with tribal students.
- Odisha's adivasi communities are as diverse as 21 spoken languages. Out of the 21 languages, Santhali is the only language which has been included in the eighth schedule of Constitution.
- It is taught in its own olchiki script while the rest of tribal languages have Odia scripts. Only six tribal languages — Santali, Ho, Soura, Munda and Kui — have a written script.
- These students are a multilingual group unlike mono-lingual groups in regular schools.

### 1.18 Smart Policing Index 2021

- According to a nationwide survey conducted by Indian Police Foundation (IPF), police in Bihar and Uttar Pradesh scored the lowest among all States when it came to perception of "sensitivity".
- Earlier, the National Human Rights Commission (NHRC) had asked the Union Ministry of Home Affairs (MHA) and the State Governments to set up Police Complaints Authorities as per the judgment in Prakash Singh vs. Union of India, 2006.
- The SMART Policing idea was envisioned, articulated and introduced by the Indian PM at the Conference of DGPs of State and Central Police Organizations, held at Guwahati, in the year 2014.

- It envisaged systemic changes to transform the Indian Police to be: Strict and Sensitive, Modern and Mobile, Alert and Accountable, Reliable and Responsive, Techno-savvy and Trained (SMART).
- The strategy combined the development of physical infrastructure, technology adoption, a focus on the critical soft skills and attitudes, as well as a deep commitment to the values of professional excellence and service to the people, considered essential to take the Indian Police to the next level.

### **SMART Policing Index**

- The purpose of the IPF survey was to gather information on citizens' perceptions about the impact of the SMART policing initiative.
- Indian Police Foundation (IPF) is a Delhi-based think tank set up by eminent citizens including serving and retired police officers, civil servants, academics and lawyers etc – for each individual state or Union territory.

### **The survey had 10 sets of questionnaires, which included**

- Six indices of “Competence-Based Indicators” dealing with issues such as police sensitivity, accessibility, responsiveness and technology adoption among others;
- Three indices of “Value-Based indicators” dealing with integrity of the police; and One index of “Trust”.
- The SMART scores are set on a scale of 1 to 10 and are indicative of the levels of citizen satisfaction, a score of 10 being the highest level of satisfaction.

### **Findings of SMART Policing Index 2021**

- Despite being attacked for insufficient sensitivity, declining public confidence and growing concerns about the quality of policing, a majority of citizens (a weighted average of 66.93%) believes that the police are doing their job well and strongly support the police.
- Southern states and some in the Northeast fared better on most policing indices compared to states in the north.
- The top five states with the highest score on overall policing are Andhra Pradesh, Telangana, Assam, Kerala and Sikkim.
- From bottom upwards are Bihar, Uttar Pradesh, Chhattisgarh, Jharkhand and Punjab.

### **1.19 Swachh Survekshan Awards, 2021**

- Indore was ranked the cleanest city for the fifth consecutive year by the Union Ministry of Housing and Urban Affairs in its annual cleanliness ranking.
- The Swachh Survekshan Awards, 2021 handed out by President Ram Nath Kovind included the cleanest State honour for Chhattisgarh for the third time, in the category of States with more than 100 urban local bodies.



- Prime Minister Narendra Modi's constituency, Varanasi, won the award for the cleanest "Ganga city".
- Among cities, Surat and Vijayawada secured the second and third place, respectively.
- The Ministry said the survey was carried out in 4,320 cities over 28 days, where feedback from 4.2 crore persons was recorded.
- Of States with over 100 urban local bodies (ULBs), Maharashtra and Madhya Pradesh were ranked second and third respectively.
- Jharkhand was judged the cleanest State with less than 100 ULBs, followed by Haryana and Goa.
- Among cities with population over 1 lakh, Indore, Surat, Vijayawada, Navi Mumbai, New Delhi, Ambikapur, Tirupati, Pune, Noida and Ujjain were the top 10, in that order.
- Of cities with population less than 1 lakh, Maharashtra's Vita was the cleanest, followed by Lonavala and Sasvad.
- The New Delhi Municipal Council's area was ranked the cleanest in the category of cities with 1-3 lakh population.
- Noida was named the cleanest among medium-sized cities, that is with 3 lakh to 10 lakh populations. Among the big cities with population of 10 lakh to 40 lakh, Navi Mumbai was ranked the cleanest.

### **1.20 Personal Data Protection (PDP) Bill, 2019**

- A Joint Parliamentary Committee (JPC) has finalised and adopted the draft report on The Personal Data Protection (PDP) Bill, 2019 by a majority.
- The Bill will be soon tabled in the upcoming Winter Session of Parliament. The JPC has got five extensions to submit a report on the Bill in two years.

#### **PDP Bill**

- It was first brought to the Parliament in 2019 and was referred to the JPC for examination at the time.
- The Bill was drafted after a Supreme Court ruling that declared 'Right to Privacy' a fundamental right in August 2017, Puttaswamy judgment.
- It is commonly referred to as the "Privacy Bill" and intends to protect individual rights by regulating the collection, movement, and processing of data that is personal, or which can identify the individual.
- The Bill is landmark legislation meant to regulate how various companies and organizations use individuals' data inside India.

- The 2019 draft of the Bill proposed the formation of a Data Protection Authority (DPA), which would regulate the use of users' personal data by social media companies and other organizations within the country.

**Report:****Clause 35/Exemption Clause**

- The committee has retained the Clause with minor change.
- It allows the Government to keep any of its agencies outside the purview of the law.
- The Clause in the name of “public order”, ‘sovereignty’, “friendly relations with foreign states” and “security of the state” allows any agency under the Union -Government exemption from all or any provisions of the law.
- The clause is for “certain legitimate purposes” and also there is precedent in the form of the reasonable restrictions imposed upon the liberty of an individual, as guaranteed under Article 19 of the Constitution and the Puttaswamy judgment.

**1.21 UP Anti-Conversion Law**

- The Uttar Pradesh Police have registered a total of 108 cases under a controversial ordinance that criminalises religious conversion by “force, undue influence, coercion, or allurement”.
- The Prohibition of Unlawful Religious Conversion Ordinance, 2020, which was replaced by an Act earlier this year, completes a year.
- This law was passed by the UP government to tackle “unlawful religious conversions” and to address “love jihad”, which is described as an alleged conspiracy by Muslim men to convert Hindu women to Islam by wooing and marrying them.
- It makes religious conversion for marriage a non-bailable offence.
- The onus will be on the defendant to prove that conversion was not for marriage.
- The notice period to the district magistrate for the religious conversion is two months.
- In case of conversion done by a woman for the sole purpose of marriage, the marriage would be declared null and void.
- Violation of the provisions of the law would invite a jail term of not less than one year extendable to five years with a fine of Rs. 15,000.
- If a minor woman or a woman from the Scheduled Caste or Scheduled Tribes communities was converted through the said unlawful means, the jail term would be a minimum of three years and could be extended to 10 years with a fine of Rs. 25,000.
- The ordinance also lays down strict action, including cancellation of registration of social organisations conducting mass conversions.

- The ordinance comes days after the Allahabad high court said in a verdict (Salamat Ansari-Priyanka Kharwar case) that the right to choose a partner or live with a person of choice was part of a citizen's fundamental right to life and liberty.
- The verdict also said earlier court rulings that 'religious conversion for marriage was unacceptable' was not good in law.
- The law has come under sharp criticism from several legal scholars who had contended that the concept of 'love jihad' did not have any constitutional or legal basis.
- They have pointed to Article 21 of the constitution which guarantees individuals the right to marry a person of one's choice.
- Also, under Article 25, freedom of conscience, the practice and conversion of religion of one's choice including not following any religion, are also guaranteed.

### **1.22 Greater Tipraland of Tripura**

- Several tribal outfits in Tripura have joined hands to push their demand for a separate state, Greater Tipraland for indigenous communities in the region.
- Among the political parties that have come together for the cause are TIPRA Motha (Tipraha Indigenous Progressive Regional Alliance) and IPFT (Indigenous People's Front of Tripura).
- The parties are demanding a separate state of 'Greater Tipraland' for the indigenous communities of the north-eastern state.
- They want the Centre to carve out the separate state under Article 2 and 3 of the Constitution.
- Among the 19 notified Scheduled Tribes in Tripura, Tripuris (aka Tipra and Tiprasas) are the largest.
- According to the 2011 census, there are at least 5.92 lakh Tripuris in the state, followed by Bru or Reang (1.88 lakh) and Jamatias (83,000).
- The churn in the state's politics with the rise of TIPRA Motha and the Assembly polls due in early 2023 are the two major reasons behind the development.

### **Historical Background**

- Tripura was a kingdom ruled by the Manikya dynasty from the late 13th century until the signing of the Instrument of Accession with the Indian government in 1949.
- The demand stems from the anxiety of the indigenous communities in connection with the change in the demographics of the state, which has reduced them to a minority.
- It happened due to the displacement of Bengalis from the erstwhile East Pakistan between 1947 and 1971.
- From 63.77% in 1881, the population of the tribals in Tripura was down to 31.80% by 2011.

- In the intervening decades, ethnic conflict and insurgency gripped the state, which shares a nearly 860-km long boundary with Bangladesh.
- The joint forum has also pointed out that the indigenous people have not only been reduced to a minority, but have also been dislodged from land reserved for them by the penultimate king of the Manikya dynasty Bir Bikram Kishore Debbarman.

#### **Initiatives to Address the Issue**

- The Tripura Tribal Areas Autonomous District Council (TTADC) was formed under the sixth schedule of the Constitution in 1985 to ensure development and secure the rights and cultural heritage of the tribal communities.
- ‘Greater Tipraland’ envisages a situation in which the entire TTADC area will be a separate state. It also proposes dedicated bodies to secure the rights of the Tripuris and other aboriginal communities living outside Tripura.
- The TTADC, which has legislative and executive powers, covers nearly two-third of the state’s geographical area.
- The council comprises 30 members of which 28 are elected while two are nominated by the Governor.
- Also, out of the 60 Assembly seats in the state, 20 are reserved for Scheduled Tribes.

#### **1.23 Durga Puja Enters UNESCO’s ‘Intangible Cultural Heritage’ List**

- The Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage has inscribed ‘Durga Puja in Kolkata’ on the Representative List of the Intangible Cultural Heritage of Humanity.
- This inscription will offer encouragement to the local communities that celebrate Durga Puja, including all the traditional craftspeople, designers, artists, and organizers of large-scale cultural events, as well as tourists and visitors who partake in the inclusive festivity that is Durga Puja.
- The 16th Committee of UNESCO for safeguarding of the Intangible Cultural Heritage (ICH) in its meeting held in Paris has inscribed DURGA PUJA in KOLKATA on the representative list of Intangible Cultural Heritage of Humanity.
- This is the 1st festival in Asia to achieve recognition as UNESCO ICH of Humanity.
- UNESCO’s list of intangible culture is an annual list which focuses on those forms of performing art which are of outstanding value but are vulnerable due to lack of support.
- Convention for the Safeguarding of the Intangible Cultural Heritage was adopted in 2003. India ratified it in 2007.
- In total, 14 Intangible Cultural Heritage elements from India have now been inscribed on UNESCO’s Representative List.

### **1.24 Legal Age Of Marriage For Women**

- The Union Cabinet on December 15 took the decision to raise the legal age of marriage for women from 18 to 21 years. The legal age of marriage for men is 21 years.
- With this decision, the government will be bringing the age of marriage for both men and women at par.
- The law prescribes a minimum age of marriage to essentially outlaw child marriages and prevent the abuse of minors.
- Personal laws of various religions that deal with marriage have their own standards, often reflecting custom.
- For Hindus, The Hindu Marriage Act, 1955 sets 18 years as the minimum age for the bride and 21 years as the minimum age for the groom. In Islam, the marriage of a minor who has attained puberty is considered valid.
- The Special Marriage Act, 1954 and the Prohibition of Child Marriage Act, 2006 also prescribe 18 and 21 years as the minimum age of consent for marriage for women and men, respectively. For the new age of marriage to be implemented, these laws are expected to be amended.
- The Union Cabinet's decision to raise the legal age of marriage for women in India is based on the recommendation of a panel led by Jaya Jaitly.
- In June 2020, the Ministry for Women and Child Development set up a task force to look into the correlation between the age of marriage with issues of women's nutrition, prevalence of anemia, IMR, MMR and other social indices.
- The committee, headed by former Samata Party president Jaya Jaitly, also had on board NITI Aayog member (Health) Dr V K Paul and secretaries of several ministries
- The committee has recommended the age of marriage be increased to 21 years.
- The committee also asked the government to look into increasing access to schools and colleges for girls, including their transportation to these institutes from far-flung areas.
- Skill and business training has also been recommended, as has sex education in schools.
- The committee said these deliveries must come first, as, unless they are implemented and women are empowered, the law will not be as effective.
- The committee has further recommended that an awareness campaign be undertaken on a massive scale on the increase in age of marriage, and to encourage social acceptance of the new legislation, which they have said would be far more effective than coercive measures.

**1.25 SEBI Bans Derivative Trade In Agriculture Commodities**

- The Securities and Exchange Board of India (SEBI) has banned the derivative trade of seven agricultural commodities on the future's platform of National Commodities and Derivatives Exchange (NCDEX) for a year.
- The regulator has banned derivative contracts trade in chana, wheat, paddy (non-basmati), soyabean and its derivatives, mustard seed and its derivatives, crude palm oil and moong for a year with immediate effect.
- The commodity derivatives market has been prone to such sudden suspensions of trading in agriculture items ever since it was introduced under the erstwhile Forward Markets Commission (FMC).

**SEBI:**

- It is a statutory body established on 12th April, 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992.
- The basic functions of the SEBI is to protect the interests of investors in securities and to promote and regulate the securities market.

**Reasons for Ban:****To cool off Food Inflation:**

- India's retail inflation rose to a three-month high of 4.91 % in November from 4.48 % in the previous month primarily because of a rise in food inflation to 1.87 % from 0.85 % over this period.

**Double Digits WPI:**

- Wholesale Price Index-based inflation has remained in double digits for eight consecutive months beginning in April, mainly because of surging prices of food items. In November, the wholesale price-based inflation surged to a record high of 14.23 % amid hardening of prices of mineral oils, basic metals, crude petroleum and natural gas.

**To insulate future Price Shock:**

- In view of Rabi Output that might be affected morbidly because of fertiliser shortage faced in many parts of the country.
- By banning future's trade, the government is trying to insulate any price shock the market might feel in the days to come in case the production is not up to par.

**1.26 The Narcotic Drugs And Psychotropic Substances (Amendment) Bill, 2021**

- The Narcotic Drugs and Psychotropic Substances (Amendment) Bill, 2021 was recently passed in Parliament.
- It seeks to replace an ordinance promulgated on September 30 this year.



**Objective of the Bill**

- The bill was introduced by the government to rectify an error that made provisions in Section 27 of the Act — providing for punishment of those financing illicit trafficking — inoperable.
- This happened in 2014, when the Act was amended in 2014 to ease access of narcotic drugs for medical necessities, but the penal provision was not amended accordingly.
- In June 2021, the Tripura High Court found the oversight in the law and directed the Union Home Ministry to amend the provisions of Section 27.
- The drafting error was highlighted when an accused moved a special court in Tripura contending that he could not be charged for the offence as Section 27 A is referred to a blank list. The Tripura High Court subsequently asked the Centre to amend the law.
- The anomaly crept in when the Narcotic Drugs and Psychotropic Substances (NDPS) Act was amended in 2014 to allow better medical access to narcotic drugs, removing state barriers in transporting and licensing of “essential narcotic drugs”.
- Prior to the 2014 amendment, clause (viii a) of Section 2 of the Act, contained sub-clauses (i) to (v), wherein the term ‘illicit traffic’ had been defined.
- This clause was re-lettered as clause (viii b) by the Narcotic Drugs and Psychotropic Substances (Amendment) Act, 2014, as a new clause (viii a) in section 2 defining ‘essential narcotic drugs’ was inserted. However, inadvertently consequential change was not carried out in section 27A of the NDPS Act.

**1.27 Open Acreage Licensing Policy**

- India has offered eight blocks of oil and gas in the seventh bid round of Open Acreage Licensing Policy (OALP).
- The objective is to bring more area under exploration, leading to increase in domestic production and reduction of imports.
- OALP Launched under the Hydrocarbon Exploration and Licensing Policy (HELP) in 2017.
- Under OALP, companies are allowed to carve out areas they want to explore oil and gas in.
- Companies can put in an expression of interest (EOI) for any area throughout the year but such interests are accumulated thrice in a year.
- The areas sought are then offered for bidding. It provides uniform licences for exploration and production of all forms of hydrocarbons, enabling contractors to explore conventional as well as unconventional oil and gas resources.
- Fields are offered under a revenue-sharing model and throw up marketing and pricing freedom for crude oil and natural gas produced.

**1.28 Jammu And Kashmir Delimitation Commission**

- The Jammu and Kashmir Delimitation Commission has proposed to increase six seats for the Jammu division and one for the Kashmir division, besides reserving 16 seats for the Scheduled Castes (SC) and the Scheduled Tribes in the Union Territory.
- The Kashmir division currently has 46 seats and Jammu 37. The commission is headed by Justice Ranjana Prakash Desai (retd.).
- The commission has not specified the districts where the SC and ST seats would be reserved.
- It said that the 2011 census was the basis for carving out the new seats. According to the census, the population of the Kashmir division was 68.8 lakh and Jammu 53.5 lakh.
- The draft proposal added that nine seats would be reserved for the Scheduled Tribes and seven for the Scheduled Castes. Jammu and Kashmir will now have a 90-member Legislative Assembly, up from the 87 prior to the Centre's decision to end the special constitutional position of the erstwhile State.
- This has triggered sharp reactions from the regional parties. There is already a Supreme Court ruling granting a status quo regarding delimitation, if the commission prepares the draft based on 2011 census. It will be unconstitutional.

**1.29 Labour Codes**

- India is likely to implement four labour codes (on wages, social security, occupational safety and industrial relations) by the next fiscal year beginning 2022.
- Under these new codes, a number of aspects related to employment and work culture, in general, might change – including the take-home salary of employees, working hours, and the number of weekdays.
- Trade unions, however, have planned to intensify their agitation this week against the codes in the wake of the government's decision to repeal the three farm laws.

**Demands by trade unions**

- The two codes we accepted — on wages and social security — be implemented immediately and the two to which we had objections — industrial relations and occupational safety — be reviewed.

**About the labour codes**

- The new set of regulations consolidates 44 labour laws under 4 categories of Codes namely, Wage Code; Social Security Code; Occupational Safety, Health & Working Conditions Code; and the Industrial Relations Code.
- The Parliament has already passed all the four Codes and it has also received the President's assent.

**The 4 codes are**

- The Code on Wages, 2019, applying to all the employees in organized as well as unorganized sector, aims to regulate wage and bonus payments in all employments and aims at providing equal remuneration to employees performing work of a similar nature in every industry, trade, business, or manufacture.
- The Code on Occupational Safety, Health and Working Conditions, 2020 seeks to regulate the health and safety conditions of workers in establishments with 10 or more workers, and in all mines and docks.
- The Code on Social Security, 2020 consolidates nine laws related to social security and maternity benefits.
- The Code on Industrial Relations, 2020 seeks to consolidate three labour laws namely, The Industrial Disputes Act, 1947: The Trade Unions Act, 1926 and The Industrial Employment (Standing Orders) Act, 1946. The Code aims to improve the business environment in the country largely by reducing the labour compliance burden of industries.

**Issues with these codes**

- The work hours provisions for regular workers do not provide flexibility to fix work hours beyond eight hours a day.
- The codes have also missed laying down uniform provisions for part-time employees. There are also provisions that impact employee wages.
- The labour codes also chalk out fines on businesses for non-compliance of provisions, second offences and officer-in-default.
- In the current pandemic situation, a majority of small businesses are in no position to adopt and implement the labour code changes.

**1.30 Karnataka Right To Freedom Of Religion Bill, 2021**

- The Karnataka legislative Assembly passed The Karnataka Right to Freedom of Religion Bill, 2021, commonly referred to as the anti-conversion Bill, amid Opposition protests. The Bill will now go to the Karnataka Legislative Council.
- It prohibits conversion from one religion to another by misrepresentation, force, fraud, allurement or marriage.
- It, however, provides an exemption in the case of a person who “reconverts to his immediate previous religion” as “the same shall not be deemed to be a conversion under this Act”.
- Complaints regarding conversions can be filed by family members or any other person who is related to the individual who is getting converted.

- A jail term of three to five years and a fine of Rs 25,000 has been proposed for those violating the law in the case of people from general categories, and a jail term of three to 10 years and a fine of Rs 50,000 has been mooted for those converting minors, women or persons from SC/ST communities.
- The Bill also envisages payment of a compensation of Rs 5 lakh (on court orders) to victims of conversion by the persons attempting the conversion, and double punishment for repeat offences.

### **1.31 PLI Scheme For Textiles**

- The Ministry of Textiles has said that it will accept applications from January 1 for the Production Linked Scheme for Textiles announced in September this year.
- The Government had launched the Production-Linked Incentive (PLI) scheme for the textiles sector worth Rs 10,683 crore.
- This is part of a larger PLI scheme for 13 sectors, with a total budgetary outlay of 1.97 lakh crore.
- The PLI scheme for textiles aims to promote the production of high value Man-Made Fibre (MMF) fabrics, garments and technical textiles.
- Any person or company willing to invest a minimum of Rs 300 crore in plant, machinery, equipment and civil works (excluding land and administrative building cost) to produce products of MMF fabrics, garments and products of technical textiles will be eligible to participate in the first part of the scheme.
- Investors willing to spend a minimum of Rs 100 crore under the same conditions shall be eligible to apply in the second part of the scheme.
- Under PLI, the Centre will subsidise eligible manufacturers by paying incentives on incremental production.
- Companies investing over Rs 300 crore in plant, machinery, equipment and civil works to produce the identified products will get an incentive of 15 percent of their turnover, which needs to be Rs 600 crore in the third year.
- The companies investing between Rs 100 crore and Rs 300 crore will also be eligible to receive duty refunds and incentives (lower than 15 percent of their turnover).
- The government expects to achieve “fresh investment of over Rs 19,000 crore and a cumulative turnover of more than Rs 3 lakh crore”.
- The PLI scheme will provide an immense boost to domestic manufacturing, and prepare the industry for making a big impact in global markets in sync with the spirit of Atmanirbhar Bharat.
- It will also help attract more investment into this sector.

### 1.32 **PESA Act**

- Hundreds of kendu leaf pluckers, binders and workers recently staged a demonstration in Sambalpur, Odisha demanding the abolition of GST on kendu leaves.
- A GST of 18 per cent is imposed on kendu leaves which is against the Forest Rights Act-2006 and the Panchayats (Extension to the Scheduled Areas) Act, 1996 (PESA) to celebrate 25th year of PESA Act.
- Besides, the government has imposed a GST of 28 per cent on bidi which is a finished product made of kendu leaf.
- This double taxation has hit the profits of kendu leaf organisation and affected the livelihood of around 12 lakh workers.
- While the profits have reduced drastically, they are now deprived of many social security benefits too.

#### **About Kendu Leaves**

- Kendu leaf is called the green gold of Odisha. It is a nationalised product like bamboo and sal seed. It is one of the most important non-wood forest products in Odisha.
- The leaves are used to wrap bidis, a popular smoke among the locals.
- The Uniqueness of Odisha's Tendu (kendu) leaf is in processed form whereas the rest of the states in India produce in Phal.
- Traditional medical practitioners use these tiny fruits of Kendu to treat malaria, diarrhoea and dysentery.
- Kendu leaves are the major source for tribal villages, since it is the most prominent Minor Forest Produce of the state.
- Odisha is the third-largest producer of kendu leaf, after Madhya Pradesh and Chhattisgarh.

#### **Panchayats (Extension to Scheduled Areas) Act, 1996**

- It was enacted by Parliament in 1996 and came into force on 24th December 1996.
- The PESA is considered to be the backbone of tribal legislation in India.
- PESA recognises the traditional system of the decision-making process and stands for the peoples' self-governance.
- To promote local self-governance in rural India, the 73rd constitutional amendment was made in 1992. Through this amendment, a three-tier Panchayati Raj Institution was made into a law.
- However, its application to the scheduled and tribal areas under Article 243(M) was restricted.
- After the Bhuria Committee recommendations in 1995, Panchayat Extension to Scheduled Areas (PESA) Act 1996 came into existence for ensuring tribal self-rule for people living in scheduled areas of India.

- The PESA conferred the absolute powers to Gram Sabha, whereas state legislature has given an advisory role to ensure the proper functioning of Panchayats and Gram Sabhas.
- The power delegated to Gram Sabha cannot be curtailed by a higher level, and there shall be independence throughout.



## 2. INTERNATIONAL RELATIONS

### 2.1 Barbados: World's Newest Republic

- Recently, Barbados has officially removed Queen Elizabeth II as its head of state and become the world's newest republic nearly 400 years after the country became a British colony.
- The Caribbean island nation, 55 years after its independence, got rid of the remnants of colonial rule by separating from Britain.
- Barbados, however, will continue to be one of the 54 Commonwealth nations.

#### Key Points

##### About Barbados

- **Location:** It is a small island country in the south-eastern Caribbean Sea. Neighbours: Its neighbours include Saint Lucia, to the north, Saint Vincent and the Grenadines, to the west, and Trinidad and Tobago to the south.
- **Capital:** Bridgetown
- **Independence:** On November 30, 1966, Barbados gained its independence.
- **Leadership**
  - Dame Sandra Prunella Mason is the current President of Barbados.
  - Mia Amor Mottley is the current Prime Minister of Barbados.
- **Part of CARICOM:** Barbados is part of Caribbean Community (CARICOM) which was formed in 1973.

##### History of Barbados

- Barbados first became an English colony in 1625. It was a part of the British Empire for over 400 years, a link in the lines of trade, commerce and oppression that English mercantilism and colonialism fostered for centuries.
- Slaves, indentured labour, a lack of democracy — the Caribbean was home to some of the most institutionalised and invisibilised horrors in history.

##### India and Barbados Relations

- **Shared Platforms:** India and Barbados enjoy close and cordial relations and interact actively in the United Nations (UN), Commonwealth and Non-Aligned Movement (NAM) and other international fora.
  - Barbados is also a signatory to International Solar Alliance and has ratified it in January, 2021
- **Air Services Agreement:** India and Barbados have signed the Air Services Agreement in 2015, for facilitation of travel arrangements for the citizens and the possibility of direct air connectivity and chartered flight operations between the two countries.

- The first ever Foreign Office Consultations (FOC) between India and Barbados was held in Bridgetown, Barbados in 2015.

- **UNSC Reform**

Barbados supported the G-4 resolution on expanding the UN Security Council in 2007.

- The country also voted for India's candidature for Non-Permanent seat on the UN Security Council in 2011–12, and supports India's candidature for a permanent seat on the Security Council.

### **Bilateral Trade**

- Export (USD 12.76 million 2019-20): Indian exports include vehicles, pharmaceuticals, textiles, iron & steel, organic chemicals, etc.
- Import (USD 1.48 million 2019-20): Indian imports include electrical machinery, optical photography, cinematographic equipment.

### **Sports and Culture**

- Cricket being a great connection in India, Barbadian cricketers of yore and modern times are household names among Indian sport lovers.
- Many Barbadian cricketers are members of Indian Premier League teams.

### **Indian Community**

- Approximately 2500 people of Indian origin have settled in Barbados and most of them have since acquired local nationality.

### **Commonwealth of Nations**

- It is an international intergovernmental organization of countries that were mostly former territories of the British Empire and dependencies.
- It was established by the London Declaration in 1949.
- Queen Elizabeth II is the head of the Commonwealth.
- The current membership includes 54 Countries. The membership is based on free and equal voluntary co-operation.
  - It is home to 2.5 billion people, and includes both advanced economies and developing countries.
- The last country to join the Commonwealth was Rwanda in 2009.
- The Commonwealth Heads of Government Meeting is a biennial summit meeting of the heads of government from all Commonwealth nations.



## 2.2 Humanitarian Trust Fund for Afghanistan: OIC

**For Prelims:** Organization of Islamic Cooperation (OIC), humanitarian trust fund, Trust Fund by UN, Islamic Development Bank, United Nations (UN), Islamic Development Bank.

**For Mains:** The role of Organization of Islamic Cooperation (OIC) in Afghanistan, India relationship with OIC.

### **Humanitarian Trust Fund for Afghanistan: OIC**

A meeting of foreign ministers from the Organisation of Islamic Cooperation (OIC) agreed to establish a humanitarian trust fund to address the growing economic crisis in Afghanistan which has left millions facing hunger over the winter.

- The meeting is the biggest major conference on Afghanistan since the fall of the US- backed government.
- In July 2021, India rejected the OICs proposal to assist a dialogue between India and Pakistan.

### **Key Points**

#### **Humanitarian Trust Fund**

- The fund will be set up under the Islamic Development Bank to channel aid to Afghanistan in coordination with other groups.
- Allowing Afghanistan access to its financial resources would be pivotal to preventing economic collapse and said realistic pathways to unfreezing billions of dollars in frozen central bank reserves should be explored.
- The meeting also called on the international community to provide urgent and sustained humanitarian aid to Afghanistan as well as to the main countries housing Afghan refugees.

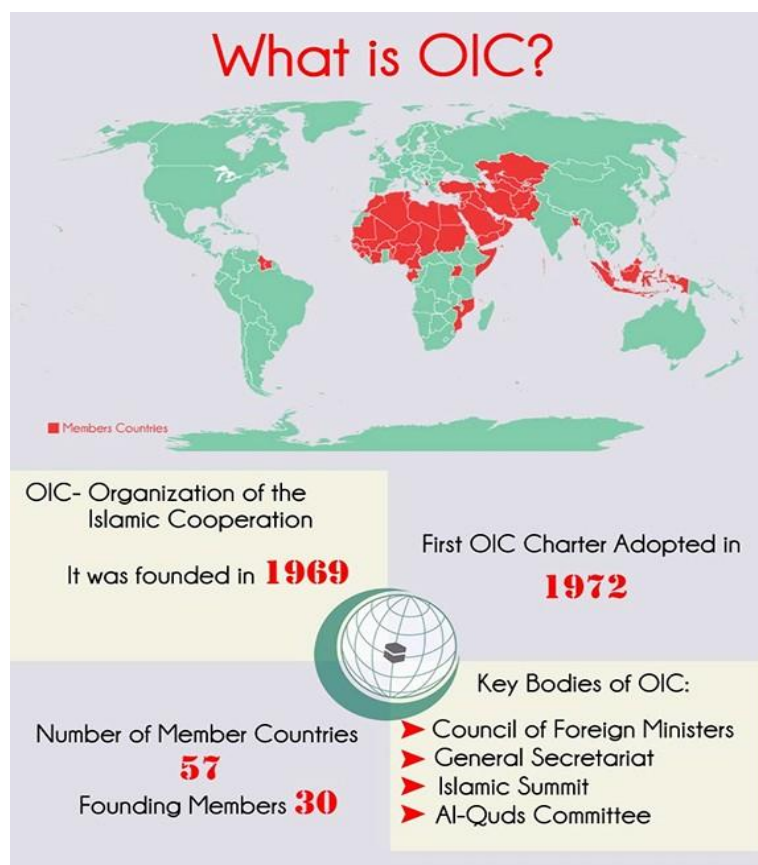
### Trust Fund by United Nation

- The United Nations (UN) has also set up a special trust fund to provide urgently- needed cash directly to Afghans through a system that taps into donor funds frozen since the Taliban takeover in August
- It was set up with the aim of injecting liquidity into Afghan households in a bid to permit them to survive the upcoming winter and remain in their homeland.
- Germany is a first contributor to the fund. It had pledged 50 million euros (USD58 million) for it.

### Organisation of Islamic Cooperation

#### About:

- The OIC is the second largest intergovernmental organisation after the United Nations with a membership of 57 States.
- It is the collective voice of the Muslim world. It endeavors to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world.
- It was established upon a decision of the historical summit which took place in Rabat, Kingdom of Morocco on the 25th of September 1969.
- Headquarters: Jeddah, Saudi Arabia.



**India's relationship with OIC as an Organisation**

- At the 45th session of the Foreign Ministers' Summit in 2018, Bangladesh, the host, suggested that India, where more than 10% of the world's Muslims live, should be given Observer status, but Pakistan opposed the proposal.
- In 2019, India made its maiden appearance at the OIC Foreign Ministers' meeting, as a "guest of honour".
- This first-time invitation was seen as a diplomatic victory for India, especially at a time of heightened tensions with Pakistan following the Pulwama attack.

**India's relationship with OIC member countries**

- India is not a member of the OIC. However, India was invited as a guest of honour at the 46th Session of the Council of Foreign Minister in 2019.
- Individually, India has good relations with almost all member nations.
- Ties with the UAE and Saudi Arabia, especially, have improved significantly in recent years.
- The Crown Prince of Abu Dhabi (UAE) was a special chief guest at the 68th Republic Day celebrations in 2017.

**Islamic Development Bank****About:**

- The Islamic Development Bank is an international financial institution established in pursuance of the Declaration of Intent issued by the Conference of Finance Ministers of Muslim Countries held in Jeddah in December 1973, and the Bank was formally opened in October 1975.
- The purpose of the Bank is to foster the economic development and social progress of member countries and Muslim communities individually as well as jointly in accordance with the principles of Shari'ah i.e., Islamic Law.
- The Bank's principal office is in Jeddah in the Kingdom of Saudi Arabia.

**Functions**

- The functions of the Bank are to participate in equity capital and grant loans for productive projects and enterprises besides providing financial assistance to member countries in other forms for economic and social development.

**Membership**

- The present membership of the Bank consists of 56 countries. The basic condition for membership is that the prospective member country should be a member of the OIC, pay its contribution to the Capital of the Bank and be willing to accept such terms and conditions as may be decided upon by the IDB Board of Governors.

### 2.3 Fisherman Issue with Sri Lanka

**For Prelims:** Location of Katchatheevu Island and Palk Bay Strait.

**For Mains:** Impact of Fishermen issue on India Sri Lanka Relations and what India is doing in this direction

- Recently, as many as 43 fishermen from Tamil Nadu were arrested and six boats seized by Sri Lankan Naval personnel.
  - A total of 284 Indian fishermen were arrested by Sri Lanka in 2019 (210) and 2020 (74).
  - Earlier in 2020, the Fourth Meeting of the India-Sri Lanka Joint Working Group (JWG) on Fisheries was held through virtual mode.



#### Key Points

#### Background

- Both Indian and Sri Lankan fishermen have been fishing into the Palk Bay area for centuries.
  - Palk Bay is a semi-enclosed shallow water body between the southeast coast of India and Sri Lanka.
- Problem emerged only after a maritime agreement was signed by India and Sri Lanka in 1974.
- In fact, initially the 1974 border agreement did not affect fishing on either side of the border.
- In 1976, through an exchange of letters, both India and Sri Lanka agreed to stop Fishing in each other's waters.
- In 1974 and 1976 treaties were signed between the two countries to demarcate the International Maritime Boundary Line (IMBL).
- The treaties also ended up making the Palk Strait connecting India and Sri Lanka a 'two-nation pond', under the relevant United Nations Convention on the Law of the Sea (UNCLOS) rules to the exclusion of all third nations.



- Simply put, the bilateral arrangement bans international fishing and shipping.
- However, the agreement could not stop the fishermen from fishing in these waters, as fishermen know no boundary.
- Despite the signing of maritime boundary agreements, fishermen communities of both the countries continued their fishing in the Palk Bay area peacefully until the Eelam war broke out in 1983.
- Nonetheless, after the end of War in 2009, the Sri Lankan fishermen have been raising their objection to Indian fishermen fishing in their waters.
- Later, India and Sri Lanka agreed to set up a Joint Working Group (JWG) on Fisheries in 2016 between India and Sri Lanka as the mechanism to help find a permanent solution to the fishermen issue.

### **Katchatheevu Island Issue**

- The small islet of Katchatheevu, hitherto used by the fishermen for sorting their catch and drying their nets, fell on the other side of the IMBL
- Fishermen often risk their lives and cross the IMBL rather than return empty-handed, but the Sri Lankan Navy is on alert, and have either arrested or destroyed fishing nets and vessels of those who have crossed the line.

### **Reasons for the continuation**

- The main problem with Indian fishermen is that a large number of them are dependent on fishing in Sri Lankan waters, which is prohibited by the 1976 Maritime Boundary Agreement.
- Also, a large number of Indian fishermen are dependent on trawling which is banned in Sri Lanka.



**Related Initiatives Taken**

- The IMBL is imaginary, but it was geo-tagged and is visible to the fishermen, due to Global Positioning System (GPS) sets.

**Deep Sea Fishing Scheme**

- Promoted as an alternative to bottom trawling by Tamil Nadu's fishermen off the Palk Bay, the scheme envisages the provision of 2,000 deep sea fishing boats in place of trawlers by 2019-20, which will be the third and final year of implementation of the scheme.
- It aims to put an end to disputes arising between the two countries.
- It has been taken up under the 'Blue Revolution' scheme.

**Way Forward**

- The fishing equipment that is prohibited in Sri Lanka must be banned by India in the Palk Bay.
  - Fishing practises that do irreparable damage to marine ecology must be given up.
- The damage to the Indian fishermen could be ameliorated if the announcement is followed by two steps.
  - The trawlers can be used in the Odisha coast where waters are very deep Trawlers could, with certain modifications, be used as smaller fishing vessels that cater to the mothership.
- India can transform the Palk Bay from a contested territory to a common heritage.
  - The first step is to recognize that there are various stakeholders—two Union and provincial governments, the Navies and Coast Guards, fisheries departments and above all, fishing communities of the two countries.
  - The next step should be to form a Palk Bay Authority (PBA) consisting of marine ecologists, fisheries experts, strategic specialists and government representatives.
  - The PBA could determine the ideal sustainable catch, type of fishing equipment that can be used, and the number of fishing dates for Sri Lankan and Indian fishermen.
  - The focus should be on enrichment of marine resources and improvement of the livelihoods of fishermen.

**2.4 US Imposes New Sanctions on China**

**For Prelims:** Uyghurs Muslims, Declaration for Uyghur Muslims, location of Xinjiang.

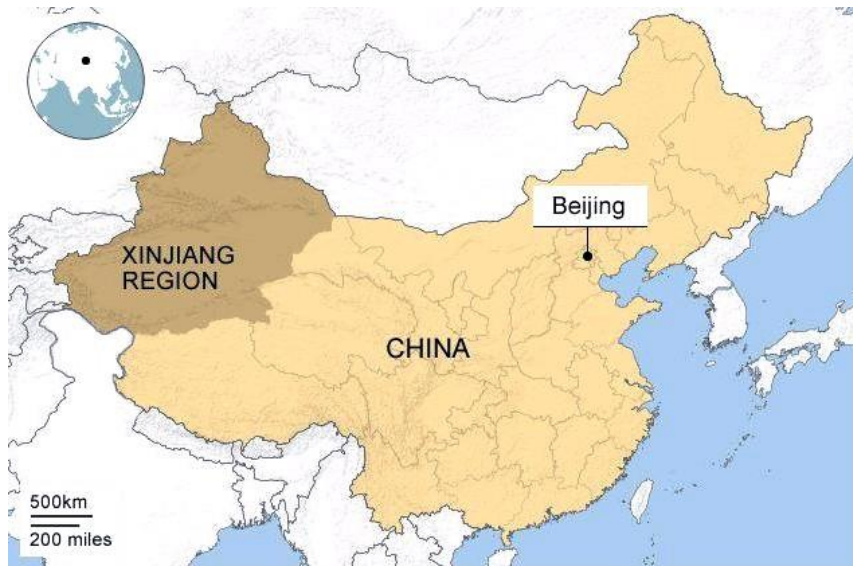
**For Mains:** Sanctions on several Chinese biotech and surveillance companies, Human right violations in world, Issues related to Uighur Muslims.

**Why in News**

The U.S is imposing new sanctions on several Chinese biotech and surveillance companies and

government entities over human rights abuses of Uyghur Muslims in the Xinjiang region of China.

- Xinjiang is technically an autonomous region within China — its largest region, rich in minerals, and sharing borders with countries like India, Russia, Mongolia and Afghanistan.



## Key Points

### US Sanctions

- The US Commerce Department is targeting China's Academy of Military Medical Sciences and its 11 research institutes that focus on using biotechnology to support the Chinese military.
  - The US Treasury Department is also set to issue penalties against several Chinese entities.
  - The move will bar American companies from selling components to the entities without a license.
- The US administration supported bipartisan legislation that bans imports into the U.S. from Xinjiang unless companies can demonstrate the goods were not produced by forced labour.
- Earlier, in 2020 the United States House of Representatives approved a legislation calling for sanctions on Chinese officials responsible for oppression of Uyghur Muslims.
  - The bill calls for sanctions against those responsible for repression of Uyghurs and other Muslim groups in China's Xinjiang province.
  - The bill also calls on USA companies or individuals operating in the Xinjiang region to take steps to ensure their products do not include parts using forced labor of Uyghurs.

**Declaration for Uighur Muslims**

- Recently, 43 countries have signed a declaration, calling on China to ensure full respect for the rule of law for the Muslim Uighur community in Xinjiang.
- The declaration was signed by the US and other countries accusing China of human rights violations and ethnic cleansing against the Uighur Muslims.
  - Similar declarations in 2019 and 2020 condemned China for its policies in Xinjiang, where United States has accused Beijing of carrying out genocide.
- It also called for access to Xinjiang for independent observers, including the UN High Commissioner for Human Rights.
- It noted the existence of a large network of ‘political re-education’ camps in Xinjiang Uighur Autonomous Region, where over a million people have been arbitrarily detained.
  - However, China claims its camps to be ‘educational centres’ where the Uighurs are being cured of “extremist thoughts” and radicalisation, and learning vocational skills.

**China’s Stand**

- China claims that Uighur groups want to establish an independent state and, because of the Uyghurs’ cultural ties to their neighbours, leaders fear that elements in places like Pakistan may back a separatist movement in Xinjiang.
- China has denied any abuses and says the steps it has taken are necessary to combat terrorism and a separatist movement.

**India’s Stand:**

- The Indian government has maintained near silence on the Uighur crisis.

**Uyghurs Muslims****About:**

- The Uyghurs are a predominantly Muslim minority Turkic ethnic group, whose origins can be traced to Central and East Asia.
  - The Uyghurs speak their own language, similar to Turkish, and see themselves as culturally and ethnically close to Central Asian nations.
- The Uyghurs are considered to be one of the 55 officially recognized ethnic minority communities in China.
  - However, China recognises the community only as a regional minority and rejects that they are an indigenous group.
- Currently, the largest population of the Uighur ethnic community lives in the Xinjiang region of China.

- A significant population of Uyghurs also lives in the neighbouring Central Asian countries such as Uzbekistan, Kyrgyzstan and Kazakhstan.
- Xinjiang is technically an autonomous region within China — its largest region, rich in minerals, and sharing borders with eight countries, including India, Pakistan, Russia and Afghanistan.

### **Persecution of Uyghurs**

- **Intrusion of Majority Han Chinese:** Over the past few decades, as economic prosperity has come to Xinjiang, it has brought with it in large numbers the majority Han Chinese.
  - They have cornered the better jobs, and left the Uyghurs feeling their livelihoods and identity were under threat.
  - This led to sporadic violence, in 2009 culminating in a riot that killed 200 people, mostly Han Chinese, in the region's capital Urumqi.
- **Suppression by State:** Uighur Muslims for decades have suffered from abuses including persecution, forced detention, intense scrutiny, surveillance and even slavery.
- **Systematic Effort to Suppress Uyghurs:** U.S. intelligence has established that China has set up a high tech surveillance system across Xinjiang that uses biometric facial recognition and has collected DNA samples from all residents, ages 12 to 65, in Xinjiang as part of a systematic effort to suppress Uyghurs.
  - China is choosing to use these technologies to pursue control over its people and its repression of members of ethnic and religious minority groups.

### **Way Forward**

- All the countries should reconsider their position and urge China to immediately stop the persecution of Muslims and the prohibition of Islam in Xinjiang.
- It should adopt multiculturalism and accept the Uyghurs and other Turkic Muslims of China as ordinary citizens equal to native Chinese.

## **2.5 RATS-SCO**

- Recently, India assumed the Chairmanship of Council of Regional Anti-Terrorist Structure of Shanghai Cooperation Organization (RATS-SCO) in 2021 for a period of one year.
  - In pursuance of this, the National Security Council Secretariat (NSCS) in association with Data Security Council of India (DSCI), organized a Seminar on Securing Cyberspace in the Contemporary Threat Environment.

### **Key Points**

#### **About RATS-SCO**

- SCO-RATS is a permanent body of the SCO and is intended to facilitate coordination and interaction between the SCO member states in the fight against terrorism, extremism and

separatism.

- The main functions of SCO-RATS are coordination and information sharing.
- As a member, India has actively participated in the activities of SCO-RATS.
- India's permanent membership would enable it to generate greater understanding among members for its perspective.

### **About Shanghai Cooperation Organization (SCO)**

- The Shanghai Cooperation Organization (SCO) was established as a multilateral association to ensure security and maintain stability across the vast Eurasian region. It envisages joining forces to counteract emerging challenges and threats, and enhance trade, as well as cultural and humanitarian cooperation. It was created in 2001.
- Prior to the creation of SCO in 2001, Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.
  - Shanghai Five (1996) emerged from a series of border demarcation and demilitarization talks which the four former Soviet republics held with China to ensure stability along the borders.
- Following the accession of Uzbekistan to the organisation in 2001, the Shanghai five was renamed the SCO.
- The SCO Charter was signed in 2002, and entered into force in 2003. The SCO's official languages are Russian and Chinese.

### **SCO has two Permanent Bodies**

- SCO Secretariat in Beijing,
- Executive Committee of the Regional Anti-Terrorist Structure (RATS) in Tashkent.
- The Chairmanship of SCO is by rotation for a year by Member States. India and Pakistan became members in 2017.
- Member countries: Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India, Pakistan.
  - Recently, Iran's bid to become a full member of the SCO has been approved.

### **India & SCO**

#### **Advantages for India**

- Regional Security: SCO will enable India, as an integral part of the Eurasian security grouping, to neutralise centrifugal forces arising from religious extremism and terrorism in the region.
- Embracing Regionalism: The SCO is one of the few regional structures India is a part of now, given a decline in its engagement with SAARC, Bangladesh, Bhutan, India, Nepal (BBIN) Initiative.
  - More importantly, cooperation in three critical areas— energy, building trade and transportation links, and dealing with traditional and non-traditional security threats.
- Connect With Central Asia: The SCO provides India with a convenient channel for its outreach —



trade and strategic ties — to Central Asian countries.

- SCO is also a potential platform to advance India's Connect Central Asia policy.
- The foundation of India's economic outreach to Central Asia is based on its 2012 Connect Central Asia Policy with its focus on the 4 C's - Commerce, Connectivity, Consular and Community.
- **Foundational Dimensions of SECURE:** Acknowledging the strategic importance emanating from the region and SCO, the Indian Prime Minister had articulated the foundational dimension of Eurasia being 'SECURE'. The letters in the word SECURE are:
  - S for Security of our citizens,
  - E for Economic development for all,
  - C for Connecting the region,
  - U for Unite our people,
  - R for Respect for Sovereignty and Integrity, and
  - E for Environment protection.
- **Dealing with Pakistan & China:** SCO provides India with a forum where it can constructively engage both China and Pakistan in a regional context and project India's security interests.

### **Challenges That India Needs to Navigate**

- **Absence of Direct Land Connectivity:** A major impediment in India's expanded engagement with Eurasia remains the strategic denial of direct land connectivity between India and Afghanistan and beyond by Pakistan.
  - The lack of connectivity has also hampered the development of energy ties between the hydrocarbon-rich region and India
- **Growing Russia-China Convergence:** One of the major factors for Russia pushing India's inclusion into the SCO was to balance China's power.
- **Difference Over BRI:** While India has made its opposition to Belt and Road Initiative (BRI) clear, all other SCO members have embraced the Chinese project.
- **India-Pakistan Rivalry:** SCO members have, in the past, expressed fears of the organisation being held hostage to India's and Pakistan's adversarial relationship, and their fears would likely have worsened in recent times.

### **Way Forward**

- **Improving Connectivity with Central Asia:** The opening of Chabahar port and India's entry into the Ashgabat agreement should be utilized for a stronger presence in Eurasia.
  - Besides this, a clear focus on operationalising International North-South Transport Corridor (INSTC).

- **Improving Relations With China:** It is imperative that India and China set up a modus vivendi (agreement allowing conflicting parties to coexist peacefully) for the 21st century to be Viewed through the lens of an Asia century.
- **Strengthening Military Corporation:** In the context of increasing terrorism in the region, it is imperative for SCO countries to develop a ‘cooperative and sustainable security’ framework and make the Regional Anti-Terrorist Structure more effective.

### 3. INDIAN ECONOMY

#### 3.17 Initiatives By States For Investment Promotion

- Affidavit-based clearance system - ABCS by Karnataka and a similar system in UP to provide all clearances in a time-bound manner including plan approval, identification of land, conversion of land, environmental approvals and electricity supply for new enterprises. Affidavit based clearance is given upfront once basic infrastructure is in place and then the investor has 2 years to procure all approvals post-facto.
- Transparent Mechanism for Investment Facilitation that involves sharing the leads of prospective investors who are in touch with GoI with States. More emphasis on adoption of technology and increase of digital infrastructure.
- Clear-cut policy and SOPs on environment and forest clearances by Government of India, on the lines of 'Eco-Economics' and more powers to States under forest/environmental matters.
- Reassessment of District Mineral Fund policy for fund utilization for leveraging across the entire state instead of confining it to a district.
- Fast-track clearance and approvals for externally-aided projects by GoI. Reimbursement requested in advance mode.
- Similar approach to coastal zone regulations framework and application across all coastal states.
- Legal reassessment and intervention on the legality of conversion of several different types of lands into industrial parks.
- Strengthening the dispute resolution mechanism, post-award contract enforcement and of model concession agreements to strengthen infrastructure PPP ecosystem.
- Special emphasis on enhancing road connectivity in North Eastern states even as a lot of work has been done in this regard. These states are rich in resources such as bamboo, which can potentially be utilized in industry but cannot be sent as of now due to connectivity gaps in road and highways.
- Instill greater increase in banking penetration as well as credit-deposit ratio in states vis-à-vis their dependent population. Moreover, even if in absence of new banking infrastructure, strengthening of existing banks in terms of manpower and systems should be able to address a critical gap.
- GoI engagement with NE states to develop a State-specific International trade policy in North East depending on location (Look East, Look West, Look South etc).
- Development of agri-specific infrastructure (GI labs, cold storage, and farmer's market) throughout the country, but especially in North East since a majority of population is dependent on agriculture.
- Emphasis on increased air connectivity for Himalayan states to support tourism prospects.
- Drafting a policy for offshore wind energy.
- Continuation of Centre's Scheme of loan for capital expenditure beyond the current financial year.

**3.18 UNWTO Award For Pochampally In Telangana**

- The Best Tourism Villages by UNWTO (United Nations World Tourism Organisation) Pilot initiative aims to award those villages which are outstanding examples of rural destinations and showcase good practices in line with its specified nine evaluation areas.
- It also aims to support villages to enhance their rural tourism potential through training and access to opportunities for improvement.
- The Ministry of Tourism recommended three villages for the UNWTO Best Tourism Village entry from India. These were Kongthong in Meghalaya, Ladhpura Khas, Madhya Pradesh and Pochampally in Telangana. Pochampally was awarded by UNWTO.

**3.19 Mission 500 GW By 2030**

- Under the guidance of Union Minister of Power and New & Renewable Energy, the Ministry of Power and New & Renewable Energy have issued revised guidelines providing for thermal generation companies to set up renewable energy generation capacity either by themselves through developers by open bids and supplying it to the consumers under the existing PPAs. This will enable the replacement of fossil fuel based energy by renewable energy under the existing PPAs.
- As the cost of renewable energy is less than the cost of thermal energy, the gains from the bundling of renewable energy with thermal will be shared between the generation and distribution companies/other procurers on a 50-50 basis.
- As the renewable energy will be balanced with thermal energy, therefore, the DISCOMs now will not need to acquire any separate capacity for balancing of renewable energy.
- This is a very significant step towards achieving the goal of 500 GW of non-fossil fuel capacity by 2030. The distribution companies will be able to count the renewable energy supplied under the scheme towards their renewable energy purchase obligation and this will be without the financial burden of separate PPA.
- This step by the Central Government will lead to a faster energy transition and will be beneficial for both the generation and the distribution companies.
- Under the direction of the Hon'ble Minister of Power and New & Renewable Energy, the Ministry of Power and New & Renewable Energy is poised to take some additional steps for achieving 500 GW by 2030.

**3.20 PMGSY-I, PMGSY-II And Road Connectivity Project for RCPLWEA**

- Road Connectivity Project of Left Wing Extremism affected Areas (RCPLWEA) was started in 2016 to improve connectivity in 44 LWE affected districts in 9 states.
- 5,714 Km road length 358 bridge works are pending for completion and another 1,887 Km road length and 40 bridges are being sanctioned. The scheme is being extended up to March 2023 for

completion of these projects, which are very critical from communication and security point of view.

- The Pradhan Mantri Gram Sadak Yojana (PMGSY) promotes use of new and green technology in construction of rural roads. Locally available materials are used in road construction in order to promote cost-effective and fast construction.
- So far, more than 1 lakh km length of roads have been taken up using new and green technology, out of which, more than 61,000 km has been completed.
- The State of Uttar Pradesh has recently been sanctioned 1,255 Km road length for construction using Full Depth Reclamation Technology, which will not only save cost and time in a big way, but also conserve natural resources and reduce carbon footprint.
- The PMGSY envisages a three tier Quality Assurance Mechanism to ensure quality of road works during construction and post-construction. The number of quality monitors both at central and state levels and also the intensity of the inspections have been increased for a better quality management. The proportion of satisfactory works has witnessed increasing trend in recent years.
- Government launched PMGSY-III in 2019 for consolidation of 125,000 Km road length by March 2025. Around 72,000 Km road length has so far been sanctioned under PMGSY-III, out of which, 17,750 km has been completed.

### **3.21 NERCRMS – Aiding transformation of North East India**

- North Eastern Region Community Resource Management Society (NERCRMS) is a registered society under the aegis of North Eastern Council, Ministry of Development of North Eastern Region.
- The society is dedicated towards the transformation of far flung rural areas of North Eastern Region (NER) of India through different livelihood initiatives. The society, so far has covered four states of NER viz. Arunachal Pradesh (Changlang, Tirap and Longding districts), Assam (Karbi Anglong and Dima Hasao districts), Manipur (Ukhrul, Senapati, Churachandpur and Chandel districts) and Meghalaya (West Garo Hills and West Khasi Hills districts).
- The society, since 1999, has formed 8,403 SHGs (Self Help Groups) and 2,889 NaRMGs (Natural Resource Management Groups) in 2,532 villages benefiting 118,843 households through its project-North Eastern Region Community Resource Management Project (NERCORMP).
- The overall objective of the project is to “To improve the livelihoods of vulnerable groups in a sustainable manner through improved management of their resource base in a way that contributes to preservation and restoration of the environment”.
- The society adopted a holistic approach of development with two broad focus areas i.e. (i) social mobilization, organization and capacity building to tap and realize the great latent potential of the

communities by employing their time tested traditional value systems and culture, and (ii) Intervene with the economic and social activities and infrastructure with predominant thrust on income generating activities to achieve economic transformation.

**The strategy adopted to achieve the goals is**

- Consistently promoting an inclusive development approach wherein women, weaker and the poorest participate on equal footing and platform and in the process realizing true participatory approach in letter and spirit.
- Formation and establishment of viable and robust community based organizations namely SHGs and NaRMGs.
- A deliberate and conscious approach to trust communities and entrust them with corresponding responsibilities.
- Promoting thrift and saving through revolving fund to SHGs to provide easy access to credit, who initially had mixed purpose of loaning both for consumption and income generating activities (IGAs), but later moved on predominantly towards IGA.
- Ensuring transparency and accountability at all levels; introducing and encouraging social auditing at all levels.
- All village development funds being managed by the communities themselves through bank accounts and in transparent manner.
- Up scaling and enhancing the Income Generating Activities (IGAs) that are carried out with sensitivity.
- Involving Traditional Institutions (TIs) and Social Institutions (SIs) in existence to achieve set goals and objectives through a formal agreement.
- Capacity building and training on regular basis covering diverse areas.
- Providing space for people (both communities and team members) to grow and encourage creativity and involvement.

**3.22 Stability In Prices of Pulses**

- To control prices on account of hoarding and resultant artificial scarcity of pulses, the Centre imposed stock limit on all pulses except Moong, under the Essential Commodities Act, 1955
- The retail prices of pulses have substantially stabilized in the past five months, from June 2021. As on date, the prices of Gram, Tur, Urad and Moong have either declined or remained stable in comparison with last year.
- The CPI inflation for pulses has also seen a consistent decline during the last five months, from 10.01% in June 2021 to 5.42% in October 2021. The pulses inflation rate was as high as 18.34% in October 2020. Similarly, the WPI inflation for pulses has declined from 11.56% in June 2021 to 5.36% in October 2021.

- Stability in the retail prices of pulses has been achieved on account of pre-emptive and proactive measures taken by the government such as changing the category of import of Tur, Urad and Moong from “restricted” to “free” w.e.f May 15, 2021 in order to ensure smooth and seamless imports.
- The Free regime in respect of Tur and Urad has been extended. The last date for Bill of Lading is December 31, 2021 and for Customs clearance, it is January 31, 2022.
- This policy measure has been supported with facilitation measures and close monitoring of its implementation by the concerned Departments/organisations.
- The import policy measures have resulted in substantial increase in import of Tur, Urad and Moong as compared to the corresponding period for the past two years

### **3.23 Consumer Price Index Numbers for Agricultural and Rural Labourers**

- The All-India Consumer Price Index Numbers for Agricultural Labourers and Rural Labourers (Base: 1986-87=100) for the month of October 2021 increased by 14 points each to stand at 1081 (One thousand and eighty one) and 1090 (One thousand and ninety) points respectively.
- The major contribution towards the rise in general index of Agricultural Labourers and Rural Labourers came from Food group to the extent of 12.02 & 11.70 points respectively mainly due to rise in prices of vegetables & fruits, wheat atta, pulses, onion, meat-goat, fish-fresh, mustard oil, sugar, gur, chillies-green/dry etc.
- The rise/fall in index varied from State to State. In case of Agricultural Labourers, it recorded an increase of 5 to 22 points in 19 States and a decrease of 5 points in Manipur State. Karnataka with 1254 points topped the index table whereas Himachal Pradesh with 870 points stood at the bottom.
- In case of Rural Labourers, it recorded an increase of 4 to 22 points in 19 States and a decrease of 5 points in Manipur State. Karnataka with 1252 points topped the index table whereas Bihar with 900 points stood at the bottom.
- Amongst states, the maximum increase in the Consumer Price Index Numbers for Agricultural and Rural Labourers was experienced by Jammu & Kashmir (22 points each) mainly due to rise in the prices of vegetables & fruits, onion, mustard-oil, plastic shoes etc.
- On the contrary, the maximum decrease in the Consumer Price Index Numbers for Agricultural Labourers and Rural Labourers was experienced by Manipur (5 points each) mainly due to fall in the prices of rice, fish-fresh, firewood, vegetables & fruits etc.

### **3.24 CCI Study On Pharmaceutical sector in india**

- With the overarching objective of understanding the factors that influence price competition in the pharmaceutical sector, the Competition Commission of India (CCI) conducted a study which focused on the specific realms of pharmaceutical distribution and the role of trade associations



therein, trade margins, online pharmacies and the prevalence of branded generic drugs in India and its implications for competition.

- Since the pharmaceutical sector is a regulated sector, the study also attempted to explore the areas of interface between regulation and competition with a view to ascertain the CCI's advocacy priorities.
- The report summarises the main findings and the CCI's observations based on the study. It is expected that the insights gained from the market study will inform and contribute significantly to the design of the Pharma market in India to help attain the objective of affordable medicines for all.

### **3.25 Rise In export Of Agricultural and processed food Products**

- In a major boost to export prospects of agricultural produce, India registered a significant surge in export of agricultural and processed food products in April-October period of current Financial Year, 2021-22, in comparison to the corresponding seven month period of last fiscal, 2020-21.
- According to the Quick Estimates released by the Directorate General of Commercial Intelligence and Statistics (DGCI&S), the overall export of Agricultural and Processed Food Products Export Development Authority (APEDA) products witnessed 14.7 percent growth in terms of USD during April-October 2021 over the same period of the previous year.
- The APEDA has also taken several initiatives to promote products having registered geographical indications (GI) in India by organizing virtual Buyer Seller Meets on agricultural and food products with UAE and on GI products, including handicrafts with USA.
- APEDA is continuing with the initiative of conducting Virtual Buyer Seller Meets (VBSM) with potential importing Countries to popularize the GI products of major agricultural commodities exported.
- In order to ensure seamless quality certification of products to be exported, APEDA has recognized 220 labs across India to provide services of testing to a wide range of products and exporters.
- APEDA also assists in upgradation and strengthening of recognized laboratories for export testing and residue monitoring plans. APEDA also provides assistance under the financial assistance schemes of infrastructure development, quality improvement and market development for boosting export of agricultural products.
- APEDA organizes participation of exporters in the International Trade Fairs, which provides a platform to the exporters to market their food products in the global marketplace. APEDA also organizes National events like AAHAR, Organic World Congress, and BioFach India etc. to promote agri-exports.
- APEDA also initiates registration of pack-houses for horticulture products for meeting the quality requirements of the international market. For instance, registration of export units for peanut

shelling, grading and processing units is to ensure quality adherence for the EU and non EU countries.

- APEDA carries out registration of meat processing plants and abattoirs for ensuring compliance with the global food safety and quality requirements. Another key initiative includes development and implementation of traceability systems which ensure the food safety and quality compliances of the importing countries.
- APEDA compiles and disseminates the various international trade analytical information and market access information amongst exporters for boosting exports and addresses the trade enquiries.

### **3.26 Special Credit Linked capital Subsidy scheme (SCLCSS) For Services Sector**

- During the MSME North East Conclave, Union Minister for MSME, Shri Narayan Rane launched the Special Credit Linked Capital Subsidy Scheme (SCLCSS) for services sector in the presence of senior officers of the Ministry of MSME at Guwahati.
- The scheme will help in meeting the technology related requirements of enterprises in the services sector and has a provision of 25% capital subsidy for procurement of Plant & Machinery and service equipments through institutional credit to the SC-ST MSEs without any sector specific restrictions on technology upgradation.

### **3.27 Pradhan Mantri Awaas Yojana – Gramin completes 5 Years**

- To achieve the objective of providing “Housing to All” by the year 2022, the Government of India rolled out the revamped rural housing scheme, Pradhan Mantri Awaas Yojana-Gramin (PMAY-G) and was launched on 20th November, 2016 with effect from 1st April 2016. The program envisages the completion of 2.95 crore PMAY-G houses with all basic amenities by the year 2022.
- Apart from focusing on providing houses to the eligible beneficiaries, PMAY-G also addresses the basic needs of households through convergence with other Government Schemes. The beneficiary is entitled to 90/95 person-days of unskilled labour from MGNREGS. The assistance for the construction of the toilet shall be leveraged through convergence with SBM-G. Convergence for piped drinking water, electricity connection, LPG gas connection etc. under different Government programmes is also an inherent thematic component.
- The program is being implemented and monitored through end to end e-governance solutions, Awaas Soft and Awaas App. Awaas Soft provides functionalities for data entry and monitoring of multiple statistics related to implementation aspects of the scheme. These statistics include physical progress (registrations, sanctions, house completion and release of instalments etc.), financial progress, status of convergence etc.
- Since the launch of the scheme in 2016, efforts are being taken to make the software more user-friendly. New modules have been added in the software for making it more accessible and

maintaining transparency in the implementation of the programme. Some of the modules added recently in the software are as below:

- **Landless Module** - The scheme has also taken care of landless households in the permanent waitlist (PWL). The State Government must ensure the provision of land to landless households on priority as they are the neediest ones. Further, to map landless beneficiaries in the PWL of PMAY-G and to capture the status of availing land or financial assistance for land purchase to the landless beneficiaries, a module on landless has been developed. The module captures the status of land provided to landless beneficiaries either financially assisted or provided land physically.
- **E-Ticketing system** – This module has been introduced to address the grievances pertaining to technical as well as non-technical issues under PMAY-G as referred by the State/UTs.
- **Aadhar Based Payment System** –ABPS allows Direct Benefit Transfer (DBT) to the PMAY-G beneficiary in his/ her bank account linked with the Aadhar number of the concerned beneficiary for the safe and authentic transaction.
- In addition to the above, a module on understanding the features of PMAYG, from design to execution, is also available on iGOT, which is an e-learning platform intended for the capacity building of stakeholders of PMAY-G.

### **3.28 World Bank Loan For Education**

- The Government of India, Government of Andhra Pradesh and the World Bank have signed the legal agreements for \$250 million for a project which aims to improve quality of learning for over 50 lakh students in the state of Andhra Pradesh.
- The state has adopted a new competency-based teaching-learning approach. The project will improve teaching practices through classroom-based mentorships, need-based teacher training for teachers of all grades and subjects, Personalized Adaptive Learning (PAL) methods, and other forms of remedial education linked to standardized school-based assessments.
- Developing the institutional capacity of schools for delivering these services will go a long way in building community confidence and improving the learning environment. The project will help with better maintenance of school facilities, support involvement of parents in school management and monitoring, make data available, and enhance school safety.

### **3.29 National Apprenticeship Training Scheme**

- The Cabinet Committee on Economic Affairs chaired by the Prime Minister, Shri Narendra Modi has accorded its approval for stipendiary support of Rs. 3,054 crore to apprentices who undergo apprenticeship training under National Apprenticeship Training Scheme (NATS) of Ministry of Education for the period from 2021-22 to 2025-26 (up to 31-03-2026).
- The NATS will provide apprenticeship in the emerging areas under 'Production Linked Incentive' (PLI) such as Mobile manufacturing, Medical devices manufacturing, Pharma sector,

Electronics/Technology products, Automobile sector etc. The scheme will also be preparing skilled manpower for connectivity/logistics industry sectors, identified under Gati Shakti.

### **3.30 2nd Global chemicals & Petrochemicals manufacturing hub (GCPMH) Summit**

- The event was organised by the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India jointly with the Federation of Indian Chambers of Commerce and Industry (FICCI), in Phygital format (Phygital and Digital) and aims to transform India to a global chemical and Petro-chemical manufacturing hub.
- The summit highlighted the true potential of the Indian Chemicals and Petrochemicals Sector to the world. India is increasingly being considered as the preferred destination for investment worldwide after the onset of the Pandemic. This edition of the GCPMH provided a grand overview of this fast-surging major sector of the Indian economy and was a platform for investors and other stakeholders to interact and forge alliances, highlighting and promoting segment-wise investment opportunities in respective investment regions, thereby providing immense potential for trade and investment, in a mutually beneficial way.
- During the GCPMH 2021, important issues such as Exploring the potential of PCPIRs and paving way for inclusive growth in Region, Sector, and Economy; Strategic Global Partnerships; Evolving opportunities in Chemical & Petrochemical Industry in Post COVID Era; Importance of Environmental, Social and Corporate Governance and Circular Economy in shaping the future of Chemical and Petrochemical Industry; Dynamics of Feedstock; Supply Chain Disruptions in the Chemicals & Petrochemicals Industry; Sustainable Green Chemistry; and Role of Digitalization in retaining the industrial momentum and growth were discussed.

### **3.31 India And USA agree On a transitional Approach on Equalisation Levy**

- India and United States joined 134 other members of the OECD/G20 Inclusive Framework (including Austria, France, Italy, Spain, and the United Kingdom) in reaching agreement on the Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalization of the Economy.
- India and United States have agreed that the same terms that apply under the October 21 Joint Statement shall apply between the United States and India with respect to India's charge of 2% equalisation levy on e-commerce supply of services and the United States' trade action regarding the said Equalisation Levy. However, the interim period that will be applicable will be from 1st April 2022 till implementation of Pillar One or 31st March 2024, whichever is earlier.
- India and United States will remain in close contact to ensure that there is a common understanding of the respective commitments and endeavor to resolve any further differences of views on this matter through constructive dialogue.

### 3.32 Coal Controller Organisation

- Coal Controller Organisation, Ministry of Coal collects and maintains coal production data of all private and public sector coal mines in the country. This information is collected on monthly basis.
- To ensure fair production and commercial transaction, Coal Controller Organisation, a subordinate office under Ministry of Coal, has been entrusted with the following responsibilities:
  - Inspection of collieries so as to ensure the correctness of the class, grade or size of coal.
  - To issue directives for the purpose of declaration and maintenance of grades of coal of a seam mined in a colliery.
  - To act as the appellate authority in case of dispute between consumers and owner arising out of declaration of grade and size of coal.
  - To regulate disposal of stock of coal or the expected output of coal in the colliery.
  - Quality surveillance with respect to maintenance of grade, loading of coal in wagons/ trucks according to laid down procedures regarding grades and sizes.
  - To grant opening / re-opening permission of coal mine, seam or a section of seam or to sub-divide a mine.
  - Assessment and collection of excise duty levied on all raw coal raised and dispatched.
  - Submission of monthly coal data to different ministries of Central and State Government, national and international organization.
- Directorate General of Mines Safety [DGMS] is the Indian Government Regulatory agency for safety in mines. The mission of the DGMS is to continually improve safety and health standards, practices and performance in the mining industry and upstream petroleum industry by implementing pro-active safety and health strategies, continuous improvement of processes, effective use of resources and commitment and professional behaviour in its personnel.
- Further, safety provisions are included in the Agreement signed by the Ministry with Private Mine allocattees. As per agreement signed with Private Mine allocattees, the successful bidder shall comply with all applicable Laws and Good Industry Practice for the protection of the general health, safety, welfare, social security and minimum wages of employees engaged at the Coal Mine, including employees of any contractor or sub-contractor and of all other persons having legal access to the area covered by this Agreement.

## 4. ENVIRONMENT

### 4.11 Arunachal Pradesh: India's 1st Certified Organic Fruit Kiwi Launched

- The launch ceremony was held in association with support from Arunachal Pradesh Government and National Agricultural Cooperative Marketing Federation of India Ltd (NAFED).
- This initiative was undertaken as part of the vision with the aim of transforming India into a self-reliant nation under “Atma Nirbharta campaign”.
- Arunachal Pradesh is the 1st Indian state, that obtained “organic certification of kiwifruit” under the “Mission Organic Value Chain Development for North East Region (MOVCD-NER)”, which is a Central Government scheme launched for North-eastern states

#### **Aadi Mahotsav**

- The Aadi Mahotsav is an annual tribal festival, being organized by Tribal Cooperative Marketing Development Federation of India Limited (TRIFED).
- It is annual tribal festival that draw tribes and their unique stories into the highlight.
- Aadi Mahotsav was inaugurated on November 16, 2021 by Sukhram Munda who is the grandson of Bhagwan Birsa Munda.

#### **Ziro Valley**

- Ziro Valley is a town and district headquarters of Lower Subansiri district in Arunachal Pradesh. This town has been included in Tentative List for UNESCO's World Heritage Site for its Apatani cultural landscape

### 4.12 Kuno National Park to get 13 cheetahs next year



#### **IUCN Status of Cheetah**

As per United Nations, Cheetahs have been listed as “Vulnerable” in the Red List of Threatened Species by the International Union for Conservation of Nature (IUCN). However, recent study revealed the decline in its population. Hence, demand is there for cheetahs to be listed to “Endangered category”. In North Africa and Asia, cheetahs are considered as “Critically Endangered.”

#### **4.13 National Pollution Control Day: December 2**

- Every year, India marks the National Pollution Control Day on December 2. The day is observed in the memory of the people who lost their lives in the Bhopal Gas Tragedy. The National Pollution Control Day is celebrated in India to make the citizens aware of laws that exist in India that help to contain pollution.

##### **Bhopal gas tragedy**

- The Bhopal gas tragedy occurred on December 2nd and 3rd, 1984. During the accident poisonous chemical Methyl Isocyanate leaked from pesticide plant Union Carbide India Limited in Bhopal. This exposed more than 500 thousand people to the poisonous gas. Around 2259 people died immediately. Later the Government of India announced that the tragedy killed around 25,000 people. It was considered as the biggest industrial disaster in the world.

Theme of National Pollution Control Day, 2021

- To create awareness about the importance of pollution control
- To educate people on how to prevent pollution

#### **4.14 Project RE – HAB**

- Project RE – HAB is Reducing Elephant Human – Attacks using Bees. It was recently launched in Assam.

##### **What is Project RE – HAB?**

- The Project RE – HAB creates “bee fences”. The honey bees in these fences’ thwart elephant attacks in human habitations. They dissuade the elephants without harming them. It is highly cost – effective as compared to erecting fences or digging trenches. Simultaneously, it increases honey production and increases farmer income. Also, the project helps to address climate change issues by regenerating forest cover.

##### **How does the project work?**

- Under the project, the bee boxes are placed in the premises of human habitation. They are placed as fences. Around 15 to 20 bee boxes are placed around the habitation that is to be protected. The buzz of the bees irritates the elephants the most. They fear that the honey bees might sting them in their trunks and eyes. And therefore, they do not walk ahead of the boxes. The boxes are connected with a string. When the elephants try to pass through the string, a pull or tug causes the bees to swarm towards the elephant.

##### **Implementing Agency**

- The Project RE – HAB is implemented by the Khadi and Village Industries Commission (KVIC). The KVIC is a statutory body established under Khadi and Village Industries Commission Act, 1956. The main function of KVIC is to plan, promote, organize and implement programmes for the development of village industries in rural areas.



### Project RE – HAB a sub – mission to National Honey Mission

- The Project RE – HAB is a sub mission to National Honey Mission of KVIC. It was launched to provide awareness and training in using bee boxes along the bee colonies. The mission was launched in 2017 and is in line with Sweet Revolution.

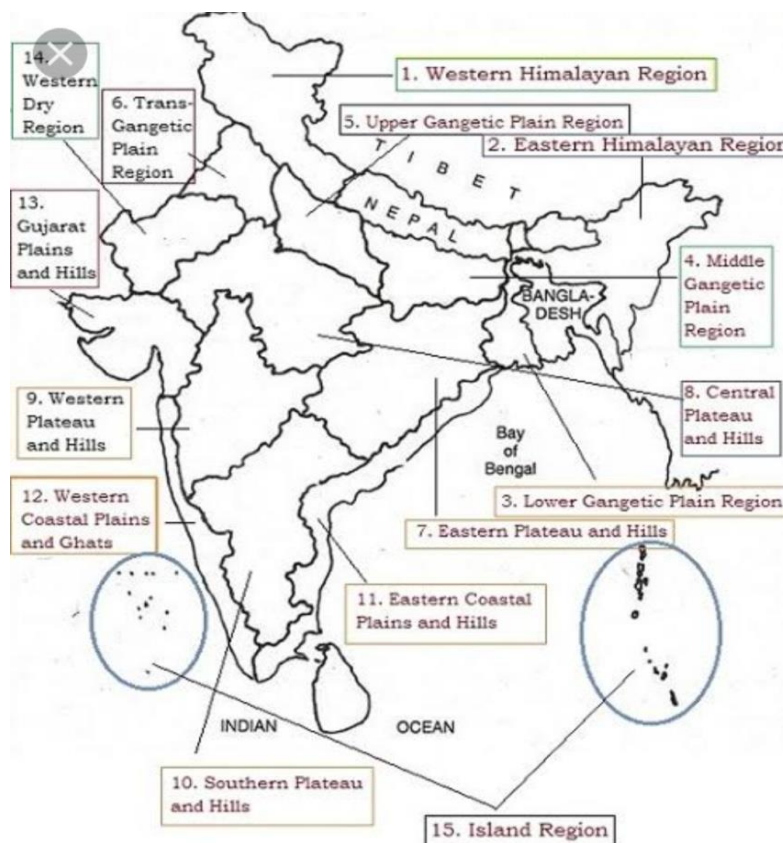
### Where was Project RE – HAB launched?

- The Project was first launched in Karnataka. Upon its huge success in the state, it is to be launched in West Bengal, Odisha, Jharkhand, Chhattisgarh, Tamil Nadu and Kerala.

### What is the need for the project?

- Between 2014 and 2019, around 403 deaths occurred due to elephant – human conflict. 397 deaths occurred in Odisha, 349 in Jharkhand, 332 in Assam, 170 in Karnataka and 289 in Chhattisgarh. Also, around 500 elephants died in human – elephant conflict in the last five years alone.

### 4.15 Agro – Climatic Zones of India



- Agro – Climatic Zone is a land that is suitable for growing particular type of crop. It is essential to delineate the land in the country into agro – climatic zones for sustainable agricultural production.

### What are the agro – climatic zones of India?

- There are 15 agro – climatic zones in India. They are western Himalayas, eastern Himalayas, lower gangetic plains, middle gangetic plains, upper gangetic plains, trans gangetic plains, eastern plateau

and hills, central plateau and hills, western plateau and hills, southern plateau and hills, east coast plains and hills, west coast plains and hills, Gujarat Plains and Hills, western dry region and islands.

#### **What is the difference between agro – climatic zone and agro – ecological zone?**

- An Agro – Ecological Zone is carved out from the Agro – Climatic Zone. It is the land unit that acts as a modifier to climate and length of growing period. There are 20 agro – ecological zones in India.
- The Agro – Climatic Zone has two major variants. They are climate and growing period. The Agro – Ecological Zone has four major variables. They are climate, soil types, landforms and length of growing period.

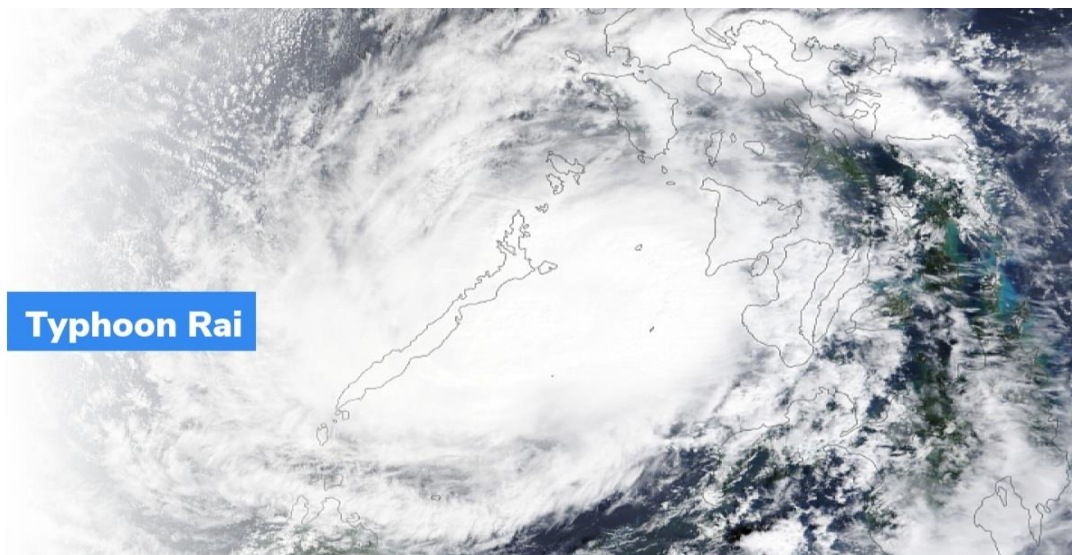
#### **NARP for Agro – Climatic Zones**

- The Indian Council of Agricultural Research launched National Agricultural Research Project to set up zonal research centres in each agro – climatic zone. These centres will analyse agro – ecological conditions and cropping patterns in the regions.

#### **Agro Climatic Zones in Punjab**

- There are six agro – climatic zones in Punjab. They are Flood Plain Region (FPR), Western Region (WR), Western Plain Region (WPR), Central Plain Region (CPR), Undulating Plain Region (UPR) and Sub – Mountain Undulating Region. In these zones, the rainfall pattern, soil texture, climatic conditions, humidity conditions and temperature are different from each other

#### **4.16 Typhoon Rai hits Philippines**



#### **About Typhoon Rai**

- Typhoon Rai is called as Typhoon Odette in the Philippines. It is currently a powerful tropical cyclone, which impacted the Philippines after passing near the island of Palau. It became the first Category 5 super typhoon in December month. It later weakened steadily, as it traversed Visayas and exited into the Sulu Sea.

**The Sulu Sea**

- Sulu Sea is a water body in south-western area of the Philippines. The sea comprises of a number of islands, namely:
- Cuyo Islands
- Cagayan Islands
- Mapun Islands
- Turtle Islands

**4.17 Update of IUCN Red List of Threatened Species**

- As per an update of IUCN Red List of Threatened Species, the destruction of wetlands is causing the decline of dragonflies across the world.

**About IUCN red list**

- IUCN red list stands for 'International Union for Conservation of Nature' Red List of Threatened Species. It was founded in 1964. This list is the most comprehensive inventory of conservation status of biological species of the world. It uses a set of precise criteria for evaluating the extinction risk of species and subspecies. These criteria are relevant to all species and all the regions worldwide. List is recognized as the most authoritative guide, because of its scientific base.

**Aim of the IUCN Red List**

- IUCN red list is maintained with the aim of conveying the urgency of conservation issues to the public as well as policy makers. It seeks to help the international community for reducing species extinction. Primary goal of the Red List is to provide scientific information on the status of species and subspecies at international level.

**4.18 Carcass Of Endangered Bryde's Whale found at Odisha Coast**

- Bryde's whale or Bryde's whale complex
- Bryde's whale comprises of three species of rorqual and maybe four. "Complex" means the number and its classification remains unclear due to lack of definitive information & research.



- Common Bryde's whale is a larger form occurring worldwide in warm temperate and tropical waters
- Sittang or Eden's whale is a smaller form, which are restricted to the Indo-Pacific.
- A smaller & coastal form of B. Brydei is found off southern Africa.

#### Common name

- Brydei have got its specific and common name from Johan Bryde, who was a Norwegian consul to South Africa. He helped in establishing the first modern whaling station. B. edeni gets its specific and common names from Sir Ashley Eden who was the former High Commissioner of Myanmar.

#### Distribution of B. brydei

- Brydei occurs in Atlantic, Pacific, and Indian Oceans in between the 40th parallels of latitude. They prefer highly productive, tropical, subtropical, and warm, temperate waters having 16–22 °C. They also occur in Honshu in the north Pacific, west & southern California as well as in Washington in the United States

#### 4.19 What is a 'Sponge city' in Water Management?



- Chennai is all set to adopt innovative water management strategies and transform into a sponge city to curb the urban flooding.
- Sponge city concept seeks to make urban areas more permeable, have more open spaces to store rainwater as well to allow it to percolate to aquifers.



- Water Resources Department in Chennai is looking over possibility of digging recharge shafts in smaller water bodies across the city.
- These recharge shafts can be dug up to a depth of 80-90 feet. It will help replenish water table.
- As per plan, smaller water bodies & temple tanks could be used as structures for storing surplus water during intense rain. Water can be treated, drawn, and supplied to the city as per need.

### **What is a sponge city?**

- Sponge city is a new urban construction model for flood management, and to strengthen ecological infrastructure & drainage systems. This concept was proposed by Chinese researchers in 2000. The Chinese Communist Party (CCP) and State Council accepted this concept as “urbanism policy” in 2014. This system helps in alleviating urban flooding, urban heat island effect and water resources shortage. It also improves the ecological environment and biodiversity by absorbing & capturing rain water and using it to reduce floods. Sponge city policies are nature-based solutions, which use natural landscapes for catching, storing and cleaning water. This concept was inspired by ancient wisdom of adaptation to climate challenges, specifically in monsoon world.

### **Sponge Cities Mission – In India**

- The main idea of the sponge city is to make cities more permeable in order to hold and use water which falls upon it. These can all be delivered effectively by an urban mission along the lines of National Heritage City Development & Augmentation Yojana (HRIDAY), Atal Mission for Rejuvenation & Urban Transformation (AMRUT), and Smart Cities Mission.

### **What is the need of Sponge Cities Mission in India?**

In India, there is a need of Sponge cities because

- Urban flooding has become recurring phenomenon in Indian metros.
- India’s Land policy has not been effective in managing or controlling the recurrence of major floods in urban areas.
- Urban cities lack proper drainage network.
- Concrete structures in urban cities are causing water wastage

#### **4.20 Saryu Canal National project**



- Minister Narendra Modi is set to inaugurate the Rs 9,802 crore Saryu Canal National project in Balrampur district of Uttar Pradesh on December 11.
- The Saryu Canal project is the biggest in Uttar Pradesh.
- It will benefit some 25-30 lakh farmers across nine eastern UP districts namely, Bahraich, Gonda, Basti, Shravasti, Balrampur, SantKabir Nagar, Siddharthnagar, Gorakhpur and Maharajganj.
- Canal will facilitate irrigation of 14.04 lakh hectares of land, as well as reduce the risk of floods in several flood-prone areas of the region.
- The irrigated area under the project will be 4.04 lakh hectares.

**Rivers connected under the project**

- Under this project, five rivers namely Ghagra, Rapti, Banganga, Saryu and Rohini, have been connected.

**Length of the canal**

- The canals are having a total length of 6,600 kilometres and have been linked to the 318 km long main canal.

**History of the project**

- This project was started on a small scale, back in 1978 to provide irrigation facilities in two districts with a cost of Rs 78.68 crore.
- In the year 1982, it was expanded to nine districts and its name was changed to Saryu Canal National Project.
- The cost of the project increased to Rs 9,802 crore by 2021.

**The Saryu River**

- The Saryu River originates at a ridge south of Nanda Kot Mountain in Bageshwar district of the Uttarakhand. It flows through Kapkot, Seraghand and Bageshwar towns and finally discharging into the Sharda River at Pancheshwar, which is located at India—Nepal border. It then flows into Ghaghara River in Sitapur District of Uttar Pradesh. Lower Ghaghara is also known as Saryu River, especially when it flows through the city of Ayodhya. The river has been mentioned multiple times in the ancient Indian epic called Ramayana.

## 5. SCIENCE & TECHNOLOGY

### 5.10 ABHYAS

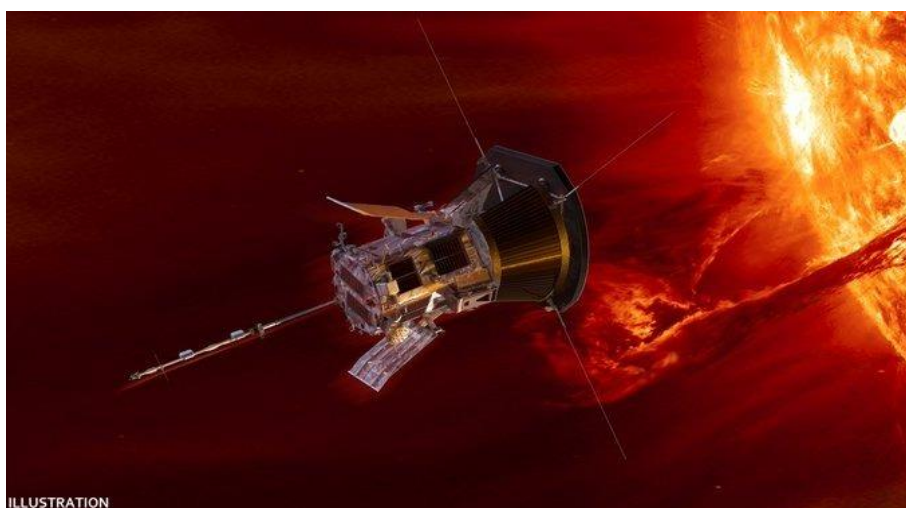
- The Defence Research and Development Organisation (DRDO) successfully flight-tested the High-Speed Expendable Aerial Target ABHYAS on 22nd October, 2021. The flight- test was launched from Odisha's Integrated Test Range (ITR), Chandipur, off the coast of the Bay of Bengal.



- ABHYAS acts as an aerial target for the evaluation of several high-speed missile systems. As part of developmental flight trials, the ABHYAS flight test was conducted. The High-speed Expendable Aerial Target provides a realistic threat scenario for the testing and practice of several missiles & weapon systems. It is designed for autonomous flying with the help of an autopilot. ABHYAS is equipped with RCS, Visual, and IR augmentation systems that are necessary for weapon practice.

### 5.11 NASA's Parker Solar Probe: First-ever mission to "Touch the Sun"

- Launched in 2018 to explore the mysteries of the Sun by circling closer to it than any other spacecraft, Parker Solar Probe has now successfully passed close enough to identify the magnetic zig-zag structures in the solar wind & the place where they originate.





- Unlike Moon, or Earth, the surface of the Sun does not have a solid surface; instead, it has a superheated atmosphere. This atmosphere consists of solar material that is bound to the Sun by gravity and other magnetic forces.
- With the rise in temperature and subsequent pressure, the material gets pushed away from the Sun and therefore, it reaches a point where gravity and magnetic fields are too weak to contain it.
- The point is known as the Alfvén critical surface. It marks the end of the solar atmosphere and the beginning of the solar wind. Importantly, beyond the Alfvén critical surface, the solar wind moves so fast that waves within the wind cannot ever travel fast enough to make it back to the Sun.

### **Into the Eye of the Storm**

- During the flyby, NASA's spacecraft has passed in and out of the corona surface several times. This is proved what some had predicted – that the Alfvén critical surface isn't shaped like a smooth ball. Rather, it has spikes and valleys that wrinkle the surface.

### **What is Solar Corona & Coronal Heating?**

- The mysterious outer region of the Sun consists of hot and highly diffuse plasma, ionized gas at temperatures that exceed one million Kelvin, much higher than the photospheric temperature of 6,000 Kelvin, the visible surface temperature of the Sun.
- The most mysterious and crucial puzzle related to the sun is its temperature. The ionized gas temperature at the core of the Sun reaches up to 15 million degrees Celsius, which drops to mere 5,700 degrees at the solar surface (photosphere). But the temperature starts to increase again above the photosphere with a height reaching one million degrees or more in the corona. The increase or rise of temperature in Corona despite moving away from the source of energy is against the natural expectation that the temperature should be reduced. Scientists have termed this phenomenon as a 'Coronal Heating Problem'.
- Also, the Sun is a magnetized star and the active regions above the Sunspots have stronger magnetic fields. It is suggested that magnetic fields play a crucial role in coronal heating. There are different theories governing this mechanism but one of the theories relies on the occurrence of many small solar flares which are known as 'nanoflares'. Another observation about the corona suggests that certain elements are found to have abundances three to four times higher in active regions than in the photosphere. This happens for elements that are easier to ionize.

### **5.12 DRDO launches 5 lethal missiles in 10 days**

- With a vision to empower the Indian defence ecosystem, the R&D wing of the Ministry of Defence, Defence Research Development Organisation (DRDO) has been developing cutting-edge defence technologies.

- These state-of-art defence technologies not only takes India towards self-reliance in critical areas but it also equips our armed forces with latest defence arsenals in accordance with the requirements laid down by the three Services.
- DRDO's pursuit of self-reliance and successful indigenous development and production of strategic systems and platforms have given quantum jump to India's military might.
- Acting on the same ethos, DRDO has launched five lethal missiles in the last 10 days. These projectiles include, long-range Supersonic Missile Assisted Torpedo (SMART), Stand-off Anti-tank (SANT) Missile, Extended Range Pinaka (Pinaka-ER) Multi Barrel Rocket Launcher System, Air version of BrahMos supersonic cruise missile, and Short Range Surface to Air Missile.

### **Lethal missile developed by DRDO**

#### **1) Supersonic missile for Indian Navy**

- Giving a major strength to the Indian Navy, Defence Research and Development Organisation (DRDO) successfully launched a long-range Supersonic Missile Assisted Torpedo (SMART) off the coast of Balasore in Odisha on 13th December, 2021.
- The next generation missile-based standoff torpedo delivery system has been developed and designed to give fillip to anti-submarine warfare capability of the Indian Navy. Notably, the missile can strike a target far beyond the conventional range of the torpedo.
- Torpedo is a self-propelled underwater explosive device launched above or below the water surface with an explosive warhead to eliminate a target.

#### **Deciphering SMART's efficiency**

- During the launch of the supersonic missile, the entire trajectory was monitored through the electro optic telemetry system along with several range radars, including the down range instrumentation and down range ships.
- The canister-based missile system comprises advanced technologies viz. two stage solid propulsion, precision inertial navigation and electro-mechanical actuators.
- Notably, several DRDO laboratories worked together to develop various technologies for the advanced missile system. Further, Industry participation was also there for the development and production of various sub-systems.

#### **2) Stand-Off Anti-Tank Missile**

- DRDO and Indian Air Force (IAF) flight-tested the indigenously designed and developed Stand-off Anti-tank (SANT) Missile from Pokhran ranges in Rajasthan on December 11, 2021.
- The flight-test from a helicopter, which was successful in meeting all its mission objectives. The missile is equipped with a state-of-the-art Millimetre wave (MMW) seeker which provides high

precision strike capability from a safe distance. The weapon can neutralise targets in a range up to 10 kms.

### **3) Pinaka-ER Range System**

- A series of successful tests of the Pinaka Extended Range (Pinaka-ER), Area Denial Munitions (ADM) and indigenously developed fuzes recently conducted at various test ranges.
- The tests, which lasted 3 days, were conducted for the Pinaka-ER Multi Barrel Rocket Launcher System at Pokhran Range in Rajasthan.
- The Ministry of Defence in an official statement said, "The DRDO, along with the Army, conducted a series of performance evaluation trials. In these trials, enhanced range Pinaka rockets were test-fired at different ranges with various warhead capabilities. All the trial objectives were met satisfactorily. 24 rockets were fired for different ranges and warhead capabilities to meet the objectives of accuracy and consistency."
- With the series of tests, the initial phase of technology absorption of the Pinaka-ER (enhanced range) marks the successful completion by the industry partners, making the enhanced and upgraded rocket system ready for further production.
- It is pertinent to note that the system is jointly designed by laboratories of the Defence Research and Development Organisation (DRDO), Armament Research & Development Establishment (ARDE), Pune and High Energy Materials Research Laboratory (HEMRL), Pune.

### **4) Air version of BrahMos supersonic cruise missile**

- Giving a major boost to Indian Defence Forces, Air version of supersonic cruise missile 'BrahMos' was successfully test fired from supersonic fighter jet Sukhoi 30 MK-I from Integrated Test Range, Chandipur in Odisha on 8th December 2021.
- The missile launched from Sukhoi 30 MK-I followed the pre-planned trajectory, meeting all targeted objectives. The launch of BrahMos supersonic cruise missile is a major achievement in the BrahMos development as the development has cleared the system for the serial production of air-version BrahMos missiles within India.
- Notably, major airframe assemblies which comprise the integral part of the Ramjet Engine are indigenously developed by Indian Industry. These integral parts include metallic and non-metallic air frame sections consisting, Ramjet fuel tank and pneumatic fuel supply system. During the test, the structural integrity and functional performance have been proven.

### **5) Short Range Surface to Air Missile**

- Vertical Launch Short Range Surface to Air Missile was successfully flight tested by DRDO. The launch of the system was conducted to validate integrated operation of all weapon system components including the vertical launcher unit with controller, canisterised flight vehicle, weapon control system among others.

- It will also full fill the requirement for future launches of the missile from Indian Naval Ships.

### 5.13 **RM Rajnath Singh directs DRDO to develop Hypersonic Weapons for India**

- As Russia, US and China actively engage in building aerodynamically manoeuvrable hypersonic weapons, Defence Minister Rajnath Singh has directed DRDO to begin inching towards developing arsenals that can assist India in maintaining a minimum credible deterrence against adversaries.



- The minister conveyed this while speaking at a DRDO event. Highlighting the growing robustness of ballistic missile defence systems, RM Rajnath Singh said, "...Ballistic missile defence are getting robust day by day. So, in order to maintain our minimum credible deterrence, we should quickly think about developing hypersonic cruise missiles. It will be a revolutionary step in our defence sector and we all have to put our efforts into it."

### **Testing the HSTDV**

- In line with such a direction, India is preparing to carry out another test of its hypersonic technology demonstrator vehicle (HSTDV) that uses scramjet engine, by early next year, say media reports. The HSTDV was first tested in September 2020. The hypersonic vehicle serves as an important building block in making long range hypersonic weapons, which will become a reality in at least another four-five years.

### **Hypersonic Weapons**

- Hypersonic weapons are manoeuvrable (easy to move and direct) weapons that can either be a glide vehicle launched or a scramjet-powered cruise missile. These weapons can fly at speeds of Mach 5, i.e. five times the speed of sound.
  - The speed of sound is Mach 1
  - Speeds upto Mach 5 fall in the "Supersonic" category
  - Speeds above Mach 5 fall in the "Hypersonic" category

- These weapons fly within the atmosphere and have an ability to manoeuvre midway. This, combined with their high speed, makes it hard for the opponent entities to detect and intercept them. It becomes difficult for radars and air defence systems to spot these weapons until they are already very close to the targets.
- At the event, the Defence Minister also formally handed over to the armed forces an indigenous anti-drone 'system smart anti-airfield weapon' (SAAW), modular bridge and advanced chaff variants.

#### **5.14 Responsible AI for Youth: Scaling up the ambitious Digital India project**

- In a bid to ensure inclusive economic growth & social development in this new age, considering the advent of technology; the government is working relentlessly on creating comprehensive national AI strategies to create a sustainable and positive impact on its citizens, industries, and overall societies. Realising the Centre's ambitious Digital India Programme, the Ministry of Electronics, and Information Technology (Meity) has proposed as many as 20 AI (Artificial Intelligence) – based projects under the 'Responsible AI for Youth programme,' a programme designed to reach out to students from Government schools pan India and provide them with an opportunity to become part of the skilled workforce.
- The Union Ministry has also announced to felicitate as many as 27 Government school students representing these projects from across the country. Among those being felicitated, were part of the programme designed by the National e-Governance Division, Meity and Intel.

#### **Building Safe & Inclusive Digital Infrastructure: Responsible AI for Youth**

- With the objective of providing children in government schools an opportunity to get along with a digital-first mindset, skillset, and toolset; the 'Responsible AI for Youth' programme was commenced last year in May 2020. The programme also intends to bridge the skill gap, while enabling youth to create meaningful social impact solutions. A platform has been created to make the next generation digitally ready for the future.
- It is pertinent to note that the programme was commenced by the Ministry of Electronics & IT in collaboration with Intel India, with the aid of the Ministry of Human Resource Development. Intel's efforts are directed with institutions including the Central Board of Secondary Education (CBSE) under the Ministry of Education and subsequently under National e-Governance Division under the Meity to help spread the reach of Artificial Intelligence 'Know-How' to empower the young generation.

#### **Implementation of the Programme**

- The programme titled 'Responsible AI for Youth' was carried out in a phase-wise manner. Carried out in three phases, phase-1 reached out to 52,628 students from 35 States and Union Territories. So far, about 11,466 students have completed the first level of AI training. It is interesting to note

that these AI projects offered intriguing solutions to queries from various sectors, ranging from Agriculture to Health and from Traffic to Education.

### **Empowering the Gen-Next**

- It is not a hidden fact that technology can be a great enabler for improving life all around! The launch of the programme will ultimately aid in developing the foundation of Artificial Intelligence in the country. The AI approach will also help for inclusion and empowerment of people in India by supplementing inclusive growth and development especially in the field of Education, Agriculture, healthcare, e-commerce, finance, telecommunications etc. Hence, the commencement of the Responsible AI for Youth programme is expected to find innovative long-term solutions which will in turn help reduce the existing digital gap in India.

### **What is Artificial Intelligence**

- “AI is going to change the world more than anything in the history of mankind. More than electricity.”— AI oracle and venture capitalist Dr Kai-Fu Lee, 2018
- Artificial Intelligence can be understood as the ability of a digital computer to perform tasks commonly associated with intelligent – intellectual beings. You might have heard the term frequently used with the projects where systems are developed with the intellectual processes including – the ability to reason, discover meaning, generalising, pattern recognition, big data, neural networks, self-algorithms, etc.

#### **5.15 ISRO, Oppo India collaborate to ramp up messaging service in oceans**

- To strengthen the Research and Development (R&D) of NavIC or the Indian Regional Navigation Satellite System (IRNSS) messaging service, the Indian Space Research Organisation has signed a pact with Oppo India.
- NavIC is a messaging service platform, which provides regional navigation services covering the entire country and an area up to 1,500 km beyond the Indian boundaries.
- Notably, the messaging platform primarily provides PNT (position, navigation, and timing) services along with the capability of broadcasting short messages (safety-of-life alerts) in areas with poor or no communication, particularly in oceans.
- As per the Memorandum of Undertaking (MoU), both ISRO and Oppo India will exchange technical information of NavIC messaging services to build rapid, ready-to-use, end-to-end application-specific solutions. This will enable integrating NavIC messaging service with the mobile handset platform keeping in mind the need of Indian users.
- “The memorandum will pave the way for future collaborations between ISRO and Oppo India to develop indigenous solutions by incorporating the NavIC short messaging feature in the smartphones released by OPPO India,” a statement by Oppo India mentioned.



**Deciphering NavIC**

- Independent regional navigation satellite system (IRNSS) or NavIC is an independent regional navigation satellite system designed to provide accurate position information service to users in India as well as the region extending up to 1500 km from Indian boundaries.
- The platform provides two types of services, namely, Standard Positioning Service (SPS) which is provided to all the users, and Restricted Service (RS), which is an encrypted service, provided only to the authorised users.

**Some applications IRNSS provide are**

- Terrestrial, Aerial, and Marine Navigation
- Disaster Management
- Vehicle tracking and fleet management
- Integration with mobile phones
- Precise Timing
- Mapping and Geodetic data capture
- Terrestrial navigation aid for hikers and travellers
- Visual and voice navigation for drivers

**Scaling the indigenous R&D capacities**

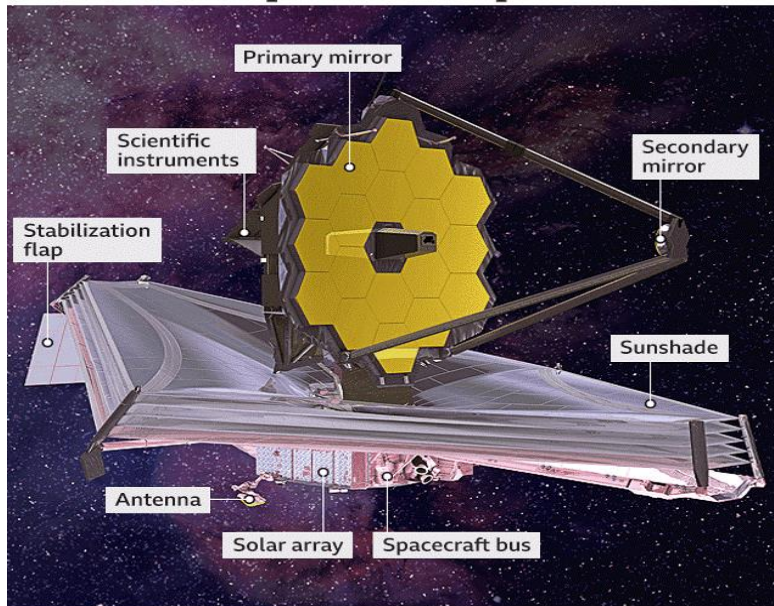
- In line with the Make-in-India, ISRO will lead the industry-ready R&D capabilities to provide a seamless experience to the users of the NavIC application. Further, OPPO will also ramp up its competitive and experienced R&D team for the messaging platform.
- ISRO chairperson, K Sivan appreciated the efforts of OPPO India in scaling NavIC applications through their innovative R&D initiatives and urged to include NavIC in all their upcoming mobile platforms that use location-based solutions.

**5.16 James Webb Telescope**

- World's most powerful space telescope was launched on December 25, 2021 with an aim to peak into the primitive universe.
- It is a joint mission of NASA, ESA (European Space Agency) and the Canadian Space Agency. It is a worthy successor to Hubble Space Telescope.

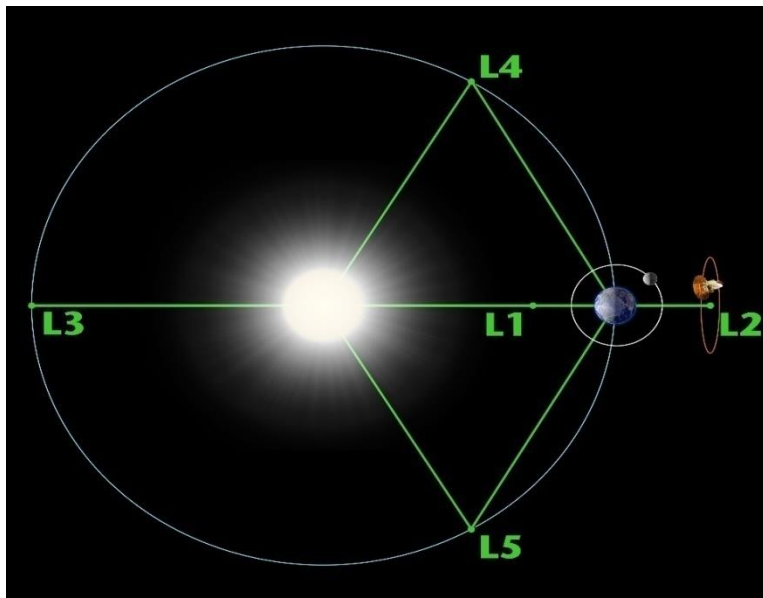


## James Webb Space Telescope



Source: Nasa

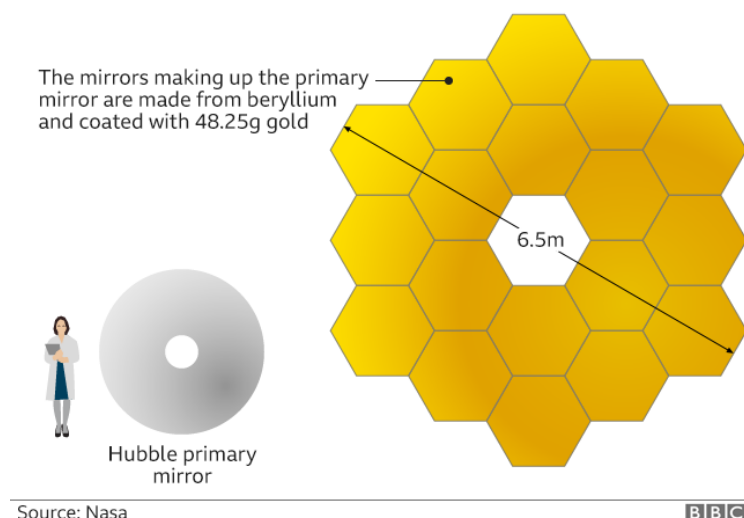
BBC



The telescope will be launched by the Ariane V rocket from French Guiana in South America. It will be placed at the L2 point of Sun-Earth system.

### Goal

- To search for the first galaxies that formed after the Big Bang.
- To determine how galaxies evolved from their earlier formation until now.
- To observe the formation of stars from the first stages to the formation of planetary systems.
- To measure the physical and chemical properties of planetary systems and investigate the potential for life in such systems.

**Webb Vs Hubble Telescope:****James Webb Space Telescope primary mirror is 6.5 metres wide****Wavelength**

- The JWST will observe primarily in the infrared range and provide coverage from 0.6 to 28 microns. The instruments on Hubble see mainly in the ultraviolet and visible part of the spectrum. It could observe only a small range in the infrared from 0.8 to 2.5 microns.
- The infrared region of the electromagnetic spectrum covers the wavelength range from approximately 0.7 to a few 100 microns.

**Size**

- Webb's primary mirror has a diameter of 6.5 metres while Hubble's mirror was much smaller – 2.4 metres in diameter.
- So, Webb will have a larger field of view compared to the camera on Hubble.
- Webb also carries a large sun shield.

**Distance**

- Webb's near- and mid-infrared instruments will help study the first formed galaxies, exoplanets and birth of stars.
- Hubble can see the equivalent of "toddler galaxies" while Webb Telescope will be able to see "baby galaxies".

**5.17 National Mathematics Day 2021**

- December 22 marks the National Mathematics Day every year. In 2012, then Prime Minister Manmohan Singh declared the date as National Mathematics Day to commemorate the birth anniversary of the great Indian mathematician Srinivasa Ramanujan.

**Who is Srinivasa Ramanujan?**

- Born on December 22, 1887, in Erode, Tamil Nadu, Ramanujan grew up in a Tamil Brahmin Iyengar family. He completed his education at the Government College in Kumbakonam in 1903 and would often fail non-mathematical subjects.
- Ramanujan is said to solve Loney's Trigonometry at the age of 13 without any help.
- In 1912, Ramanujan began working as a clerk in the Madras Port Trust, where his talent of a penchant for maths was first recognised by a colleague. The fellow colleague and mathematician then referred him to Professor GH Hardy of Trinity College, Cambridge University.
- He joined Trinity College and received his Bachelor of Science and became the first Indian to be elected a Fellow of Trinity College in 1918.
- He was also elected to the London Mathematical Society in 1917 and was a fellow of the Royal Society for his research on Elliptic Functions and the theory of numbers.
- Ramanujan had independently discovered his theorems and compiled about 3,900 results.
- After returning to India in 1919, he breathed his last at the age of 32.
- In 2015, the movie 'The Man Who Knew Infinity', which cast Dev Patel, was released to honour the journey of Srinivasa.

**Ramanujan Award**

- The Ramanujan Prize for Young Mathematicians from Developing Countries is annually awarded by the International Centre for Theoretical Physics in Italy. Founded in 2004, the award was first given in 2005 to Marcelo Viana from Brazil.
- The prize is awarded to a researcher, less than 45 years old, in the field of mathematician from a developing country. The prize is supported by the Indian Ministry of Science and Technology and

the Norwegian Academy of Science and Letters through the Abel Fund, with the cooperation of the International Mathematical Union.

### **Indians Who Were Honoured with Ramanujan Award**

To date, a total of four Indians have been the proud recipient of the Ramanujan award.

1. **Sujatha Ramdorai:** Ramdorai became the first Indian and woman to win the prestigious Ramanujan Prize in 2006.
2. **Amalendu Krishna:** Krishna became the second Indian to receive the Ramanujan Prize in 2015.
3. **Ritabrata Munshi:** Munshi from Kolkata became the third Indian to receive the Prize in 2018.
4. **Neena Gupta:** Gupta from the city of joy, became the third woman globally to win the Ramanujan Prize in 2021.

### **5.18 Making India A Tech-Leader**

- Every time a technology giant chooses an India-born techie as its leader, there is a justifiable swelling of pride in the country, but also some disappointment.
- Despite having so many celebrated technologists around the world, India is still not a major player in technology. This failure can be attributed to lower public spending, high imports and brain drain.
- India's excellent bilateral relations with global tech leaders like the US and Japan can be leveraged for India's technology revolution. Besides, more public spending in R&D and in tertiary education is required to make India one of the leading countries in terms of technology.

### **Role of Government in Global Tech Leaders**

US as Global Technology Leader: Undoubtedly, the U.S. is a country of fabled opportunities but its credit cannot be given to the private sector only. An invisible hand of the government has also been there.

- Public sector funding developed the algorithm that eventually led to Google's success.
- It also helped discover the molecular antibodies that provided the foundation for biotechnology.
- The governmental agencies were proactive in identifying and supporting the more uncertain phases of the research, which a risk-averse private sector would not have entered into.

The Case of China: The role of the government has been even more prominent in shaping the economic growth of China. It has succeeded by combining the strengths of the public sector, markets and globalisation.

- China's state-owned enterprises (SOEs) were seen as inefficient and bureaucratic, however, rather than privatising them or letting them weaken, China restructured its SOEs.
- The state left the fields like light manufacturing and export-oriented sectors open for the private sector and strengthened its presence in strategically important sectors (petrochemicals, telecommunication, electronics etc).

**India and the Tech World**

- India's Initial Efforts for Tech Revolution: India's effort for planning and industrialisation in the early 1950s was possibly the most ambitious of such initiatives in the developing world.
- Public sector funding of the latest technologies of the time including space and atomic research and the establishment of institutions such as the IITs were among the hallmarks of that effort.
- In terms of growth in IT and pharmaceutical industries, the development has been the fastest in Bengaluru and Hyderabad.

**Achievements in STEM Education**

- India possesses favourable supply and demand factors that can propel it into the frontlines of technology.
- The number of persons enrolled for tertiary education in India (35.2 million in 2019) is way ahead of the corresponding numbers in all other countries except China.
- As per UNESCO, graduates from STEM programmes (as a proportion of all graduates) was 32.2% for India in 2019, one of the highest among all countries.

**Issues Associated with Tech Development of India**

- Brain-Drain: India's failures are linked to its inability to make use of the market-driven growth opportunities consequently leading the talented people out to countries like the U.S. for job opportunities.
- As of 2019, there were 2.7 million Indian immigrants in the U.S who are among the most educated and professionally accomplished communities in that country.

**Gradual Decline in R&D Spending**

- In 1991, when India embraced markets and globalisation, it should have redoubled efforts to strengthen its technological capabilities.
- However, the spending on research & development as a proportion of GDP declined in India (0.85% in 1990-91 to 0.65% in 2018).
- In contrast, this proportion increased over the years in China and South Korea to reach 2.1% and 4.5%, respectively, by 2018.
- Lesser Public Spending for Tertiary Education: An overwhelming proportion of tertiary students in India are enrolled in private institutions.
- According to the Organisation for Economic Cooperation and Development (OECD), It was 60% for those enrolled for a bachelor's degree in 2017, while the average for G20 countries was 33%.
- High Import of Electronic Items: India is a large market for all kinds of new technologies. However, the domestic industry has not yet managed to derive the benefits.

- The country is operating far below its potential in electronic manufacturing; electronic goods and components are the second largest item in India's import bill after oil.
- As of 2020-21, India's imports are almost five times its exports in this technology sector.

### Way Forward

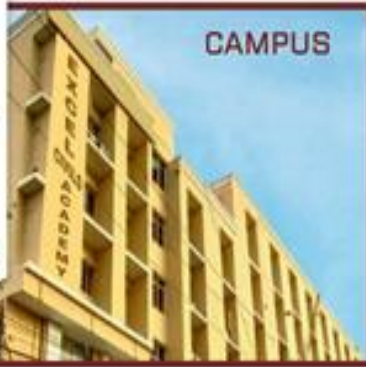
- **Role of Government:** The government has a crucial role to play in positioning India as the Tech Garage of the World. It should act as a catalyst, and bring together the synergies of the private sector with the aim of innovating for India and the world.
- The product development should ideally be undertaken through private entrepreneurship, with the government acting as a facilitator.
- **More Public Spending on Education:** The 'Make in India' initiative will have to go beyond increasing the 'ease of business' for private industry. Indian industry needs to deepen and broaden its technological capabilities.
- This will happen only if universities and public institutions in the country are strengthened and emboldened to enter areas of technology development for which the private sector may have neither the resources nor the patience.
- **Strengthening the Public Sector:** A strengthened public sector will create more opportunities for private businesses and widen the entrepreneurial base.
- Small and medium entrepreneurs will flourish when there are mechanisms for the diffusion of publicly created technologies, along with greater availability of bank credit and other forms of assistance.
- **Utilising the 'Techade' up to its Maximum Potential:** The "techade" is a portmanteau of technology and decade. Technology is going to be the key driver of the global economy in the next 20 years.
- To take full advantage of the techade, India will need to play a constructive role in joining and shaping global standards that are currently in evolution –around privacy, data localisation, tax laws, the definition of monopolies, cyber security, immigration and predictability of regulations.
- **Role of the Indian Diaspora:** The Indian diaspora who has mostly settled in Silicon Valley has played a very significant role by acting as the bridge between the Indian skills, human resources and the American technology requirements.
  - Indian diaspora, IIT, BITS or NIT alumni in particular, can play a very crucial role in acting as a mentor to the young talents as they already have the experience and know what the advanced technologies and other developed countries want.
- **India-US Technology Partnership:** The US companies want access to India's data, talent, and consumers. India should also make efforts for an Indo-US technology partnership decade.

- India and the US can collaborate in making the next generation of quantum computers, achieving breakthroughs in the use of Artificial Intelligence (AI), making genome sequencing and analysis affordable etc.
- A technology partnership can ignite rapid growth and set India up well for the future. Besides, India's good bilateral relations with other technologically developed countries like Japan and Israel can also be leveraged.

**Conclusion**

- India has the potential to occupy the upper echelons of the global technology ladder. What is required is that the PSUs in India should be valued for their potential long-term contributions to economic growth, the technologies they can create, and the strategic and knowledge assets they can build.





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