



**EXCEL**  
CIVILS ACADEMY

EMPOWERING FUTURE LEADERS

# EXCEL QUEST

VOLUME - 39, MARCH 2023



RUSSIA SUSPENDS NEW START



21 LARGEST UNNAMED ISLANDS OF ANDAMAN & NICOBAR NAMED  
AFTER 21 PARAM VIR CHAKRA AWARDEES



THE G20 MUST HELP RESOLVE DEBT  
CRISES ACROSS THE WORLD



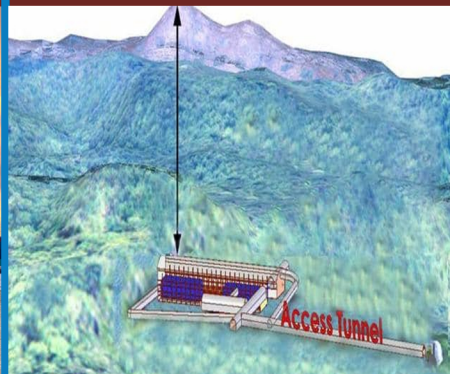
MEMORANDUM OF UNDERSTANDING SIGNED TO FACILITATE  
LOW INTEREST RATE LOANS TO FARMERS



WORLD'S LONGEST RIVER CRUISE - MV GANGA VILAS



MAKING INDIAN LOGISTICS GLOBALLY COMPETITIVE



INDIAN NEUTRINO OBSERVATORY



CYCLONE MANDOUS

A Monthly Magazine from  
**EXCEL CIVILS ACADEMY**  
NTR Bhavan, Rd. No. 2, Banjara Hills, Hyderabad.  
Contact: 91004 33442, 91004 33445

[www.excelacademy.com](http://www.excelacademy.com)

## Director's Message

Dear Aspirants,

The Indian Parliament has been rocked by controversy in recent weeks over the issue of the Joint Parliamentary Committee (JPC) investigating the alleged Adani scam. The accusations by Congress leader Rahul Gandhi that the government was trying to protect Gautam Adani, a powerful Indian businessman, by preventing the JPC from conducting a fair investigation have sparked this controversy. The issue has raised questions about the integrity of the Indian political system, and the role of business interests in shaping government policy.

The JPC was formed in August 2021 to investigate allegations of wrongdoings by the Adani Group, one of the largest business conglomerates in India. The allegations relate to the company's involvement in the development of the Mundra Port and Special Economic Zone (MPSEZ) in Gujarat, which was initiated in 2006. The project has been tangled in controversy ever since, with accusations of environmental damage, land grabs, and human rights abuses. The JPC was formed to investigate these allegations and to recommend punitive action if necessary.

However, the JPC's work has been hampered by accusations of bias and interference. In particular, Rahul Gandhi has accused the government of trying to protect Gautam Adani by preventing the JPC from conducting a fair investigation. He has alleged that the government has stacked the JPC with members who are supposedly sympathetic to Adani, and has prevented the committee from calling witnesses or obtaining documents that might provide incriminating evidence against the company. Gandhi has further accused the government of using its influence to prevent the JPC from completing its work within the stipulated time frame.

The controversy has divided opinion in the Indian Parliament, with the ruling Bharatiya Janata Party (BJP) denying any wrongdoing and accusing the Congress of using the issue for political gains. The Congress, on the other hand, has accused the BJP of being in the pocket of big business houses and of using its power to shield Gautam Adani from scrutiny. The issue has also raised broader questions about the influence of business interests in Indian politics, and the need for greater transparency and accountability.

At the heart of the controversy is the issue of corporate power in India. Adani Group is one of the most powerful and influential companies in the country, with interests in infrastructure, energy, mining, and logistics. The company has close ties to the ruling BJP, and is seen by many as a symbol of the close relationship between big business and politics in India. The allegations of impropriety against Adani have

therefore taken on a wider significance, as a test case for the ability of the Indian political system to hold powerful corporations to account for their misdeeds and corrupt practices.

The controversy has also highlighted the importance of transparency and accountability in government. The JPC was formed with the aim of investigating allegations of corruption and wrongdoing, but its work has been hampered by allegations of bias and interference. This has raised broader questions about the effectiveness of the Joint Parliamentary Committees and the Indian political system as a whole in holding those in power to account. If the JPC is unable to conduct a fair and impartial investigation, then it raises questions about the ability of the Indian political system to protect the interests of ordinary citizens.

The controversy has also raised questions about the role of the media in shaping public opinion. The Indian media has been divided over the issue, with some outlets taking a pro-government stance and others supporting Rahul Gandhi's allegations. This has led to accusations of bias and manipulation, and has highlighted the need for greater transparency and accountability in the media.

In conclusion, the JPC controversy has highlighted the importance of transparency, accountability, and integrity in government. The allegations of impropriety against Adani Group are a test case for the ability of the Indian political system to hold powerful corporations to account. The controversy has also raised broader questions about the influence of big business in Indian politics, and the need for greater transparency and accountability. Ultimately, the JPC's ability to conduct a fair and impartial investigation will be a test of the Indian political system's ability to protect the interests of ordinary citizens.

Best wishes,

Yours sincerely,



K Rajendra Kumar IPS (Retd)

## TABLE OF CONTENT

|  |              |
|--|--------------|
| <b>1. NATIONAL .....</b>   | <b>1-13</b>  |
| 1.1 World’s Longest River Cruise - MV Ganga Vilas  |              |
| 1.2 Archaeological Survey of India all set to begin excavation at Purana Qila again  |              |
| 1.3 UIDAI deliberates on five focus areas including resident centricity and facilitating ‘Ease of Living’                                      |              |
| 1.4 21 largest unnamed islands of Andaman & Nicobar Islands named after 21 Param Vir Chakra awardees   |              |
| 1.5 Theatre Level Operational Readiness Exercise (Tropex-23) Indian Navy’s Largest War Game  |              |
| 1.6 21st EDITION OF INDIA FRANCE BILATERAL NAVAL EXERCISE ‘VARUNA’ – 2023  |              |
| 1.7 Study explains migration events that brought genetic diversity among Nepalese population   |              |
| 1.8 Ministry of Education releases All India Survey on Higher Education (AISHE) 2020-2021  |              |
| 1.9 Government is proactively supporting the aviation sector by providing a stable policy environment and incentivising competition led growth |              |
| 1.10 National Mission For Clean Ganga  |              |
| <b>2. INTERNATIONAL RELATIONS .....</b>  | <b>14-36</b> |
| 2.1 About India – South Korea bilateral relations  |              |
| 2.2 International Courts and Climate Change  |              |
| 2.3 The Ukraine War has shaken up a Delicate Post-Cold War Order   |              |
| 2.4 Europe’s Post-Cold War Security Landscape  |              |
| 2.5 Russia suspends New START  |              |
| 2.6 Rebuilding India-Us Trade Ties   |              |
| 2.7 The G20 must help resolve debt Crises across the World   |              |
| 2.8 Indian Air Force’s revised Doctrine adopts a Holistic Approach to the Country’s Security Imperatives                                       |              |

**2.9** Exploring the Blue in India-France Partnership

**2.10** Two Years after Myanmar Coup: Let's not Forget Rohingya Refugees Adrift at Sea

**3. INDIAN ECONOMY.....37-48**

**3.1** Memorandum of Understanding signed to facilitate low interest rate loans to farmers

**3.2** ECONOMIC SURVEY 2022-23: HIGHLIGHTS

**3.3** State of the Economy 2022-23: Recovery Complete

**3.4** India's Medium Term Growth Outlook: with Optimism and Hope

**3.5** Fiscal Developments: Revenue Relish

**3.6** Monetary Management and Financial Intermediation: A Good Year

**3.7** Social Infrastructure and Employment: Big Tent

**3.8** Climate Change and Environment: Preparing to Face the Future

**3.9** Agriculture and Food Management

**3.10** Industry: Steady Recovery

**3.11** External Sector

**3.12** Physical and Digital Infrastructure

**3.13** Making Indian Logistics Globally Competitive

**3.14** India's Digital Public Infrastructure

**4. ENVIRONMENT .....49-57**

**4.1** NEW PLATEAU TYPE DISCOVERED IN MAHARASHTRA

**4.2** GOVERNMENT-MODIFIED WILDLIFE FUND RULES FOR KEY INFRA PROJECTS

**4.3** Global status of black soil: Report of FAO (Food and Agricultural Organization).

**4.4** UNITED NATIONS (UN) WATER SUMMIT ON GROUNDWATER (GW) 2022

**4.5** Indian Star Tortoise

**4.6** Revised draft of standards for firms to self-report environmental impact

**4.7** Cyclone Mandous

**4.8** The Wildlife (Protection) Amendment Act, 2022

**5. SCIENCE & TECHNOLOGY.....58-65**

**5.1** SITE-DIRECTED NUCLEASE (SDN) TECHNOLOGY

**5.2** Quantum Key Distribution Technology

**5.3** Indian Neutrino Observatory

**5.4** Human Immunodeficiency Virus (HIV)

## 1. NATIONAL

### 1.1 World's Longest River Cruise - MV Ganga Vilas

- It is the world's longest river cruise.
- The luxury cruise will cover more than 3,200 kilometres across 27 river systems in five States in India and Bangladesh.
- The MV Ganga Vilas cruise is curated to bring out the best of the country to be showcased to the world.
- The 51 days cruise is planned with visits to 50 tourist spots including World Heritage Sites, National Parks, River Ghats, and major cities like Patna in Bihar, Sahib Ganj in Jharkhand, Kolkata in West Bengal, Dhaka in Bangladesh and Guwahati in Assam.
- The MV Ganga Vilas vessel is 62 meters in length, 12 meters in width.
- It has three decks, 18 suites on board with a capacity of 36 tourists, with all the amenities to provide a memorable and luxurious experience for the tourists.
- The ship is equipped with pollution-free mechanisms and noise control technologies.
- The maiden voyage of MV Ganga Vilas will witness 32 tourists from Switzerland relishing the Varanasi to Dibrugarh journey.
- The development of this sector would generate employment opportunities in the hinterland. The river tourism circuits will be developed and integrated with the existing tourism circuits for maximum exposure and rapid development of this sector in the country.

### 1.2 Archaeological Survey of India all set to begin excavation at Purana Qila again

#### Highlights

- This season's excavation, focuses to accomplish the traces of Painted Grey Ware finding in stratigraphical context
- This is the third season of excavation at Purana Qila.
- The Archaeological Survey of India (ASI) is all set to begin excavation at Delhi's Purana Qila again. The excavation will be led by Shri Vasant Swarnkar and would be the third season of excavation at Purana Qila after excavations in the year 2013-14 & 2017-18.
- The objective of the latest excavation is the exposure and preservation of the trenches that were excavated in the previous years (2013-14 & 2017-18). During the closure of the previous season's excavation, evidence of layers predating the Mauryan period was found. During this season's excavation, focus would also be to accomplish the traces of Painted Grey Ware finding in stratigraphical context.

Identified as ancient settlement of Indraprastha, a continuous habitation of 2500 years at Purana Qila was established in earlier excavations.

- The findings and artefacts unearthed in earlier excavations comprises painted grey ware, belonging to 900BC, an earthen pottery sequence from Maurya to Shunga, Kushana, Gupta, Rajput, Sultanates and Mughal periods. Excavated Artefacts such as sickles, parers, terracotta toys, kiln- burnt bricks , beads , terracotta figurines, seal and dealings etc. excavated earlier are now displayed at the Archaeological Museum inside the fort complex.
- Purana Qilla, the 16th-century fort, was built by Sher Shah Suri and second Mughal emperor Humayun. The fort is standing on a site with thousands of years of history. Padma Vibhushana Prof. BB Lal also carried out excavation works inside the fort and its premises in the year 1954 and 1969 -73.

### **1.3 UIDAI deliberates on five focus areas including resident centricity and facilitating ‘Ease of Living’**

- As Aadhaar saturation has reached near universal among adult population, the Unique Identification Authority of India (UIDAI) deliberated on and decided to work on five core areas to provide continued support to residents in their daily lives, further enhance data security, and play a stellar role in furthering the cause of good governance.
- The five core areas are – resident centricity, expanding the usage of Aadhaar, security and privacy, continuous technology upgradation, and collaborate with global economies and support them in their aspiration to achieve SDG 16.9 (provide legal identity for all).
- These five focus areas were deliberated in a daylong brainstorming session at Kevadia (Gujarat). Dr. Saurabh Garg, CEO, UIDAI maintained that there is and will always be a continuous focus on how to support residents in improving ease of living, and better their experience in availing services.
- The Authority is constantly exploring and adopting ways to expand the use of Aadhaar for both ease of living as well as ease of doing business. Its sandbox environment will allow startups, professionals, and companies to explore and test innovation applications for increasing the use of Aadhaar. From expanding e-KYC adoption to popularizing offline verification for better service delivery to residents, UIDAI will strive to expand use of Aadhaar in multiple ways.
- Aadhaar has emerged as a tool of good governance, of empowerment and service delivery. Since the first Aadhaar number was generated in 2010, UIDAI has issued over 1.35 billion Aadhaars and has carried out more than 88 billion authentication transactions so far, indicative of how it is touching resident’s lives. UIDAI has also executed over 710 million Aadhaar updations following requests from residents since 2010.
- UIDAI will be at the forefront of technology up-gradation to further enhance data security and privacy, seamless service delivery, and proactively address new-age cyber security risks.



- UIDAI also urged residents who have got their Aadhaar issued 10 years back and have never updated after that in these years, to get their documents updated. Residents can update their Aadhaars by uploading supportive documents, (proof of identity and proof of address) either online through myAadhaar portal or offline by visiting the nearest Aadhaar centre.

#### **1.4 21 largest unnamed islands of Andaman & Nicobar Islands named after 21 Param Vir Chakra awardees**

- Unveils model of National Memorial dedicated to Netaji to be built on Netaji Subhas Chandra Bose Dweep
- Keeping in mind the historical significance of the Andaman & Nicobar Islands and to honour the memory of Netaji Subhas Chandra Bose, Ross Islands was renamed as Netaji Subhash Chandra Bose Dweep by the Prime Minister during his visit to the Island in 2018. Neil Island and Havelock Island were also renamed Shaheed Dweep and Swaraj Dweep.
- Giving due respect to the real-life heroes of the country has always been accorded the highest priority. Going ahead with this spirit, it has now been decided to name the 21 largest unnamed islands of the island group after 21 Param Vir Chakra awardees. The largest unnamed island will be named after the first Param Vir Chakra awardee, the second largest unnamed island will be named after the second Param Vir Chakra awardee, and so on. This step will be an everlasting tribute to our heroes, several of whom made the ultimate sacrifice to protect the sovereignty and integrity of the nation.
- These islands have been named after the 21 Param Vir Chakra awardees. Major Somnath Sharma; Subedar and Hony Captain (then Lance Naik) Karam Singh, MM; 2nd Lt. Rama Raghoba Rane; Nayak Jadunath Singh; Company Havildar Major Piru Singh; Capt GS Salaria; Lieutenant Colonel (then Major) etc.
- Agriculture Infrastructure Fund crosses Rs.30,000 crore mark of capital mobilization for projects in agriculture sector for creation of post-harvest management infrastructure and community farming assets.
- Within two-and-a-half years of the implementation of the Agriculture Infrastructure Fund (AIF), the scheme has mobilized more than Rs.30,000 crore for projects in the agriculture infrastructure sector with a sanctioned amount of Rs.15,000 crore under AIF. With support of 3% interest subvention, credit guarantee support through CGTMSE for loan of upto Rs.2 crore and facility of convergence with other Central and State Govt. Scheme, AIF is providing all around financial support to the farmers, agri-entrepreneurs, farmer groups like Farmer Producer Organisations (FPOs), Self Help Groups (SHGs), Joint Liability Groups (JLGs) etc. and many others to create post-harvest management infrastructure and build community farming asset throughout the country.

**What is the Agriculture Infrastructure Fund?**

- Agriculture Infrastructure Fund is a central sector scheme that will enable a financing facility of Rs.1 lakh crore for funding agriculture infrastructure projects at farm-gate and aggregation points such as farmers producers organisations, primary agricultural cooperatives, startups and entrepreneurs in the agriculture sector.

**Need for Agriculture Infrastructure Fund**

- For approximately 58% of the people of the country, agriculture and allied activities are the chief sources of income. About 85% of farmers manage 45% of the agricultural land, being smallholder farmers (less than 2 hectares of land under cultivation). As such, the annual incomes of most of the farmers in the country are low.
- Low connectivity and limited infrastructure connecting farmers and markets mean that 15 – 20% of the output is wasted, which is much higher than in other countries. Investment in agriculture has also been stagnant.
- All the above factors mean that a scheme dedicated to improving post-harvest management infrastructure and farming infrastructure is the need of the hour.

**Agriculture Infrastructure Fund Objectives**

- The primary objective of the scheme is to provide financial support for agriculture entrepreneurs to improve agriculture infrastructure in India.

**Objectives for Farmers**

- Increase value realization by allowing farmers to sell directly to a larger base of consumers because of improved marketing infrastructure.
- Reduced post-harvest losses and a smaller number of intermediaries because of investment in logistics infrastructure. This will make farmers more independent and give them better access to markets.
- Improved realisation because of modern packaging and cold storage system access, since farmers would be able to decide when to sell.
- Community farming assets for improved productivity and optimization of inputs will result in substantial savings.

**Objectives for Government**

- Direct priority sector lending in the currently unviable projects by supporting through interest subvention, incentive and credit guarantee. This will boost innovation and private sector investment in agriculture.

- Due to improvements in post-harvest infrastructure, the government will further be able to reduce national food wastage percentage thereby enabling the agriculture sector to become competitive with current global levels.
- Structure viable PPP projects for attracting investment in agriculture infrastructure.

#### **Objectives for Agri Entrepreneurs and Startups:**

- Push for innovation in the agriculture sector using new technologies such as AI, IoT, etc.
- Improve avenues for collaboration between entrepreneurs and farmers.

#### **Objectives for the Banking Ecosystem**

- With Credit Guarantee, incentive and interest subvention, lending institutions will be able to lend with a lower risk.
- A greater role for cooperative banks and regional rural banks (RRBs) through refinance facilities.

#### **Objectives for Consumers**

- A larger share of the produce will reach the market and therefore, consumers will be able to benefit from better quality and prices.

### **1.5 Theatre Level Operational Readiness Exercise (Tropex-23) Indian Navy's Largest War Game**

- The 2023 edition of Indian Navy's major maritime exercise TROPEX, is currently underway in the Indian Ocean Region. This operational level exercise is conducted biennially and witnesses participation not only by all Indian Navy units but also of Indian Army, Indian Air Force and Coast Guard assets.
- TROPEX 23 is being conducted over a duration of three months from Jan - Mar 23. As part of the exercise, all surface combatants of the Indian Navy including Destroyers, Frigates, Corvettes as well as submarines and aircraft are put through complex maritime operational deployments to validate and refine the Navy's Concept of Operations including operational logistics and interoperability with other Services. The exercise is being conducted in different phases, both in harbour and at sea, encompassing various facets of combat operations, including live weapon firings.
- Having grown in scope and complexity over the years, this exercise provides an opportunity to test the combat readiness of the combined Fleets of the Indian Navy to operate in a multi-threat environment. The maritime exercise also facilitates operational level interaction with the Indian Army, Indian Air Force and the Coast Guard, which will further strengthen interoperability and joint operations in a complex environment.

### **1.6 21st EDITION OF INDIA FRANCE BILATERAL NAVAL EXERCISE 'VARUNA' – 2023**

- The 21st Edition of the Bilateral Naval Exercise between India and France – Exercise Varuna commenced on the Western Seaboard on 16 Jan 23. While the bilateral exercise between the two navies

were initiated in 1993, it was christened as 'VARUNA' in 2001 and has become a hallmark of India – France strategic bilateral relationship.

- This edition will witness participation of indigenous guided missile stealth destroyer INS Chennai, guided missile frigate INS Teg, maritime patrol aircraft P-8I and Dornier, integral helicopters and MiG29K fighter aircraft. The French Navy will be represented by the aircraft carrier Charles De Gaulle, frigates FS Forbin and Provence, support vessel FS Marne and maritime patrol aircraft Atlantique. The exercise had been conducted over five days from 16 to 20 January 2023 and witnessed advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment and other maritime operations. Units of both navies will endeavour to hone their war-fighting skills in maritime theatre, enhance their inter-operability to undertake multi-discipline operations in the maritime domain and demonstrate their ability as an integrated force to promote peace, security and stability in the region.
- Having grown in scope and complexity over the years, this exercise provides an opportunity to learn from each other's best practices. The exercise facilitates operational level interaction between the two navies to foster mutual cooperation for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the global maritime commons.

### **1.7 Study explains migration events that brought genetic diversity among Nepalese population**

- Tibeto-Burman communities were pre-historic Himalayan settlers, and their East Asian ancestry can be traced back to Neolithic immigration, mostly from Tibet around 8 KYA (Kilo Years Ago), says a genetic study of the population. The study, which reconstructs the maternal origins of prehistoric Himalayan populations, helps explain the genetic drift, endogamy, admixture, isolation, and natural selection that have contributed to genetic diversity among Nepalese population and sheds light on migration events that have brought most of the East Eurasian ancestry to the present-day Nepalese population.
- It is widely accepted that the modern human originated in Africa around 200000 years ago (KYA) and migrated out of Africa between 60 and 70 KYA. Several populations arose in this process, each with its own evolutionary history. Genetic drift, endogamy, admixture, isolation, and natural selection are a few evolutionary processes that have contributed to genetic diversity among human populations worldwide, including susceptibility and resistance to genetic diseases, infectious diseases, therapeutic response to drugs, and other conditions. Understanding these phenomena is highly relevant in a country like Nepal, which has one of the world's richest ethnic, cultural, linguistic, and social diversity and harbors several anthropologically well-defined populations. It harbours populations that are phenotypically similar to East Asians (Mongolians/ Tibetans/ Chinese/ southeast Asians); some are similar to South Asians, and some are similar to West Eurasians. Serving as a bridge between the Western and Eastern Himalaya, Nepal offers a unique ground to understand South and East Asian Genetic ancestry.

- To understand the genetic diversity and Nepal's peopling and its ancient history, scientists from Birbal Sahni Institute of Palaeosciences, Lucknow, an autonomous institute of the Department of Science and Technology, conducted a maternal mitochondrial DNA study of several Nepalese populations.
- The scientists found that except for high altitude Sherpa population of Nepal, most of the Tibeto-Burman speaking communities of Nepal harbor significant genetic contributions from Tibet, Myanmar, and South Asia, showed shared ancestry with the populations from southeast Tibet, Northeast India, North India (Uttarakhand), Myanmar, and Thailand.
- Some of this ancestry exhibit the signature of early admixture and are widespread in several Nepalese populations, including a few Himalayan populations from Uttarakhand, India. The study published in the journal Human Genetics is a step forward in dissecting the complexity of the Tibeto-Burman populations residing in the South of the Himalaya and point to the need for a further study incorporating more populations as well as using other genetic markers.

### **1.8 Ministry of Education releases All India Survey on Higher Education (AISHE) 2020-2021**

- Enrollment in higher education increases to 4.14 crore, crossing the 4 crore mark for first time; increase of 7.5% from 2019-20 and 21% from 2014-15
- Female enrollment reaches 2 crore mark, increase of 13 Lakh from 2019-20
- Significant increase of 28% in enrolment of SC students and 38% in enrolment of Female SC Students in 2020-21, compared to 2014-15.
- Substantial increase of 47% in enrolment of ST students and 63.4% increase in the enrolment of Female ST Students in 2020-21, compared to 2014-15.
- Significant increase of 32% in OBC Student enrolment and 39% in Female OBC Students, since 2014-15.
- Notable increase of 29% in Student Enrolment and 34% in Female Student Enrolment in the North Eastern Region in 2020-21 since 2014-15.
- Gross Enrolment Ratio (GER) has improved from previous year for all social groups.
- Enrollment in Distance Education has increased by 7% in 2020-21 from 2019-20.
- Number of Universities has increased by 70, number of Colleges has increased by 1,453, in 2020-21 over 2019-20.
- Gender Parity Index (GPI) has increased from 1 in 2017-18 to 1.05 in 2020-21.
- Total number of faculty/teachers increases by 47,914 from 2019-20.
- The Ministry of Education, Government of India has released All India Survey on Higher Education (AISHE) 2020-2021. The Ministry has been conducting All India Survey on Higher Education (AISHE)

since 2011, covering all higher educational institutions located in Indian Territory and imparting higher education in the country. The survey collects detailed information on different parameters such as student enrollment, teacher's data, infrastructural information, financial information etc. For the first time, in AISHE 2020-21, HEIs have filled data using entirely online data collection platform through the Web Data Capture Format (DCF) developed by Department of Higher Education through the National Informatics Centre (NIC).

**Following are the key highlights of the survey:**

**Student Enrollment**

- The total enrollment in higher education has increased to nearly 4.14 crore in 2020-21 from 3.85 crore in 2019-20. Since 2014-15, there has been an increase of around 72 Lakh in the enrolment (21%).
- The Female enrolment has increased to 2.01 crore from 1.88 crore in 2019-20. There has been an increase of around 44 Lakh (28%) since 2014-15.
- The percentage of female enrolment to total enrolment has increased from 45% in 2014-15 to around 49% in 2020-21.
- As per 2011 population projections for 18-23 years age group, GER has increased to 27.3 from 25.6 in 2019-20.
- Notable increase of 1.9 points is observed in GER of ST students in 2020-21, as compared to 2019-20.
- Female GER has overtaken Male GER since 2017-18. Gender Parity Index (GPI), the ratio of female GER to male GER, has increased from 1 in 2017-18 to 1.05 in 2020-21.
- The enrolment of SC students is 58.95 Lakh as compared to 56.57 Lakh in 2019-20 and 46.06 Lakh in 2014-15.
- The enrolment of ST students has increased to 24.1 Lakh in 2020-21 from 21.6 Lakh in 2019-20 and 16.41 Lakh in 2014-15.
- The average annual enrolment of ST students has increased to around 1 Lakh during the period 2014- 15 to 2020-21, from around 75,000 during the period 2007-08 to 2014-15.
- Enrolment of OBC students has also increased by 6 Lakh to 1.48 crore in 2020-21, from 1.42 crore in 2019-20. There is a notable increase in OBC student enrolment since 2014-15 of around 36 Lakh (32%).
- The total Student Enrolment in North East States is 12.06 Lakh in 2020-21 as compared to 9.36 Lakh in 2014-15.
- The female enrolment in North East States is 6.14 lakh in 2020-21, higher than the male enrolment of 5.92 lakh [For every 100 male students, there are 104 female students in NER]. The female enrolment outnumbered male enrolment for first time in 2018-19, and the trend continues.

- The enrolment in Distance Education is 45.71 Lakh (with 20.9 Lakh Female), an increase of around 7% since 2019-20 and 20% since 2014-15.
- Uttar Pradesh, Maharashtra, Tamil Nadu, Madhya Pradesh, Karnataka and Rajasthan are the top 6 States in terms of number of student enrolled.
- As per response in AISHE 2020-21, about 79.06% of the total students are enrolled in undergraduate level courses and 11.5% are enrolled in postgraduate level courses.
- Among Disciplines at undergraduate level, enrollment is highest in Arts (33.5%), followed by Science (15.5%), Commerce (13.9%) and Engineering & Technology (11.9%).
- Among streams at postgraduate level, maximum students are enrolled in Social Science (20.56%) followed by science (14.83%).
- Of the total enrolment, 55.5 Lakh students are enrolled in Science Stream, with female students (29.5 Lakh) out numbering male students (26 Lakh).
- Government Universities (59% of total) contribute towards 73.1% of the enrolment. Government Colleges (21.4% of total) contribute towards 34.5% of the enrolment.
- The enrolment in Institute of National Importance (INIs) has increased by nearly 61% during the period 2014-15 to 2020-21.
- Enrolment has increased in 2020-21 compared to 2014-15 in the Specialized Universities relating to Defence, Sanskrit, Biotechnology, Forensics, Design, Sports etc.
- The total number of pass-outs has increased to 95.4 Lakh in 2020-21 as against 94 Lakh in 2019-20.

#### **Availability of different infrastructural facilities in HEIs in 2020-21:**

- Libraries (97%)
- Laboratories (88)
- Computer centres (91%, 86% in 2019-20)
- Skill Development Centre (61%, 58% in 2019-20)
- Connectivity to National Knowledge Network (56%, from 34% in 2019-20)

#### **Number of Institutions**

- The total number of Universities / University like institutions registered is 1,113, Colleges 43,796 and Standalone Institutions 11,296.
- During 2020-21, the number of Universities has increased by 70, and the number of Colleges has increased by 1,453.

- Since 2014-15, there has been increase of 353 Universities (46.4%).
- The Institutes of National Importance (INIs) have almost doubled from 75 in 2014-15 to 149 in 2020-21.
- 191 new Higher Education Institutions have been established in North Eastern States since 2014-15.
- Highest number of Universities is in Rajasthan (92), Uttar Pradesh (84) and Gujarat (83).
- During 2014-15 to 2020-21, on average, 59 Universities have been added annually. This was about 50 during 2007-08 to 2014-15.
- 17 Universities (of which 14 are State Public) and 4,375 Colleges are exclusively for women.
- The College Density, the number of colleges per lakh eligible population (population in the age-group 18-23 years) has been 31. This was 27 in 2014-15.
- States with Highest college density: Karnataka (62), Telangana (53), Kerala (50), Himachal Pradesh (50), Andhra Pradesh (49), Uttarakhand (40), Rajasthan (40), Tamilnadu (40).
- Top 8 Districts with Highest number of Colleges: Bangalore Urban (1058), Jaipur (671), Hyderabad (488), Pune (466), Prayagraj (374), Rangareddy (345), Bhopal (327) and Nagpur (318).
- Uttar Pradesh, Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Madhya Pradesh, Andhra Pradesh, Gujarat are top 8 States in terms of number of colleges.
- 43% universities and 61.4% colleges are located in Rural Areas.

### **Faculty**

- The total number of faculty/teachers are 15,51,070 of which about 57.1% are male and 42.9% are female.
- The female per 100 male faculty has improved to 75 in 2020-21 from 74 in 2019-20 and 63 in 2014-15.

### **1.9 Government is proactively supporting the aviation sector by providing a stable policy environment and incentivising competition led growth**

- India witnessed CAGR of 14.5% in domestic passenger traffic during 2014-15 to 2019-20
- Domestic air traffic has again picked up pace during the current financial year i.e. 2022-23 and is expected to reach around 97% of the pre-covid level
- India has witnessed double-digit Compound Annual Growth Rate (CAGR) of 14.5% in terms of domestic passenger traffic during the period 2014-15 to 2019-20. During 2020-21 and 2021-22, there was a dip in domestic air traffic due to impact of Covid-19 pandemic. The domestic air traffic has again picked up pace during the current financial year i.e. 2022-23 and is expected to reach around 97% of the pre-covid level.



- The Government is proactively supporting the aviation sector by providing a stable policy environment and incentivising competition led growth. In 2016, the Government released the National Civil Aviation Policy (NCAP 2016), which laid out the vision, mission and key objectives for the sector. The Government announced new MRO guidelines on 1st September, 2021 with a view to create a congenial atmosphere in the country for the development of the MRO industry for aircrafts/ helicopters/ drones and their engines and other parts. These guidelines inter-alia provide for the allotment of land at AAI airports through call of open tenders without levy of any royalty or cess of whatsoever nature to MRO operators. Similarly, liberalised Flying Training Organisation (FTO) guidelines have been approved wherein the concept of airport royalty (revenue share payment by FTOs to AAI) has been abolished and land rentals have been significantly rationalised to encourage setting up of FTOs to address the shortage of pilots in the country. The Government has also formulated Helicopter Operation Policy to encourage helicopter operations creating demand and growth.
- The Government has approved the 'Revival of unserved and under-served airports' scheme for the revival and development of 100 unserved and under-served airports. Helipad and Water Aerodromes by 2024. As on 27.01.2023, after four rounds of bidding under UDAN, 459 routes have commenced, operationalizing 72 Airports including 2 Water Aerodrome & 9 Heliports. Under the scheme, Kolhapur, Solapur, Ozar (Nasik), Amravati, Sindhudurg and Ratnagiri, airports in the State of Maharashtra have been identified for revival/development. Development/Upgradation of Airports at Ratnagiri and Solapur depends upon the fulfillment of land availability, removal of obstacles, regulatory compliances, etc. Amravati Airport is being developed by the State Government.
- KrishiUdan 2.0 focuses on transporting perishable food products from the hilly areas, north-eastern states and tribal areas. Total 58 airports in the NER, Hilly Tribal Region & Islands and Other areas have been identified to incentivize movement of Air Cargo. Nasik and Pune Airports are covered under the KrishiUdan Scheme in the State of Maharashtra.
- In order to boost the aviation infrastructure, the Airports Authority of India (AAI) and other airport developers have taken up the development of new and existing airports with a projected capital expenditure of approximately Rs 98,000 crore in the next five years for expansion and modification of existing terminals, new terminals and strengthening of runways, among other activities. Under Greenfield Airport Policy, 2008 of the Government, 'in principle' approval has been accorded for setting up of 21 Greenfield airports across the country including Navi Mumbai, Shirdi and Sindhudurg in Maharashtra. So far, ten Greenfield airports have already been operationalized.
- The upgradation/ modernisation of brownfield airports, including those in Maharashtra, is a continuous process and is undertaken by Airports Authority of India (AAI) and other airport operators from time to time depending on the availability of land, commercial viability, socio-economic considerations, traffic demand/willingness of airlines to operate to/from such airports etc. AAI has undertaken construction of

residential quarters at Juhu Airport, construction of New domestic Terminal Building, ATC tower cum Technical Block cum Fire Station and associated work at Kolhapur Airport and construction of a New Integrated Terminal Building & associated works at Pune Airport.

### **1.10 National Mission For Clean Ganga**

- Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (ghats and crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. have been taken up for rejuvenation of river Ganga and its tributaries. So far, a total of 409 projects have been taken up at an estimated cost of Rs. 32,912.40 Crore, out of which 232 projects have been completed and made operational. Majority of the projects pertain to creation of sewage infrastructure as the untreated domestic/industrial wastewater is the main reason for pollution in the river. 177 sewerage infrastructure projects have been taken up with a cost of Rs. 26,673.06 crore for creation & rehabilitation of 5,269.87 Million Litres per Day (MLD) of Sewage Treatment Plant (STP) capacity and laying of around 5,213.49 km sewerage network. Among these, 99 sewerage projects have been completed resulting in creation & rehabilitation of 2043.05 MLD of STP capacity and laying of 4260.95 km sewerage network. In order to sustain the continued operation of the sewage treatment infrastructure, Hybrid Annuity based PPP mode has also been adopted. The United Nations (UN) has recognized Namami Gange initiative to rejuvenate India's sacred River Ganga as one of the top 10 World Restoration Flagships to revive the natural world. The Award was received by NMCG at a function in the 15th Conference of Parties (COP15) to the Convention on Biodiversity (CBD) in Montreal, Canada on 14th December 2022, the World Restoration Day.
- No Project on silt management has been taken up under Namami Gange Programme. However a study on "Identification of Critical Soil erosion prone areas and preparation of Catchment Area Treatment Plan" has been taken up by IIT Roorkee.
- Namami Gange Programme was launched in June 2014 for a period up to 31st March, 2021 to rejuvenate River Ganga and its tributaries. The programme was subsequently extended up to 31st March, 2026. A total sum of Rs.13,709.72 crore were released to the National Mission for Clean Ganga (NMCG), from Financial Year (FY) 2014-15 till 31st December 2022, out of which Rs.13,245.68 crore have been released/dispensed by NMCG to State Governments, State Missions for Clean Ganga and other agencies for implementation of projects related to Ganga rejuvenation. The amount released/dispensed by NMCG to various agencies for implementation of projects, compiled State & agency-wise, along with main objective of the projects, from 2014-15 up to 31st October, 2022.
- Based on the water quality assessment by Central Pollution Control Board (CPCB) in 5 Ganga main stem States in 2022 (January to October), the observed water quality indicates that median value of

Dissolved Oxygen which is an indicator of river health has been found to be within acceptable limits of notified primary bathing water quality criteria and satisfactory to support the ecosystem of river for almost entire stretch of river Ganga.

- Further, as a result of multi sectoral interventions, as per comparison of median data of water quality parameters viz., Dissolved Oxygen (DO) and Biochemical Oxygen Demand (BOD), Faecal Coliforms (FC) of year 2014 and 2022 (January to October); DO (Median) has improved at 33 locations, BOD (Median) has improved at 40 locations and FC (Median) has improved 28 locations, respectively.
- As informed by the Wildlife Institute of India (WII), the population of dolphins in Ganga & its tributaries has increased as evidence by increased number and range of stretches of dolphin sightings and other biodiversity, which is also an indication of improvement of water quality of the river.

## 2. INTERNATIONAL RELATIONS

### 2.1 About India – South Korea bilateral relations:

#### **Political**

- During the Korean War (1950- 53), India played a major role in a cease-fire agreement signed between both the warring sides (North Korea and South Korea) and the ceasefire was declared in July 1953.
- Comprehensive Economic Partnership Agreement (CEPA) was operationalized from in January 2010.
- In May 2015, the bilateral relationship was upgraded to ‘special strategic partnership’.
- India has a major role to play in South Korea’s Southern Policy under which Korea is looking at expanding relations beyond its immediate region.
- Similarly, South Korea is a major player in India’s Act East Policy under which India aims to promote economic cooperation, cultural ties and develop strategic relationships with countries in the Asia-Pacific.

#### **Regional Stability:**

- The regional tensions in South Asia especially between India and China create a common interest for India and South Korea.
- This could be a collaborative approach for regional stability.

#### **Nuclear:**

- South Korea’s key interest in managing their nuclear neighbour (North Korea) is similar to India’s considerations toward Pakistan.
- The US alliance system, established with South Korea and Japan, puts pressure on North Korea to cap its nuclear programme.
- Containing North Korea is beneficial to India’s economic and regional ambit in East Asia.
- It also adds to its approach to the nuclear non-proliferation regime as a responsible nuclear state.

#### **Economic:**

- The current bilateral trade between India and South Korea is at USD 21 billion and the target that has been set is USD 50 billion by the year 2030.
- India and South Korea have signed the Comprehensive Economic Partnership Agreement (CEPA), 2010 which has facilitated the growth of trade relations.
- To facilitate investment from Korea, India has launched a “Korea Plus” facilitation cell under ‘Invest India’ to guide, assist and handhold investors.

**Diplomatic:**

- There is a long-lasting regional security dilemma with the continued verbal provocations and a conventional arms race.
- Thus, despite the alliance system, Seoul appears to be searching for a stronger diplomatic stand on imminent regional issues beyond the alliance system.
- South Korea's approach to India comes with strategic optimism for expanding ties to ensure a convergence of interest in planning global and regional strategic frameworks.

**Cultural:**

- Korean Buddhist Monk Hyecho or Hong Jiao visited India from 723 to 729 AD and wrote the travelogue "Pilgrimage to the five kingdoms of India" which gives a vivid account of Indian culture, politics and society.
- Nobel Laureate Rabindranath Tagore had composed a short but evocative poem
- 'Lamp of the East' – in 1929 about Korea's glorious past and its promising bright future.

**Indian Diaspora:**

- Many Indian scholars are pursuing post-graduate and Ph. D programmes, mostly in pure sciences live in South Korea.
- During the past few years, many professionals, mainly in the areas of IT, shipping and automobile have immigrated to ROK.
- Coordination Committee by the Indian high commission works to bring all the Indian Associations in ROK onto a common platform.
- The Committee is an effective platform for dissemination of information and coordinating cultural events/activities.

**Multilateral Platforms Shared by Both the Countries:**

- United Nations
- World Trade Organisation
- ASEAN Plus
- East Asia Summit (EAS)
- G-20

**Challenges**

- **Inadequate Trade:** In the last few years, India and South Korea have faced serious blockades to their economic ties.

- Trade between the two countries was sluggish and there was no major inflow of South Korean investment into India.
- **Indian Diaspora:** Within South Korea, the integration of Indians in the local population is far from complete, with some instances of racial prejudice or discrimination toward Indians
- **Inadequate acknowledgment of Korean Culture:** To a certain extent Indians are unable to distinguish between the cultural and social characteristics of South Koreans from that of Japanese/Chinese.
- **Unfulfilled potential of Cultural Centres:** Indian Culture Centre (ICC) was established in Seoul to promote people-to-people contacts.
- However, ICC has to reach an exponentially wider audience and its focus has to expand beyond the urban, English-speaking elite of Seoul.
- The same may be applicable to South Korean culture centres in India.
- **Multi-dimensional challenges:** The current emerging alignment between India and South Korea, which has the potential to bring the two countries closer together, may prove short-lived if proper attention is not paid to the multi-dimensional challenges it faces.

#### **Way Forward:**

- India's significance for South Korea is growing primarily because of the latter's deepening strategic dilemma with China – its largest economic partner. South Korea's shifting perception about its economic engagement with China has influenced Seoul's strategy towards other Asian powers. Against this background, policymakers in Seoul see India as a crucial partner and their government is taking various steps to upgrade ties under their new policy framework called the 'New Southern Policy.'
- India-Republic of Korea (RoK) relations has made great strides in recent years and has become truly multidimensional. The bilateral relations are spurred by a significant convergence of interests, mutual goodwill and high-level exchanges.

## **2.2 International Courts and Climate Change**

- At the United Nations (UN), sixteen nations have launched a valiant effort to combat climate change, an existential threat to human civilization.
- The group, led by Vanuatu, an island nation in the South Pacific Ocean, seeks an advisory opinion on the issue of climate change from the International Court of Justice.

#### **Jurisdictions of ICJ:**

- The International Court of Justice (ICJ) has two types of jurisdictions: Contentious and Advisory.

- Contentious jurisdiction involves settling legal disputes between states that have consented to its authority.
- On the other hand, advisory jurisdiction allows the United Nations General Assembly (UNGA), the Security Council (SC), and other specialized bodies to seek the ICJ's input on legal questions.
- While ICJ's advisory opinions lack binding force, they possess normative significance and provide clarity on relevant issues of international law.
- Additionally, the ICJ's advisory opinion on climate change could prove useful in domestic litigation pertaining to climate change.



#### **Vanuatu's Initiative:**

- Despite multiple international legal frameworks on climate change, such as the Paris Agreement and Kyoto Protocol, the global community has not effectively addressed the issue.
- The presence of these frameworks has not resulted in concrete solutions to the problem of climate change.
- The 27th UN Climate Change Conference (COP-27) recently concluded with little progress made on crucial issues like greenhouse gas emissions reduction.
- The conference serves as an example of the international community's failure to take unified action on climate change.
- Vanuatu, a Small Island Developing (SID) state, launched an initiative in September 2021 to seek an advisory opinion from the ICJ through the UNGA.
- The initiative aims to clarify the legal obligations of all countries to prevent and redress the adverse effects of climate change, and it has gained support from over 100 countries.

#### **Seeking Answers:**

- The draft resolution piloted by Vanuatu poses the following questions to the ICJ.
- Firstly, what are the international legal obligations of countries regarding the protection of the climate system from anthropogenic emissions of greenhouse gases for present and future generations?

- The ICJ is expected to interpret and clarify existing international climate change law enshrined in various international environmental treaties, as well as use general and customary international law (CIL) to fill gaps in these treaties.
- Therefore, the ICJ could apply the 'no-harm' principle - which obligates states to ensure that activities within their jurisdiction do not harm other countries - to clarify ambiguous provisions of the Paris Agreement.
- Secondly, what are the legal consequences for states that have caused significant harm to the climate system, SID states, and future generations?
- This question aims to determine the consequences that states should face for not fulfilling their international legal obligations on climate change, including the possibility of climate reparations.
- During COP-27, an agreement was reached to create a "loss and damage" fund to provide financial assistance to vulnerable developing nations.
- However, there is limited information on which countries will contribute to the fund. Additionally, the connection between funding and the historical responsibility of developed countries for emissions remains uncertain.
- In this regard, the ICJ's response to the second question could potentially clarify the legal principles that could aid in the implementation of the "loss and damage" fund.

**Role of ITLOS:**

- It is not just the ICJ whose advisory opinion is being sought.
- The Commission of Small Island States on Climate Change and International Law, which includes countries such as Antigua and Barbuda and Tuvalu, has requested an advisory opinion from the International Tribunal for the Law of the Sea (ITLOS).
- ITLOS has been asked to determine the obligations of countries under the United Nations Convention on the Law of the Sea regarding preventing, controlling, and reducing pollution of the marine environment.
- The challenges of ocean warming, sea level rise, and ocean acidification are all interconnected with the marine environment.
- While the advisory opinions from ICJ and ITLOS are not a complete solution, they can be a valuable tool in the fight against climate change.
- However, the outcome of the verdicts may have positive or negative consequences.



- Nevertheless, it is essential to welcome the involvement of international courts as part of a multi-faceted strategy to protect the planet. Developed countries and groups such as the G-20 should support these initiatives by the SID states.
- The G-20, with its focus on environmental and climate sustainability, should take the lead, and as the current G-20 president, India should play a pivotal role in promoting sustainable lifestyle practices through their LiFE campaign.

### **2.3 The Ukraine War has shaken up a Delicate Post-Cold War Order**

- The Russian invasion of Ukraine on 24 February 2022 has not only provoked the largest armed conflict in Europe since World War II but has also set in motion geopolitical trends that are likely to change the contours of the post-Cold War global order.

#### **Key Highlights:**

- Russia's misadventure has once again proved that it is easier to start a war than to bring it to a conclusion, as ever after one year into the conflict, there is no sign of an end game.
- The Ukrainian resistance, helped by Western weapons, has been able to retain its defenses, but the human cost is still great. As a result, Russian forces are also struggling, and they have now turned to indiscriminate bombing of cities and infrastructure.
- Contrasting Historical Narratives Shaping The Causes And Consequences Of This War:
- Russian forces have been smashing their way through Ukraine spurred in large part by historical fiction even as history also propels the fierce Ukrainian resistance.
- Despite the fact that history also pushes the tenacious Ukrainian resistance, Russian forces have been stomping their way across Ukraine, encouraged in large part by historical fiction.
- The history has a specific meaning for Ukrainians that spurs them on to battle and this battle is, in many ways, the clash of two incompatible historical narratives.



### **2.4 Europe's Post-Cold War Security Landscape:**

- On the ground, there is a clear stalemate and the war's result is still very unknown, but in just a year, the strategic contours of Europe's post-Cold War security environment have undergone a significant transformation.

- The Trans-Atlantic alliance NATO has been revived and Europe is once again seeing the virtues of geopolitics.
- Most significantly, in a decisive break from its post-World War II foreign policy of caution, Germany today is at a turning point in European history.
- Olaf Scholz, the German chancellor, was compelled to face the repercussions of Europe's unwillingness to adapt to the shifting strategic environment and acknowledge that it is now in a new era with the invasion of Ukraine.
- Berlin, formerly one of the strongest proponents of close ties with Russia has succeeded in significantly reducing its reliance on Russia for energy and has also announced a significant increase in defence spending to create a powerful, state-of-the-art, advanced army that protects Germany reliably.
- A fascinating power shift has occurred within the EU, with eastern European countries asking for and receiving a more forceful reaction against Russia.
- NATO is back in demand with its frontiers now actually reaching Russian doorsteps, something that was Russia's justification for starting the war.

**Impact of War on Russia:**

- For Russia, it has been a year of disastrous displays of incompetence at multiple levels.
- Its military prowess, the only remaining sign of being a big power, was revealed to be of little use.
- Due to major command-and-control and logistical weaknesses, an early invasion that was meant to conclude the war in days failed, prompting Russia to engage in partial mobilisation which caused unrest at home.
- As waves of aerial bombardment wreak havoc on helpless populations, the Russian approach is currently to wait and erode Western support for Ukraine.
- A significant escalation is possible without a guarantee of a settlement as Ukrainian forces strive to unite for an offensive.
- In terms of diplomacy, Russia is likewise slipping behind, with its standing eroding in Central Asia and the Caucasus, where it borders. Belarus, North Korea, Syria, and Eritrea are the only countries that explicitly support Russia.
- The majority of countries have been eager to strike a balance in their relations with Russia and the West, but China has made it clear that it won't provide even one bullet to Moscow despite its declaration of a no-limits friendship but a year later, China is reportedly considering giving Russia lethal aid and the West has warned that this would entail crossing a red-line.

- For much of the world, the food, fuel, and broader economic crisis brought on by the war have taken a huge toll.
- The world was just beginning to recover from the pandemic when Russia invaded Ukraine.
- The developing world has been the biggest loser with economic distress visible in many countries.
- For example, Bangladesh, Sri Lanka, and Pakistan have all struggled to pay their import bills.
- India, too, is fast learning that its extreme dependence on Russia for defence supplies has shrunk its strategic autonomy.
- Though the last few years have seen a leadership vacuum in the world order, which has given India the opportunity to demonstrate its leadership abilities but the global polarization and ongoing rivalry between the major powers will have a negative impact on India's ability to pursue multi-alignment successfully.

## **2.5 Russia suspends New START**

- Russian President Vladimir Putin declared recently that Moscow was suspending its participation in the New START treaty the last remaining nuclear arms control pact with the United States.

### **What is the New START?**

- The name START comes from the original “Strategic Arms Reduction Treaty”, known as START-I, which was signed between the US and the erstwhile USSR in 1991, and came into force in 1994.
- START-I, which capped the numbers of nuclear warheads and intercontinental ballistic missiles (ICBMs) that each side could deploy at 6,000 and 1,600 respectively, lapsed in 2009, and was replaced first by the Strategic Offensive Reductions Treaty (SORT, also known as the Treaty of Moscow), and then by the New START treaty.
- The New START, officially, the “Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms”, entered into force on February 5, 2011, and placed new verifiable limits on intercontinental-range nuclear weapons.
- The two countries had to meet the treaty’s central limits on strategic offensive arms by February 5, 2018, and to then stay within those limits for the period the treaty remained in force.

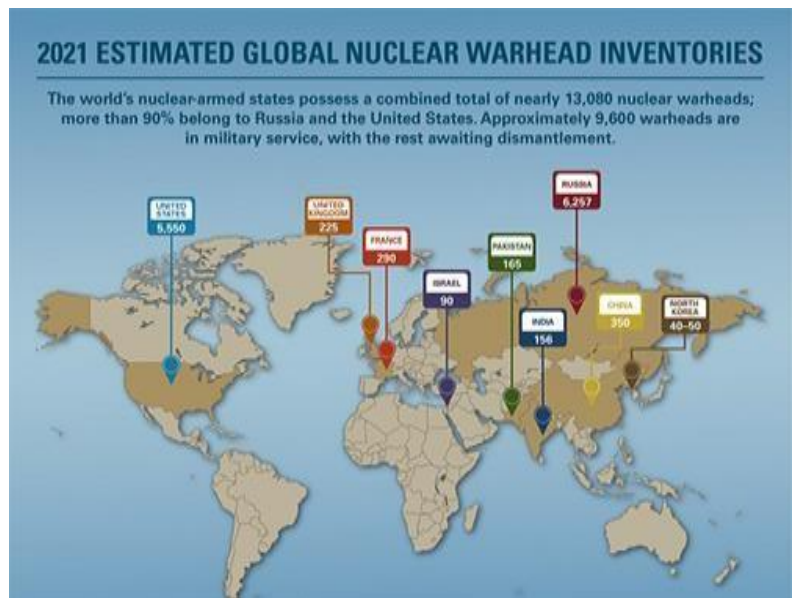


- The US and Russia Federation subsequently agreed to extend the treaty through February 4, 2026.

### What limits did the New START impose on the two countries?

- **The central limits of the treaty that the US and Russia met by February 5, 2018, and have adhered to since then are:**

- 700 deployed intercontinental ballistic missiles (ICBMs), deployed submarine-launched ballistic missiles (SLBMs), and deployed heavy bombers equipped for nuclear armaments;
- 1,550 nuclear warheads on deployed ICBMs, deployed SLBMs, and deployed heavy bombers equipped for nuclear armaments (each such heavy bomber is counted as one warhead toward this limit);
- 800 deployed and non-deployed ICBM launchers, SLBM launchers, and heavy bombers equipped for nuclear armaments.



### Intercontinental Ballistic Missile (ICBM)

- An intercontinental ballistic missile (ICBM) is a ballistic missile with a range greater than 5,500 kilometres (3,400 mi), primarily designed for nuclear weapons delivery (delivering one or more thermonuclear warheads).
- Conventional, chemical, and biological weapons can also be delivered with varying effectiveness, but have never been deployed on ICBMs.
- Most modern designs support Multiple Independently-targetable Reentry Vehicles (MIRVs), allowing a single missile to carry several warheads, each of which can strike a different target.
- Russia, the United States, China, France, India, the United Kingdom, Israel, and North Korea are the only countries known to have operational ICBMs.

### Submarine-Launched Ballistic Missile (SLBM)

- A submarine-launched ballistic missile (SLBM) is a ballistic missile capable of being launched from submarines.
- Modern variants usually deliver multiple independently targetable reentry vehicles (MIRVs), each of which carries a nuclear warhead and allows a single launched missile to strike several targets.

- Submarine-launched ballistic missiles operate in a different way from submarine-launched cruise missiles.
- Modern submarine-launched ballistic missiles are closely related to intercontinental ballistic missiles (ICBMs), with ranges of over 5,500 kilometres (3,000 nmi), and in many cases SLBMs and ICBMs may be part of the same family of weapons.

### **How is Compliance with the Treaty Ensured?**

- Detailed procedures for the implementation and verification of the central limits, and all treaty obligations, are part of the treaty terms.
- These procedures govern the conversion and elimination of strategic offensive arms, the establishment and operation of a database of treaty-required information, transparency measures, a commitment not to interfere with national technical means of verification, the exchange of telemetric information, the conduct of on-site inspection activities, and the operation of the Bilateral Consultative Commission (BCC).
- The treaty provides for 18 on-site inspections per year for US and Russian inspection teams.
- Type One inspection focus on sites with deployed and non-deployed strategic systems (up to 10 per year), and Type Two inspections focus on sites with only non-deployed strategic systems (up to 8 per year).
- Since the New START Treaty's entry into force, as of February 1, 2023, the two parties have conducted 328 on-site inspections, exchanged 25,311 notifications, held 19 meetings of the Bilateral Consultative Commission, and held 42 biannual data exchanges on strategic offensive arms subject to the treaty.

### **What is the Latest Situation on Compliance?**

- The State Department told Congress in January this year that Russia was not complying with the New START, only remaining nuclear arms control treaty between the two countries, jeopardizing a source of stability in their relationship.
- Russia's refusal to facilitate inspection activities prevents the United States from exercising important rights under the treaty and threatens the viability of U.S.-Russian nuclear arms control.
- Russia has also failed to comply with the New START treaty obligation to convene a session of the bilateral consultative commission in accordance with the treaty-mandated timeline.

## 2.6 Rebuilding India-US Trade Ties

- The US is making direct efforts to reduce its reliance on Chinese supply chains, and India is pursuing a similar strategy with initiatives such as Production Linked Incentives (PLI).
- This provides a window of opportunity for India to enter into emerging supply chains. Both India and the US are working together on this front through an increasing number of state visits by senior leaders from both countries.



### **Background:**

- The US Air Force shot down a balloon recently, alleging that it was a Chinese espionage tool. This development has further complicated an already tense relationship between the US and China.
- In addition, their trade relationship has been challenged by a range of issues in recent years, including disputes over trade deficits, the theft of intellectual property, and the transfer of technology.
- The Russia-Ukraine war has made matters worse, with developed nations raising the old industrial policy playbook.
- For decades after the Reagan-Thatcher revolution and the establishment of the Washington Consensus in the 1980s, economic orthodoxy was against policies that involved "picking winners" instead of leaving decisions to the market.
- However, in their attempts to restructure the current global supply chains, the US has enacted two significant pieces of legislation - the Chips and Sciences Act and the Inflation Reduction Act.
- While the Chips and Sciences Act aims to build a domestic semiconductor industry and push forward America's scientific supremacy over China, the Inflation Reduction Act aims at reducing healthcare costs and encouraging clean and green energy transmission in a big way.
- The US is making a concerted effort to reduce its reliance on Chinese supply chains.
- This presents a significant opportunity for India to participate in developing supply chains. India and the US are collaborating on this endeavor to strengthen their positions.

### **India-US Trade Relations:**

- Despite post-liberalization improvements in India-US trade, several obstacles have prevented a comprehensive trade agreement.

- Both nations worry about their overreliance on Chinese imports, but they have divergent views on agriculture, labour standards, climate, and human rights.
- These are reflected in the current Indo-Pacific Economic Framework for Prosperity (IPEF), which tries to build regional cooperation on trade, supply chains, clean energy (Decarbonisation and infrastructure), tax and anti-corruption.
- Supply chains and clean energy are particularly promising sectors, given recent policy developments in both countries, such as green hydrogen.
- These offer numerous opportunities for complementary initiatives that could help create robust global value chains, however, India has yet to join the trade component of this framework.
- The US removed India from the GSP programme, citing concerns over trade practices and failure to provide equitable and reasonable market access to US companies
- **Service Sector:** The US wants more access to Indian education and insurance markets, while India wants more US labour access. Hence, more than the merchandise segment, there are more complementarities between India and US in the services segment.
- Labor and environmental standards have been a major source of conflict. While the US believes that aligning these standards is critical for safeguarding global welfare, India's limited capacity has prevented it from initiating discussions on this issue.

### Way forward:

- Hence, a lot of groundwork must be done to build India-US trade relations. As a first step, both nations could work on the following:
- Reinstatement of India in the Generalized System of Preferences (GSP).
- Start negotiating on services trade outside the framework of comprehensive free trade negotiations.
- Start an intellectual-level exchange of ideas on labour and environmental standards.
- GSP made Indian exports to the US more competitive and helped increase trade between the two countries. India was, in fact, the largest beneficiary of the GSP system.
- Reinstating India into the GSP programme will be a good way to enhance bi-lateral ties.
- Given the complementarity that services trade offers for both nations, a standalone services agreement could offer a swift opportunity for both countries to finalize a deal.
- There are numerous "low-hanging fruit" possibilities, such as US investments in the advanced GIFT City and the expansion of India's fintech innovations, such as UPI and RuPay, to the US.

- Labor and environmental standards remain a crucial issue in India's ongoing negotiations with the EU, UK, Canada, and Australia for a comprehensive trade deal.
- Therefore, it is essential for India to involve experts and the research and academic community in discussing these standards and conducting cross-country comparisons.

### **Conclusion:**

- The future of global trade seems to be heading towards division among blocs, with the US and China leading the way. It is expected that free trade will exist within a bloc, but trade between blocs will be limited.
- The US's efforts to rebuild supply chains with more cooperative nations will have a significant impact on industrialization in developing countries.
- Therefore, demonstrating quick progress in negotiations is crucial for both the US and India. A partnership between the US and India has the potential to greatly redefine global trade and the geopolitical landscape.

## **2.7 The G20 must help resolve debt Crises across the World**

- According to a 2022 UNDP report, 54 developing economies representing about 3% of the global economy and accounting for over half the world's poverty have been identified as facing severe debt stress.
- These include the 25 sub-Saharan African nations, followed by Latin American and Caribbean countries.

### **Key Highlights:**

- According to World Bank data, in 2022, the world's poorest countries owed \$35 billion as debt-service payments to official and private-sector creditors, with China alone accounting for over 40% of the total dues.
- Apart from the pandemic and the economic devastation it wrought, a general trend of anti-globalization amid pre-covid changes in the structure of global growth has been a key factor behind their debt spiral.
- The Russia-Ukraine war has only aggravated their debt sustainability problem by setting off an energy-and-food crisis.





**Implications of Looming Debt Crisis:**

- Debt distress is not merely a macroeconomic problem as it has real socio-economic consequences in terms of heightened inequality, increased levels of poverty, and growth inadequacy that can together culminate in a humanitarian crisis.
- Amid geopolitical turmoil, these debt-ridden poor countries have faced severe food crises due to swelling import bills for wheat, rice, and maize.
- With so many countries reeling under food scarcity, energy shortages, and high inflation, among other problems, a looming debt spiral presents a complex developmental challenge that is difficult to address and might render some economies unstable in time to come.

**Common Framework (CF) By G20:**

- The G20 2020 launched a Common Framework (CF) which brought creditors such as China and India, along with the IMF, the Paris Club, and the private creditors to the negotiation table.
- The CF intended to deal with insolvency and protracted liquidity problems, and only three countries – Chad, Ethiopia, and Zambia – have applied for debt treatment under the CF, and none has accomplished debt restructuring.

**Debt Service Suspension Initiative (DSSI) by G20:**

- The G20's Debt Service Suspension Initiative (DSSI) was able to suspend \$12.9 billion in debt-service payments owed by participant countries to their creditors between May 2020 (when it began) and December 2021, by latest estimates.
- The DSSI, which saw 48 of the 73 eligible countries participate, has enabled a coordinated release of resources to its beneficiary countries but such initiatives need to be made more frequently as well as more effective outcomes are needed.
- Nonetheless, the debt composition of these DSSI countries has changed in the last two decades, with multilateral debt obligations now accounting for about 48%, followed by Chinese debt (18%), Eurobonds (11%), Paris Club lending (10%) and private lending (8%).

**Debt Service Suspension Initiative (DSSI)**

- The Debt Service Suspension Initiative (DSSI) means that bilateral official creditors are, during a limited period, suspending debt service payments from the poorest countries (73 low- and lower-middle-income countries) that request the suspension.
- It is a way to temporarily ease the financing constraints for these countries and free up scarce money that they can instead use to mitigate the human and economic impact of the COVID-19 crisis.
- The DSSI was quite helpful, but it did not solve longer-term problems.

- In 2022, the world's poorest countries owed money to multilateral, governmental and private institutions. More than 40 % was owed to China, now the world's largest bilateral creditor.

### **Common Framework (CF) For Debt Treatment**

- In view of mounting problems, the G20 launched the Common Framework for Debt Treatment (CF) to reach beyond the DSSI.
- It is the only multilateral mechanism for forgiving and restructuring sovereign debt.

### **Roadmap for India:**

- As India has assumed the G20 presidency at an uncertain time for the global economy, addressing debt distress, initiating action, and devising a coordinated framework for relief would be a challenging endeavor.
- India has provided \$4 billion in assistance to Sri Lanka and is a major creditor of the island country alongside a few heavily-indebted countries in Africa.
- Under the G20's aegis, India should provide leadership and help negotiate commitments to debt relief before this crisis worsens global economic conditions.

### **This can be facilitated:**

- Through debt suspension and debt relief
- By granting unhindered market access to these countries for inclusive trade and shared prosperity.
- For the latter, an emphasis should be laid on the development of tradable sectors, with priority given to the informal sector, lower-income groups, and conflict-affected regions.

### **Targeted Measures:**

- Lifting barriers to trade
- Amending regulatory requirements that are discriminatory to least developed countries
- Ensuring fair prices for raw material imports
- Boosting trade in services as hospitality and tourism have borne the brunt of the pandemic.

### **Creditor Committee for Chad:**

- The creditor committee for Chad under CF includes India as a member. The Chad relief package was aimed at restructuring its debt, but progress has been largely conditional on forging agreements among government creditors and private consortiums.

- Reports suggest that creditors have agreed that given high energy prices, Chad does not require debt relief at this time, and the initiative will be reopened as and when needed but several other countries do not benefit from oil price surges and macroeconomic contexts vary.
- Long-winded negotiations for debt recasts have seen debt service payment standstills.

### Way Ahead:

- In 2020, G20 leaders committed support to low-income countries by lending \$100 billion of their special drawing rights to those in need, which the group should recommit to.
- Given CF implementation delays, the G20 must commit to quicker timelines.
- Difficult negotiations will need to be driven with due urgency.
- A \$1.4 billion three-year extended credit facility to Zambia in December 2021 had almost become uncertain because debt recast talks between China and Zambia seemed to be in the dark.
- The G20 could develop debt relief packages that favour green and inclusive growth, and help boost economic resilience.
- Resources need to be directed towards low-carbon production.
- With the welfare of millions at stake, relief of debt distress is necessary. This would be in line with India's G20 presidency slogan of "one earth, one family, and one future".

## **2.8 Indian Air Force's revised Doctrine adopts a Holistic Approach to the Country's Security Imperatives**

- Noting that India's approach to air power as merely an arm to support joint operations significantly limits its strategic options and narrows its security response matrix, the Indian Air Force (IAF) has come out with a new doctrine that includes lessons from the Russia-Ukraine war and standoff with China.
- The new doctrine has the potential to accommodate major changes in wartime strategy, allowing for the application of future precepts in the use of aerospace power in the Indian security context.

### Key Highlights:

- India's use of air power in all its wars has been limited, except during the 1971 war due to two aspects:
- The worldwide inadequacy in the comprehension of the inherently complex and rapid technology-driven changes in air power's characteristics and capabilities.



- India's traditional surface-dominant security outlook that stems from dealing with a primarily continental threat.
- Both these factors have led to the continued viewing of air power from the isolated lens of support service to the continental and maritime domains, despite the long, consistent, and demonstrated commitment of the Indian Air Force to national security.

#### **Need for New Air Force Doctrine:**

- Geopolitical re-balancing, increased assertiveness by emerging powers, regional instabilities, and the expansion of radicalism are but some of the present-day manifestations.
- The perennial friction on the Northern and Western borders; state-sponsored terrorism; left-wing extremism; all underscore the magnitude of external emphasizing.
- A broad regional scan indicates growing security challenges that impact the political, economic, and security interests in the Indian Ocean Region (IOR) spanning from West Asia to Southeast Asia and the larger Indo Pacific construct.
- Adversaries have adopted grey zone tactics by employing cyber, information, and economic means as instruments of statecraft.
- A continued two-dimensional approach seriously impacts national security along with narrowing India's strategic outlook, it limits its response options.
- Aerospace power helps shape security operations and external and internal security.
- Sovereignty protection, deterrence, air diplomacy, and nation-building remain peace-time imperatives.

#### **Salient Features of the Indian Air force Revised Doctrine:**

- The doctrine talks about the need for unified war-fighting strategies while laying emphasis on retaining the unique character of air power that can be used as support to the ground and maritime forces.
- The doctrine emphasizes the need to shift from "threat-based and demanded" to "capability- demanded" force requirements.
- The IAF's revised doctrine underscores the necessity of a more holistic approach towards India's security and lays out what aerospace can do to bolster it.
- It provides a clearer understanding of the redefined characteristics of aerospace power and its expanded capabilities, not just with respect to contemporary and future warfare and conflicts, but also its place in fostering nation-building, strengthening regional security, and contributing to India's larger national interests.
- The doctrine provides a clear articulation of the Service objectives evolved out of combat experience, invaluable assessments of international conflicts, and the experience gained in international exercises.

- The strategy covers the entire spectrum of future aerospace applications as it includes the unique no-war-no-peace condition confronting the country apart from peace and war.

### **Significance of the Doctrine:**

- It underpins IAF's commitment to the larger political objectives of the nation.
- By exploiting its rapid force projection capability, enormous soft power, and international outreach in assisting statecraft and diplomacy, the document underscores the IAF's inevitable and increasing role in the strategy for security and growth for all in the region (SAGAR), as well as in the larger Indo-Pacific construct.
- Though the domain of future aerospace power lies primarily with the IAF, the doctrine acknowledges that other services civil aviation and space agencies also contribute to this strength.
- Despite the air and space continuum, IAF's multitude of space-based dependencies and applications, and the future necessity of aerospace defence of India's space assets and ground-based infrastructure, the document refrains from asserting ownership of the arena.
- It maturely acknowledges that future aerospace and defence capabilities, related R&D, and associated civil-military industrial capabilities are national force multipliers.

### **Conclusion:**

- Since national security is every citizen's concern and given the efforts underway to evolve national defence and security strategies, the doctrine credibly conveys what aerospace power has, can, and will do for the nation, and the need for greater awareness of it.

## **2.9 Exploring the Blue in India-France Partnership**

- The celebration by India and France of 25 years of their strategic partnership presents an important opportunity for both to introspect on their relations.

### **Key Highlights:**

- Signed in 1998, the time-tested strategic partnership has continued to gain momentum over shared values and aspirations of peace, stability and, most importantly, their desire for strategic autonomy.
- There are no real substantive disagreements between the two nations.



- France has emerged as a key trading partner of India with annual trade of \$12.42 billion in 2021-22.
- It is the 11th largest foreign investor in India with a cumulative investment of \$10.31 billion from April 2000 to June 2022, which represents 1.70% of the total foreign direct investment inflows into India.

### **Partnership between India and France: Defence Cooperation:**

- France has emerged as a key defence partner for India, becoming the second largest defence supplier in 2017- 2021.
- France has emerged as a major strategic partner for India with crucial defence deals and increased military-to-military engagement.
- A key example of this is the inducting of the French Scorpene conventional submarines, being built in India under technology transfer agreement of 2005, and the Indian Air Force has received 36 Rafale fighter jets.
- These relations are further fortified with the robust network of military dialogues and regularly held joint exercises - Varuna (navy), Garuda (air force), and Shakti (army).

### **Mutual Cooperation at Global Level :**

- As the complexities in the international geopolitical order have emerged, both countries have worked towards a deepening and broadening of their cooperation.
- France was among the first countries with which India signed a civil nuclear deal.
- It also played a critical role in limiting India's isolation in the non-proliferation order after the 1998 nuclear tests.
- In a sign of expanding cooperation, France supports India's bid for permanent membership of the United Nations Security Council as well as its entry into the Nuclear Suppliers Group.

### **Climate Change Cooperation:**

- An area of importance for both is climate change, where India has supported France in the Paris Agreement expressing its strong commitment towards mitigating climate change impact.
- New Delhi and Paris, as part of their joint efforts on climate change, launched the International Solar Alliance in 2015.

### **Maritime Cooperation:**

- The deepening of the strategic partnership is also visible in their maritime cooperation.
- India and France are resident powers of the Indian Ocean and in the Indo-Pacific.

- The leadership of both countries welcomed the “Joint Strategic Vision of India-France Cooperation in the Indian Ocean Region” which presented a blueprint for a strengthening of ties.
- Maritime security has further gained momentum as both countries have articulated their common vision for a free, fair and open Indo-Pacific.
- As both countries share a comprehensive strategy for the Indo-Pacific, India and France in September 2022 agreed to set up an Indo-Pacific Trilateral Development Cooperation Fund that will support sustainable innovative solutions for countries in the region.
- The two partners have formed a trilateral grouping with the United Arab Emirates to ensure maritime domain awareness and security from the east coast of Africa to the far Pacific.

**Russia-Ukraine Crisis:**

- While there are divergences over the Ukraine crisis, there is a broad understanding of each other’s position and both countries are working together to coordinate on playing a constructive role in the crisis.
- It needs to be noted that Mr. Macron and Prime Minister Narendra Modi are among the few world leaders who have maintained open communication channels with the Russian President and Ukraine’s President.

**Way Forward:**

- India’s partnership with France is built on common values and goals.
- Both have underlined the importance of maintaining strategic autonomy with a shared understanding of global risks in many domains.
- There is a high-level India-France political dialogue that is ongoing in defence, maritime, counterterrorism and the Indo-Pacific.
- They are now forging ahead with cooperation in issues such as digitisation, cyber, green energy, a blue economy, ocean sciences, and space’.
- India and France understand each other’s interests and dependencies, be it in relation to China or Russia.

**Conclusion:**

- In the marking of a long strategic partnership, a common interest in enhancing strategic autonomy and improving resilience, there is much ground ahead for further collaboration.

## **2.10 Two Years after Myanmar Coup: Let's not Forget Rohingya Refugees Adrift at Sea**

- February 1, 2023, marked two years since the military in Myanmar attempted to stage a coup.

### **Key Highlights:**

- The country has seen intense civil strife, widespread violence against civilians and an organised wave of resistance against the junta.
- One of the worst-hit victims of their brutality was the Rohingya Muslim community, residing in the north of the Rakhine State in western Myanmar.
- Some 8,00,000 Rohingya fled Myanmar and took refuge in the neighbouring country, Bangladesh.
- In 2018, a report published by a UN fact-finding team concluded that the military campaigns had “genocidal intent”.

### **Life in the Refugee Camps**

- Conditions in the camps, which currently host about a million refugees, have deteriorated.
- From rising poverty due to a lack of employment opportunities, to the constant threat of violence by criminal gangs and armed groups, the Rohingya continue to face multi-faceted threats in these camps.
- Rising complaints by the host population of supposed resource degradation and social instability have driven the Sheikh Hasina government to ship off some 30,000 of the refugees to Bhashan Char, a remote, offshore island formed by silt deposition.
- That the camps in Bangladesh are turning into hostile territory for the Rohingya, much like their enclosed villages and IDP camps in Myanmar, is shown by a steady uptick in refugee crossings through the Andaman Sea.
- In 2022, hundreds of them took to the sea from Bangladesh and Myanmar on boats arranged by smugglers in search of a better life in Southeast Asia.
- However, many of them found themselves in the maws of death in the middle of the high seas when their rickety vessels gave up halfway through.

### **Response from the World**

- Despite the UNHCR, ASEAN Parliamentarians for Human Rights (APHR), and several Rohingya activists publicly releasing detailed information about the distressed, non-seaworthy vessels and issuing categorical calls for their rescue, no country or national maritime force in the Bay of Bengal littoral region has made any attempt to proactively look for or rescue the refugees.
- The only exception was the Sri Lankan Navy, which rescued some 105 Rohingya from the country's northern shores on December 18, 2022.



- After the 2015 crossings when hundreds perished at sea, countries part of the “Bali Process”, a 49-member grouping formed in 2002, met in the Indonesian province and signed the 2016 Bali Declaration to collectively address the crisis and take the classic “never again” pledge.
- Two years later, they signed another declaration and took another pledge. But, merely six years on, we are witnessing a dramatic return of these catastrophic sea crossings.

### **Is this a Crisis of Institutions?**

- It is easy to blame institutions, but they do not fail by themselves. They are made to fail by the same people who create them. The Bay of Bengal region today is plagued, first and foremost, by a crisis of empathy.
- No government in the region wants to go out of its way to protect the Rohingya, let alone allow them to disembark in their territory.
- At the outset, this is because most of these countries are not state parties to the 1951 Refugee Convention.
- Rising xenophobia, nationalism, and sectarianism, manifested in hate speech, militarised border regimes, and coordinated disinformation campaigns on social media, continue to fuel institutional apathy in several parts of the region.
- This is a crisis that institutions, by themselves, cannot fix.
- It demands a wholesale change of popular attitudes and political narratives, backed by a conscientious recognition by all governments in the region that refugees need affirmative protection. This is not easy.
- Most nations don’t want to talk about the stateless community in bilateral or multilateral discussions, lest other “more important” political, economic or security agendas fall apart.
- For this reason, a frank discussion about protecting Rohingya refugees at sea within the Bali Process, BIMSTEC, ASEAN or SAARC remains a pipe dream.

### **India’s attitude towards handling Refugees**

- India has welcomed refugees in the past and nearly 300,000 people here are categorized as refugees at present.
- But India is not a signatory to the 1951 UN Convention or the 1967 Protocol. Nor does India have a refugee policy or a refugee law of its own.
- This has allowed India to keep its options open on the question of refugees. The government can declare any set of refugees as illegal immigrants - as has happened with Rohingya despite the UNHCR

verification - and decide to deal with them as trespassers under the Foreigners Act or the Indian Passport Act.

- The Foreigners Act, 1946 in India has procedures to deport illegal immigrants.
- Myanmar shares a 1,600-km border with the four North-eastern states of Mizoram, Nagaland, Manipur and Arunachal Pradesh.
- The Center had asked these states to “take appropriate action as per law” and “maintain a strict vigil at the border” to prevent a Rohingya influx.
- The state governments were told that they did not have the authority to declare anyone as a “refugee” since India is not a signatory to the Refugee Convention of 1951.
- This lack of generosity and compassion is a blemish on India’s record of treating communities under siege in its neighbourhood – Tibetans, people from erstwhile East Pakistan and Sri Lankan Tamil.

**Conclusion:**

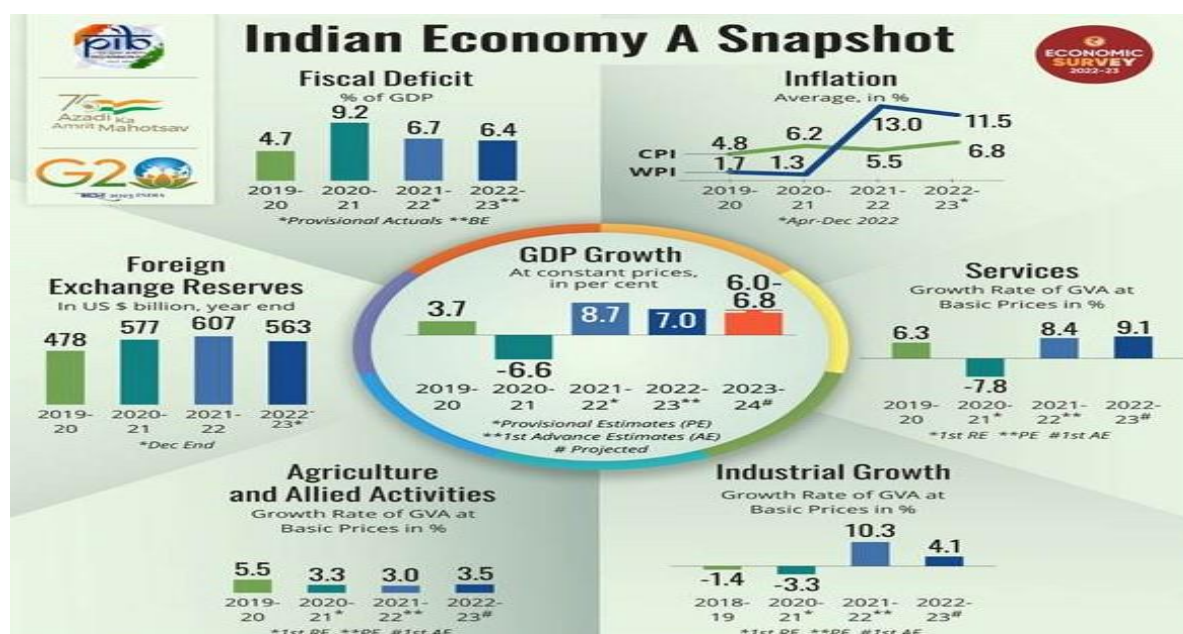
- No country in the Bay of Bengal would likely be keen on receiving large groups of Rohingya refugees without a guarantee of swift repatriation.
- While this takes us back to square one, it is worth a try. Some countries in the region might, in fact, be happy to outsource refugee SAR operations to NGOs. Since this is a humanitarian crisis, all alternatives must be given a shot.

### 3. ECONOMY

#### 3.1 Memorandum of Understanding signed to facilitate low interest rate loans to farmers

- Produce Marketing Loan features Nil processing fee, No Additional collateral and attractive interest rates
- To facilitate farmers in providing low interest rate loans, Warehousing Development Regulatory Authority (WDRA) signed Memorandum of Understanding (MoU) with a nationalized bank in an event.
- The MoU was signed with the intent of promoting awareness about the new loan product called Produce Marketing Loan to exclusively fund against e-NWRs (electronic Negotiable Warehouse Receipt) with features such as Nil processing fee, No Additional collateral and attractive interest rates.
- The MoU is aimed to provide information to depositors of the benefits, besides doing further outreach activities to improve agricultural pledge finance in India.
- It is envisaged that the product will have far reaching consequences with regard to acceptance of e-NWRs among small and marginal farmers. It has the potential to make significant impact on the finances of rural depositors by preventing distress sale and releasing better prices for the produce.
- Combined with the inherent security and negotiability of the e-NWR system, the Produce Marketing Loan will go long way in improving rural liquidity and increasing farmers income. The MoU was signed with the State Bank of India (SBI).
- During the event, there was a brief discussion on the importance of post-harvest pledge financing using warehouse receipts for improving rural credit. The bank representatives also highlighted the risks faced by the lending institutions in this sector. WDRA assured their full regulatory support in improving the fiduciary trust among stakeholders.

#### 3.2 ECONOMIC SURVEY 2022-23: HIGHLIGHTS



### **3.3 State of the Economy 2022-23: Recovery Complete**

- Recovering from pandemic-induced contraction, Russian-Ukraine conflict and inflation, Indian economy is staging a broad based recovery across sectors, positioning to ascend to the pre-pandemic growth path in FY23.
- India's GDP growth is expected to remain robust in FY24. GDP forecast for FY24 to be in the range of 6-6.8 %.
- Private consumption in H1 is highest since FY15 and this has led to a boost to production activity resulting in enhanced capacity utilisation across sectors.
- The Capital Expenditure of Central Government and crowding in the private Capex led by strengthening of the balance sheets of the Corporates is one of the growth driver of the Indian economy in the current year.
- The credit growth to the MSME sector was over 30.6 per cent on average during Jan-Nov 2022.
- Retail inflation is back within RBI's target range in November 2022.
- Indian Rupee performed well compared to other Emerging Market Economies in Apr-Dec2022.
- Direct Tax collections for the period April-November 2022 remain buoyant.
- Enhanced Employment generation seen in the declining urban unemployment rate and in the faster net registration in Employee Provident Fund.
- Economic growth to be boosted from the expansion of public digital platforms and measures to boost manufacturing output.

### **3.4 India's Medium Term Growth Outlook: with Optimism and Hope**

- Indian economy underwent wide-ranging structural and governance reforms that strengthened the economy's fundamentals by enhancing its overall efficiency during 2014-2022.
- With an underlying emphasis on improving the ease of living and doing business, the reforms after 2014 were based on the broad principles of creating public goods, adopting trust-based governance, co-partnering with the private sector for development, and improving agricultural productivity.
- The period of 2014-2022 also witnessed balance sheet stress caused by the credit boom in the previous years and one-off global shocks, that adversely impacted the key macroeconomic variables such as credit growth, capital formation, and hence economic growth during this period.
- This situation is analogous to the period 1998-2002 when transformative reforms undertaken by the government had lagged growth returns due to temporary shocks in the economy. Once these shocks faded, the structural reforms paid growth dividends from 2003.

- Similarly, the Indian economy is well placed to grow faster in the coming decade once the global shocks of the pandemic and the spike in commodity prices in 2022 fade away.
- With improved and healthier balance sheets of the banking, non-banking and corporate sectors, a fresh credit cycle has already begun, evident from the double-digit growth in bank credit over the past months.
- Indian economy has also started benefiting from the efficiency gains resulting from greater formalisation, higher financial inclusion, and economic opportunities created by digital technology-based economic reforms.
- Thus Chapter 2 of the Survey shows that India's growth outlook seems better than in the pre-pandemic years, and the Indian economy is prepared to grow at its potential in the medium term.

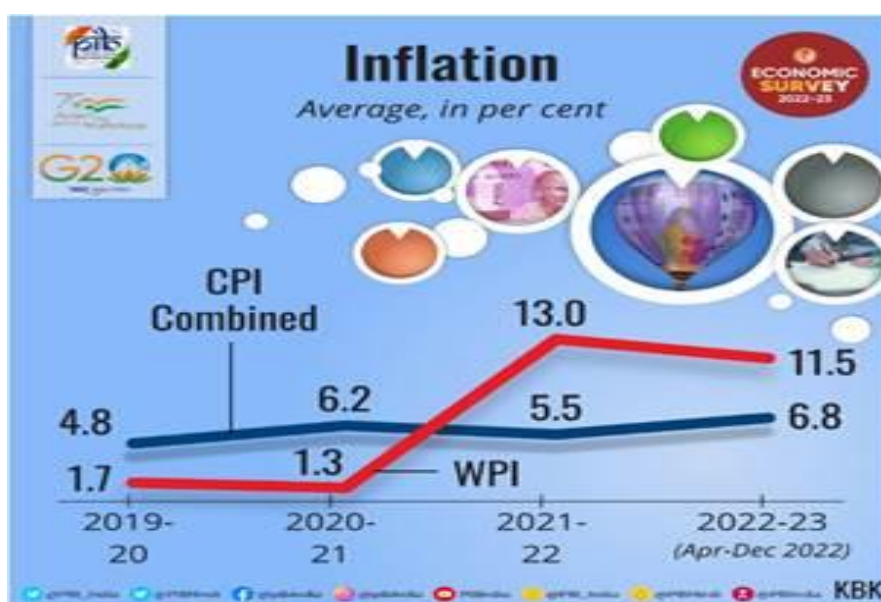
### **3.5 Fiscal Developments: Revenue Relish**

- The Union Government finances have shown a resilient performance during the year FY23, facilitated by the recovery in economic activity, buoyancy in revenues from direct taxes and GST, and realistic assumptions in the Budget.
- The Gross Tax Revenue registered a YoY growth of 15.5 per cent from April to November 2022, driven by robust growth in the direct taxes and Goods and Services Tax (GST).
- Growth in direct taxes during the first eight months of the year was much higher than their corresponding longer-term averages.
- GST has stabilised as a vital revenue source for central and state governments, with the gross GST collections increasing at 24.8 per cent on YoY basis from April to December 2022.
- Union Government's emphasis on capital expenditure (Capex) has continued despite higher revenue expenditure requirements during the year. The Centre's Capex has steadily increased from a long-term average of 1.7 per cent of GDP (FY09 to FY20) to 2.5 per cent of GDP in FY22 PA.
- The Centre has also incentivised the State Governments through interest-free loans and enhanced borrowing ceilings to prioritise their spending on Capex.
- With an emphasis on infrastructure-intensive sectors like roads and highways, railways, and housing and urban affairs, the increase in Capex has large-scale positive implications for medium-term growth.
- The Government's Capex-led growth strategy will enable India to keep the growth-interest rate differential positive, leading to a sustainable debt to GDP in the medium run.

### **3.6 Monetary Management and Financial Intermediation: A Good Year**

- The RBI initiated its monetary tightening cycle in April 2022 and has since raised the repo rate by 225 bps, leading to moderation of surplus liquidity conditions.

- Cleaner balance sheets led to enhanced lending by financial institutions.
- The growth in credit offtake is expected to sustain, and combined with a pick-up in private capex, will usher in a virtuous investment cycle.
- Non-food credit offtake by scheduled Commercial Banks (SCBs) has been growing in double digits since April 2022.
- Credit disbursed by Non-Banking Financial Companies (NBFCs) has also been on the rise.
- The Gross Non-Performing Assets (GNPA) ratio of SCBs has fallen to a seven-year low of 5.0.
- The Capital-to-Risk Weighted Assets Ratio (CRAR) remains healthy at 16.0.
- The recovery rate for the SCBs through Insolvency and Bankruptcy (IBC) was highest in FY22 compared to other channels.



### Prices and Inflation: Successful Tight-Rope Walking

- While the year 2022 witnessed a return of high inflation in the advanced world after three to four decades, India caps the rise in prices.
- While India's retail inflation rate peaked at 7.8 per cent in April 2022, above the RBI's upper tolerance limit of 6 per cent, the overshoot of inflation above the upper end of the target range in India was however one of the lowest in the world.
- The government adopted a multi-pronged approach to tame the increase in price levels
- Phase wise reduction in export duty of petrol and diesel
- Import duty on major inputs were brought to zero while tax on export of iron ores and concentrates increased from 30 to 50 per cent

- Waived customs duty on cotton imports w.e.f 14 April 2022, until 30 September 2022
- Prohibition on the export of wheat products under HS Code 1101 and imposition of export duty on rice
- Reduction in basic duty on crude and refined palm oil, crude soyabean oil and crude sunflower oil
- The RBI's anchoring of inflationary expectations through forward guidance and responsive monetary policy has helped guide the trajectory of inflation in the country.
- The one-year-ahead inflationary expectations by both businesses and households have moderated in the current financial year.
- Timely policy intervention by the government in housing sector, coupled with low home loan interest rates propped up demand and attracted buyers more readily in the affordable segment in FY23.
- An overall increase in composite Housing Price Indices (HPI) assessment and Housing Price Indices market prices indicates a revival in the housing finance sector. A stable to moderate increase in HPI also offers confidence to homeowners and home loan financiers in terms of the retained value of the asset.
- India's inflation management has been particularly noteworthy and can be contrasted with advanced economies that are still grappling with sticky inflation rates.

### **3.7 Social Infrastructure and Employment: Big Tent**

- Social Sector witnessed significant increase in government spending.
- Central and State Government's budgeted expenditure on health sector touched 2.1% of GDP in FY23 (BE) and 2.2% in FY22 (RE) against 1.6% in FY21.
- Social sector expenditure increases to Rs. 21.3 lakh crore in FY23 (BE) from Rs. 9.1 lakh crore in FY16.
- Survey highlights the findings of the 2022 report of the UNDP on Multidimensional Poverty Index which says that 41.5 crore people exit poverty in India between 2005-06 and 2019-20.
- The Aspirational Districts Programme has emerged as a template for good governance, especially in remote and difficult areas.
- eShram portal developed for creating a National database of unorganised workers, which is verified with Aadhaar. As on 31 December 2022, a total of over 28.5 crore unorganised workers have been registered on eShram portal.
- JAM (Jan-Dhan, Aadhaar, and Mobile) trinity, combined with the power of DBT, has brought the marginalised sections of society into the formal financial system, revolutionising the path of transparent and accountable governance by empowering the people.
- Aadhaar played a vital role in developing the Co-WIN platform and in the transparent administration of over 2 billion vaccine doses.

- Labour markets have recovered beyond pre-Covid levels, in both urban and rural areas, with unemployment rates falling from 5.8 per cent in 2018-19 to 4.2 per cent in 2020-21.
- The year FY22 saw improvement in Gross Enrolment Ratios (GER) in schools and improvement in gender parity. GER in the primary-enrolment in class I to V as a percentage of the population in age 6 to 10 years - for girls as well as boys have improved in FY22.
- Due to several steps taken by the government on health, out-of-pocket expenditure as a percentage of total health expenditure declined from 64.2% in FY14 to 48.2% in FY19.
- Infant Mortality Rate (IMR), Under Five mortality rate (U5MR) and neonatal Mortality Rate (NMR) have shown a steady decline.
- More than 220 crore COVID vaccine doses administered as on 06 January, 2023.
- Nearly 22 crore beneficiaries have been verified under the Ayushman Bharat Scheme as on 04 January, 2023. Over 1.54 lakh Health and Wellness Centres have been operationalized across the country under Ayushman Bharat.

### **3.8 Climate Change and Environment: Preparing to Face the Future**

- India declared the Net Zero Pledge to achieve net zero emissions goal by 2070.
- India achieved its target of 40 per cent installed electric capacity from non-fossil fuels ahead of 2030.
- The likely installed capacity from non-fossil fuels to be more than 500 GW by 2030 resulting in decline of average emission rate by around 29% by 2029-30, compared to 2014-15.
- India to reduce emissions intensity of its GDP by 45% by 2030 from 2005 levels.
- About 50% cumulative electric power installed capacity to come from non-fossil fuel-based energy resources by 2030.
- A mass movement LIFE– Life style for Environment launched.
- Sovereign Green Bond Framework (SGrBs) issued in November 2022.
- RBI auctions two tranches of ₹4,000 crore Sovereign Green Bonds (SGrB).
- National Green Hydrogen Mission to enable India to be energy independent by 2047.
- Green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum to be developed by 2030. Cumulative reduction in fossil fuel imports over ₹1 lakh crore and creation of over 6 lakh jobs by 2030 under the National green Hydrogen Mission. Renewable energy capacity addition of about 125 GW and abatement of nearly 50 MMT of annual GHG emissions by 2030.



- The Survey highlights the progress on eight missions under the NAP on CC to address climate concerns and promote sustainable development.
- Solar power capacity installed, a key metric under the National Solar Mission stood at 61.6 GW as on October 2022.
- India becoming a favored destination for renewables; investments in 7 years stand at USD 78.1 billion.
- 62.8 lakh individual household toilets and 6.2 lakh community and public toilets constructed (August 2022) under the National Mission on Sustainable Habitat.

### **3.9 Agriculture and Food Management**

- The performance of the agriculture and allied sector has been buoyant over the past several years, much of which is on account of the measures taken by the government to augment crop and livestock productivity, ensure certainty of returns to the farmers through price support, promote crop diversification, improve market infrastructure through the impetus provided for the setting up of farmer-producer organisations and promotion of investment in infrastructure facilities through the Agriculture Infrastructure Fund.
- Private investment in agriculture increases to 9.3% in 2020-21.
- MSP for all mandated crops fixed at 1.5 times of all India weighted average cost of production since 2018.
- Institutional Credit to the Agricultural Sector continued to grow to 18.6 lakh crore in 2021-22
- Foodgrains production in India saw sustained increase and stood at 315.7 million tonnes in 2021-22.
- Free foodgrains to about 81.4 crore beneficiaries under the National Food Security Act for one year from January 1, 2023.
- About 11.3 crore farmers were covered under the Scheme in its April-July 2022-23 payment cycle.
- Rs 13,681 crores sanctioned for Post-Harvest Support and Community Farms under the Agriculture Infrastructure Fund.
- Online, Competitive, Transparent Bidding System with 1.74 crore farmers and 2.39 lakh traders put in place under the National Agriculture Market (e-NAM) Scheme.
- Organic Farming being promoted through Farmer Producer Organisations (FPO) under the Paramparagat Krishi Vikas Yojana (PKVY).
- India stands at the forefront to promote millets through the International Year of Millets initiative.

### 3.10 Industry: Steady Recovery

- Overall Gross Value Added (GVA) by the Industrial Sector (for the first half of FY 22-23) rose 3.7 per cent, which is higher than the average growth of 2.8 per cent achieved in the first half of the last decade.
- Robust growth in Private Final Consumption Expenditure, export stimulus during the first half of the year, increase in investment demand triggered by enhanced public capex and strengthened bank and corporate balance sheets have provided a demand stimulus to industrial growth.
- The supply response of the industry to the demand stimulus has been robust.
- PMI manufacturing has remained in the expansion zone for 18 months since July 2021, and Index of Industrial Production (IIP) grows at a healthy pace.
- Credit to Micro, Small and Medium Enterprises (MSMEs) has grown by an average of around 30% since January 2022 and credit to large industry has been showing double-digit growth since October 2022.
- Electronics exports rise nearly threefold, from US \$4.4 billion in FY19 to US \$11.6 Billion in FY22.
- India has become the second-largest mobile phone manufacturer globally, with the production of handsets going up from 6 crore units in FY15 to 29 crore units in FY21.
- Foreign Direct Investment (FDI) flows into the Pharma Industry has risen four times, from US \$180 million in FY19 to US \$699 million in FY22.
- The Production Linked Incentive (PLI) schemes introduced across 14 categories, with an estimated capex of ₹4 lakh crore over the next five years, to plug India into global supply chains. Investment of ₹47,500 crores has been seen under the PLI schemes in the FY22, which is 106% of the designated target for the year. Production/sales worth ₹3.85 lakh crore and employment generation of 3.0 lakh have been recorded due to PLI schemes.
- Over 39,000 compliances have been reduced and more than 3500 provisions decriminalized as of January 2023.

### Services: Source of Strength

- The services sector is expected to grow at 9.1% in FY23, as against 8.4% (YoY) in FY22.
- Robust expansion in PMI services, indicative of service sector activity, observed since July 2022.



- India was among the top ten services exporting countries in 2021, with its share in world commercial services exports increasing from 3 per cent in 2015 to 4 per cent in 2021.
- India's services exports remained resilient during the Covid-19 pandemic and amid geopolitical uncertainties driven by higher demand for digital support, cloud services, and infrastructure modernization.
- Credit to services sector has grown by over 16% since July 2022.
- US\$ 7.1 billion FDI equity inflows in services sector in FY22.
- Contact-intensive services are set to reclaim pre-pandemic level growth rates in FY23.
- Sustained growth in the real estate sector is taking housing sales to pre-pandemic levels, with a 50% rise between 2021 and 2022.
- Hotel occupancy rate has improved from 30-32% in April 2021 to 68-70% in November 2022.
- Tourism sector is showing signs of revival, with foreign tourist arrivals in India in FY23 growing month-on-month with resumption of scheduled international flights and easing of Covid-19 regulations.
- Digital platforms are transforming India's financial services.
- India's e-commerce market is projected to grow at 18 per cent annually through 2025.

### **3.11 External Sector**

- Merchandise exports were US\$ 332.8 billion for April-December 2022.
- India diversified its markets and increased its exports to Brazil, South Africa and Saudi Arabia.
- To increase its market size and ensure better penetration, in 2022, CEPA with UAE and ECTA with Australia come into force.
- India is the largest recipient of remittances in the world receiving US\$ 100 bn in 2022. Remittances are the second largest major source of external financing after service export
- As of December 2022, Forex Reserves stood at US\$ 563 bn covering 9.3 months of imports.
- As of end-November 2022, India is the sixth largest foreign exchange reserves holder in the world.
- The current stock of external debt is well shielded by the comfortable level of foreign exchange reserves.
- India has relatively low levels of total debt as a percentage of Gross National Income and short-term debt as a percentage of total debt.

### **3.12 Physical and Digital Infrastructure**

#### **Government's Vision for Infrastructure Development**

##### **Public Private Partnerships**

- In-Principal Approval granted to 56 projects with Total Project Cost of ₹57,870.1 crore under the VGF Scheme, from 2014-15 to 2022-23.
- IIPDF Scheme with ₹150 crore outlay from FY 23-25 was notified by the government on 03 November, 2022.

##### **National Infrastructure Pipeline**

- 89,151 projects costing ₹141.4 lakh crore under different stages of implementation
- 1009 projects worth ₹5.5 lakh crore completed
- NIP and Project Monitoring Group (PMG) portal linkage to fast-track approvals/ clearances for projects

##### **National Monetisation Pipeline**

- ₹ 9.0 lakh crore is the estimated cumulative investment potential.
- ₹ 0.9 lakh crore monetisation target achieved against expected ₹0.8 lakh crore in FY22.
- FY23 target is envisaged to be ₹1.6 lakh crore (27 per cent of overall NMP Target)

##### **GatiShakti**

- PM GatiShakti National Master Plan creates comprehensive database for integrated planning and synchronised implementation across Ministries/ Departments.
- Aims to improve multimodal connectivity and logistics efficiency while addressing the critical gaps for the seamless movement of people and goods.

##### **Electricity Sector and Renewables**

- As on 30 September 2022, the government has sanctioned the entire target capacity of 40 GW for the development of 59 Solar Parks in 16 states.
- 17.2 lakh GWh electricity generated during the year FY22 compared to 15.9 lakh GWh during FY21.
- The total installed power capacity (industries having demand of 1 Mega Watt (MW) and above) increased from 460.7 GW on 31 March 2021 to 482.2 GW on 31 March 2022.

### **3.13 Making Indian Logistics Globally Competitive**

- National Logistics Policy envisions to develop a technologically enabled, integrated, cost-efficient, resilient, sustainable and trusted logistics ecosystem in the country for accelerated and inclusive growth.
- Rapid increase in National Highways (NHs) /Roads Construction with 10457 km NHs/roads constructed in FY22 compared to 6061 km in FY16.

- Budget expenditure increased from ₹1.4 lakh crore in FY20 to ₹2.4 lakh crore in FY23 giving renewed push to Capital expenditure.
- 2359 Kisan rails transported approximately 7.91 lakh tonnes of perishables, as of October 2022.
- More than one crore air passengers availed the benefit of the UDAN scheme since its inception in 2016.
- Near doubling of capacity of major ports in 8 years.
- Inland Vessels Act 2021 replaced 100-year-old Act to ensure hassle free movement of Vessels promoting Inland Water Transport.

### **3.14 India's Digital Public Infrastructure**

#### **Unified Payment Interface (UPI)**

- UPI-based transactions grew in value (121 per cent) and volume (115 per cent) terms, between 2019-22, paving the way for its international adoption.

#### **Telephone and Radio - For Digital Empowerment**

- Total telephone subscriber base in India stands at 117.8 crore (as of Sept,22), with 44.3 per cent of subscribers in rural India.
- More than 98 per cent of the total telephone subscribers are connected wirelessly.
- The overall tele-density in India stood at 84.8 per cent in March 22.
- 200 per cent increase in rural internet subscriptions between 2015 and 2021.
- Prasar Bharati (India's autonomous public service broadcaster) - broadcasts in 23 languages, 179 dialects from 479 stations. Reaches 92 per cent of the area and 99.1 per cent of the total population.

#### **Digital Public Goods**

- Achieved low-cost accessibility since the launch of Aadhaar in 2009
- Under the government schemes, MyScheme, TrEDS, GEM, e-NAM, UMANG has transformed market place and has enabled citizens to access services across sectors
- Under Account Aggregator, the consent-based data sharing framework is currently live across over 110 crore bank accounts.
- Open Credit Enablement Network aims towards democratising lending operations while allowing end-to-end digital loan applications
- National AI portal has published 1520 articles, 262 videos, and 120 government initiatives and is being viewed as viewed as a tool for overcoming the language barrier e.g. 'Bhashini'.

- Legislations are being introduced for enhanced user privacy and creating an ecosystem for standard, open, and interoperable protocols underlining robust data governance.

## 4. ENVIRONMENT

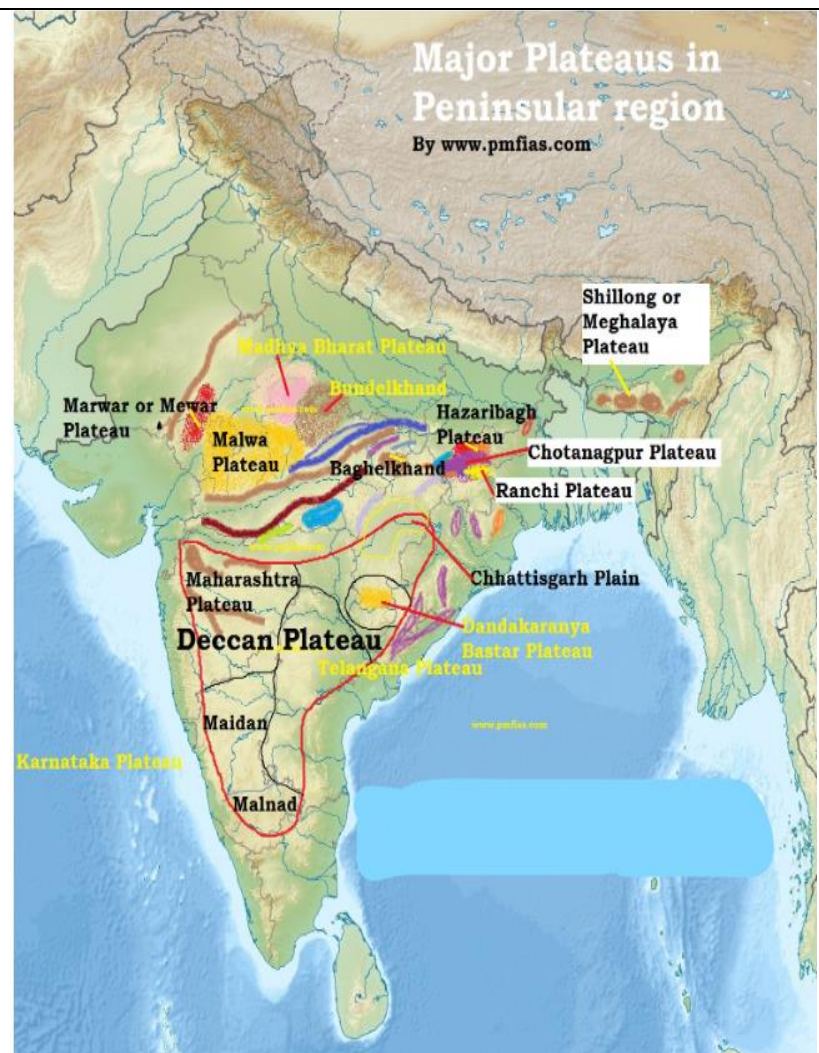
### 4.1 NEW PLATEAU TYPE DISCOVERED IN MAHARASHTRA

#### Why in News?

- Recently, a rare basalt plateau has been discovered in Western Ghat's the Thane region of Maharashtra.
- Plateaus are dominant landscapes in Western Ghats. They are classified as a type of rocky outcrop.
- Rocky outcrops are geological features that protrude above the surface of surrounding land.
- They are formed by weathering that happens at different rates, causing the less weathered rock to remain exposed.
- They are found in most climate zones and vegetation types on all continents.
- Significance of rocky outcrops Support high levels of species diversity and endemism.
- They have seasonal water availability, limited soil and nutrients, making them ideal to in most climate zones and vegetation types on all continents vide critical breeding sites for many top-order mammalian and avian predators; nesting sites for colonial species such as seabirds, bats and swifts

#### About Maharashtra plateau

- The Maharashtra Plateau lies in Maharashtra. It forms the northern part of the Deccan Plateau. Much of the region is underlain by basaltic rocks of lava origin [Most of the Deccan Traps lies in this region]. The area looks like a rolling plain due to weathering.
- Basalt is an igneous rock that is formed from the quick cooling of lava rich in magnesium and iron. It has a very fine-grained structure. E.g, the Deccan plateau. These rocks are also sources of phosphorus (P), potassium (K), calcium (Ca), and several micronutrients essential for plant nutrition.



**Importance of Plateau:**

There are lots of benefits of the world's plateaus both to man and to the subjective well-being of the earth's surface. Some of the significant benefits of plateaus are:

- **Mineral deposits:** Plateaus are rich in mineral deposits that can be mined by man to earn a living. Most minerals that are found on plateaus are valuable and have a monetary value such as gold and diamond. The minerals can be sold to earn money which can then be used to make a living.
- **Waterfalls:** In most areas occupied by plateaus, there are waterfalls as well as river falls. As water is a basic human need, such places will act as sources of drinking waters as well as water for other valuable activities.
- **Extensive grasslands:** Most plateaus are characterized by plenty of grass. The places are therefore crucial for the nomadic lifestyle since the grass is essential animal food. The green pastures on the plateaus are a perfect match for the growth and rearing of domestic animals.
- **Fertile soils:** The volcanic plateaus which are formed as a result of the flow of lava are known to be very productive. Volcanoes consist of fertile soils which are suitable for farming and other agricultural activities.
- **Tourist attraction:** Most plateaus have scenic spot-like features which act as tourist attraction sites. The grand canyons, as well as the numerous waterfalls which are found in most high plateaus, are the perfect examples of tourist attraction features on plateaus. With the attractions, the residents of such areas can earn foreign revenues from the sites.

**4.2 GOVERNMENT-MODIFIED WILDLIFE FUND RULES FOR KEY INFRA PROJECTS****Why in News:**

- Recently, Centre has exempted road, rail, and transmission line projects from having to deposit 2% the cost of the Wildlife Management Plan (WMP) and 0.5% of total project cost towards Soil and Moisture Conservation Plan (SMCP).
- WMP and SMCP are prepared in accordance with conditions stipulated by the Ministry of Environment Forest and Climate Change (MoEF&CC).
- Earlier, MoEF&CC made it mandatory for all projects to deposit this cost for obtaining final forest clearance under **Forest Conservation Act (FCA) 1980**.
- Now cost for WMP and SMCP will be proportionate to extent of forest land involved instead of total project cost.



**Forest Conservation Act (FCA) 1980.**

- FCA, 1980 regulates deforestation in the country.
- It was enacted after State Government's failure resulted in the diversion of forest land without any regard to environmental consideration.
- Key provisions of the act
- It prohibits the felling of forests for any non-forestry use without prior clearance by the central government.
- The clearance process includes seeking consent from local forest rights holders and from wildlife authorities.
- In T N Polavaram case (1996), Supreme Court expanded coverage of FCA, 1980 to all areas that satisfied the dictionary definition of a forest; Previously, FCA applied largely to reserve forests and national parks.

**4.3 Global status of black soil: Report of FAO (Food and Agricultural Organization).****Why in News?**

- Recently, global status of black soil report has published by Food and Agricultural Organization.

**About Black Soil:**

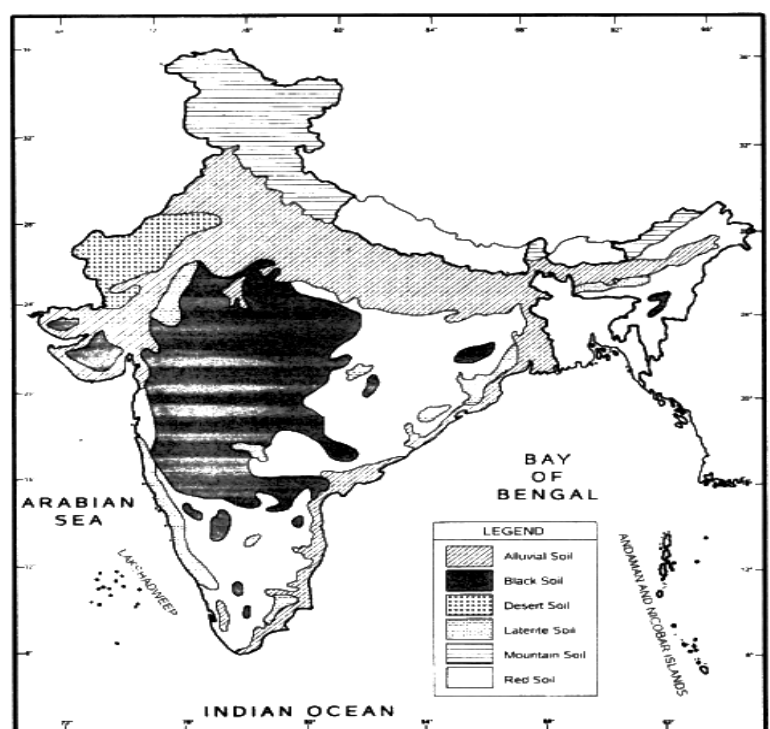
- As per report, Black soils are mineral soils which have a black surface horizon, enriched with organic carb that is at least 25 cm deep.
- Black colour is a result of accumulation of organic matter originating from numerous dying roots of gramineous vegetation in a process known as melanisation.

**Status of Black soil in India –**

- Black soils occupy 725 million hectares of the land surface and constitute 5.6 percent of global soils but contain 8.2 percent of the world's soil organic carbon (SOC) stocks.
- In India it is spread mostly across interior Gujarat, Maharashtra, Karnataka, and Madhya Pradesh on the Deccan lava plateau and the Malwa Plateau.

**Threats to Black soil**

- Loss of organic matter through both conversion of natural landscapes to

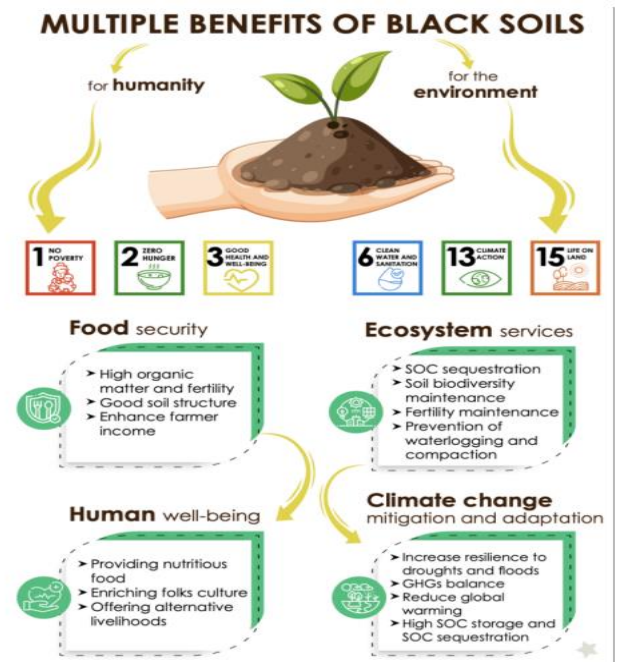
**Map 19: India - Soil Types**

agriculture and by continuing mismanagement of cultivated black soils.

- Wind erosion is a particular issue in black soils of former grasslands as the drier climates in these soils are naturally susceptible to high rates of wind erosion.

### Solutions suggested

- Preservation of the natural vegetation cover on black soils under grassland, forest, and wetland vegetation.
- Adoption of sustainable soil management approaches on cropped black soils



## 4.4 UNITED NATIONS (UN) WATER SUMMIT ON GROUNDWATER (GW) 2022

### Why in News?

- United Nations (UN) Water Summit on Groundwater (GW) 2022 concluded in Paris
- Summit was organised by UN-Water, UNESCO, and International Groundwater Resources Assessment Centre (IGRAC) to bring attention to groundwater at highest international level.
- Summit will mark the completion of “Groundwater: Making the invisible visible” campaign run by UN-Water throughout 2022.

- **UN-Water:** It is UN inter-agency coordination mechanism for all freshwater and sanitation related matters.

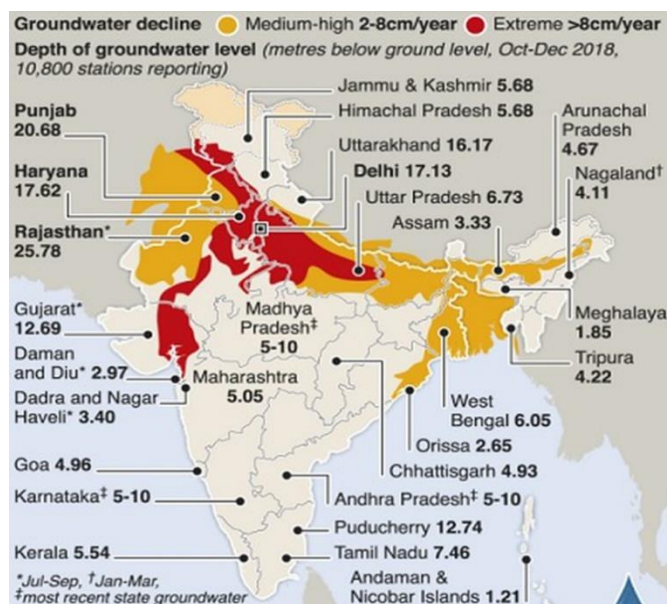
**IGRAC:** It is UNESCO Centre that works under World Meteorological Organisation (WMO), and financially supported by Netherlands.

- It specializes in regional- and transboundary-level assessment and monitoring of GW resources.
- One of IGRAC’s flagship products is Global Groundwater Information System (GGIS).

- Summit uses UN World Water Development Report 2022 as a baseline and SDG 6 Global Acceleration Framework (GAF) to define actions towards more responsible and sustainable use and protection of this vital natural resource.
- In 2020, five pillars of SDG 6 GAF released namely data and information, capacity development, innovation, finance and governance.

**Recommendations by Report to promote GW:**

- Improve exploration, monitoring and analysis of GW resources to manage them by identifying how much GW we can extract, where and when.
- Protect Aquifers recharge areas from pollution. o Ensuring groundwater access to all, helping to achieve SDG.

**Ground water status of India:**

- GW is water stored in rocks and soil. It accounts for 99% of liquid freshwater on Earth.
- India is largest user of GW with a fourth of total global withdrawal.

**Concern with GW:**

- Depletion of water tables, saltwater encroachment, drying of aquifers, water logging and salinity, etc.

**4.5 Indian Star Tortoise****Why in news?**

- The research report said the species is facing twin challenges of a threat to its habitat loss at one level and loss of its genetic diversity at the other.
- It calls for a proper conservation strategy to combat the fragmented distribution and explicitly recommends intensive genetic screening of founder individuals or isolated adult colonies by implementing scientific breeding.

**About the Indian star tortoise:**

- **Location:** Indian star tortoise is found in the central and Southern parts of India, in West Pakistan and Sri Lanka.
- Conservation status:

- **IUCN Status:** Vulnerable
- **Convention on International Trade in Species (CITES):** Appendix I
- **Wild Life Protection Act 1972:** Schedule IV
- **Threat:** The highly fragmented habitat of the species, is greatly influenced by an increased level of urbanisation and agricultural practices throughout its range.
- Star Tortoises, with their distinct star-like markings on the shell, are found in dry lowlands of India, Pakistan and Sri Lanka

#### **Conservation Efforts:**

- At the 18th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES CoP18) held in 2019, Indian Star Tortoise was up-listed to Appendix I from Appendix II owing to its over-exploitation.



#### **4.6 Revised draft of standards for firms to self-report environmental impact**

##### **Why in News?**

- Recently, the draft has been published for public comment by the Global Sustainability Standards Board (GSSB).
- GSSB is the independent standard-setting body of the Global Reporting Initiative (GRI) Biodiversity Standard.
- GRI is a global entity that helps businesses take responsibility for their impacts on biodiversity.
- GRI Standards are designed to be used by organisations to report on their impacts on the economy, the environment and society.
- GRI disclosures on biodiversity were last revised in 2006
- These standards will play a major role as the 'post2020 Global Biodiversity Framework' (adopted by United Nations Convention Biological Diversity) will define collective commitments to reverse the loss of biodiversity for all relevant stakeholders.

##### **Key Proposals include:**

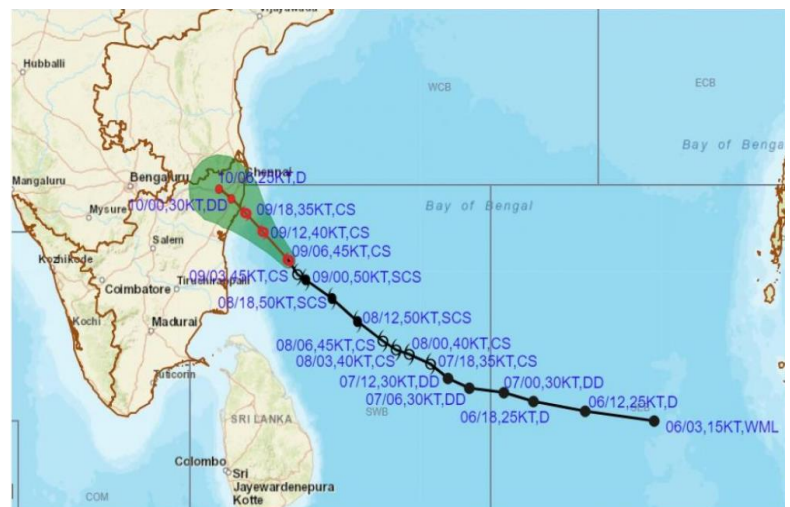
- Reflect reporting throughout the supply chain

- Help organisations prioritise attention on their most significant impacts.
- Add new disclosures to connect with the drivers of biodiversity loss.
  - o Introduce requirements for biodiversity-related human rights impacts.
- Emphasise location-specific data to ensure businesses are transparent about the sites.

#### 4.7 Cyclone Mandous

##### Why in News?

- Recently, the region of Tamil Nadu and neighbouring areas, south coastal Andhra Pradesh and Rayalaseema are bracing for heavy rainfall due to cyclone Mandous. Cyclon Mandous made nomenclature by UAE.
- Tropical cyclones are violent storms that originate over warm ocean waters near equator.



##### Favourable conditions

- Large sea surface with temperature higher than 27° C.
- Presence of the Coriolis force.
- Small variations in the vertical wind speed.
- A pre-existing weak low-pressure area or low-level cyclonic circulation.
- Upper divergence above the sea level system.

#### 4.8 The Wildlife (Protection) Amendment Act, 2022

##### Why in News?

- Recently, the Wildlife (Protection) Amendment Act, 2022 was enacted to amend the WLPA, 1972 to incorporate more species protected under the law.

##### About Wildlife (Protection) Act (WLPA), 1972:

- The act provides for the protection of wild animals, birds, and plants with a view to ensuring the ecological and environmental security of the country.
- It empowers the State to declare protected areas, under four categories- National Parks, Wildlife Sanctuaries, Community Reserves and Conservation Reserves.
- Important bodies established under the act include
  - o National Board for Wildlife

- o National Tiger Conservation Authority
- o Central Zoo Authority
- The Act has created 6 schedules for specially protected plants (one), specially protected animals (four) and vermin species (one), which gave varying degrees of protection to classes of flora and fauna.

#### **About the Wildlife (Protection) Amendment Act (WLPA), 2022 :**

- 2022 act seeks to conserve and protect wildlife through better management of protected areas and implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

#### **Key Provisions of Amended Act 2022:**

- New Chapter VB for implementation of CITES

#### **Designation of authorities:**

- The Central government will designate Management Authority (MA)- responsible for issuance of permits and certificates for trade of scheduled specimens in accordance with the Convention.
  - o Scientific Authority- to advice MA on aspects related to impact on the survival of the specimens being traded.
- Identification mark to be used by the MA for a specimen, as per CITES. Modification or removal of the identification mark is prohibited.
- Registration certificate to be obtained by person possessing live specimens of scheduled animals from the MA.
- Breeders of species in Appendix I of Schedule IV required to make an application for license to the Chief Wildlife Warden within 90 days of the commencement of the amendment.
- Conditions for export, import, re-export and introduction from sea of scheduled specimens have been specified

#### **Rationalization of schedules**

##### **Number of schedules from 6 to 4 by:**

- Reducing the number of schedules for specially protected animals from 4 to 2.
- Inserting a new schedule for specimens listed in the Appendices under CITES (scheduled specimens).
- Removing the schedule for vermin species.
  - o Wild animals will be declared as Vermin by Central Government by the way of notification for any area and for a specified period.

**Control of sanctuaries**

- Chief Wildlife Warden will manage and protect sanctuaries in accordance with the management plans prepared as per guidelines of the central government.
- In case of sanctuaries falling under Scheduled Areas or areas where Forest Rights Act 2006 is applicable, the management plan for such sanctuary prepared after due consultation with the Gram Sabha concerned

**Increase in Penalties**

- For General violation increases to 1 lakh from Rs25,000.
- For specially protected animals increases to 25,000 from Rs10,000.

**Relaxation of certain restrictions**

- Filmmaking (without causing any adverse impact to the habitat for wildlife) as one of the purposes for which permits may be granted to enter or reside in a sanctuary.
- Certain activities such as, grazing or movement of livestock, bona fide use of drinking and household water by local communities etc. allowed without a permit in a sanctuary.

## 5. SCIENCE & TECHNOLOGY

### 5.1 SITE-DIRECTED NUCLEASE (SDN) TECHNOLOGY

#### Why in news?

- Recently, the Ministry of Environment Forests and Climate Change has **exempted SDN1 and SDN2 genome-edited plants** which are free of exogenous introduced DNA from the stringent regulations applicable to genetically modified or GM crops.

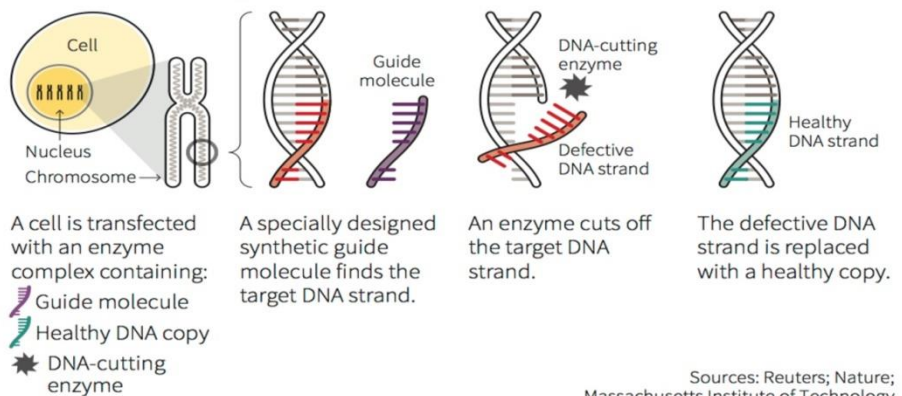
#### About Genome Editing:

- Genome editing is a group of technologies that give scientists the ability to change an organism's DNA.
- These technologies allow genetic material to be added, removed or altered at particular locations in the genome.

#### DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

#### HOW THE TECHNIQUE WORKS



#### About Site-Directed Nuclease (SDN) genome editing:

- Site-Directed Nuclease (SDN) genome editing involves the use of different DNA-cutting enzymes (nucleases) that are directed to cut the DNA at a predetermined location by a range of different DNA binding systems.
- The goal of SDN technology is to take advantage of the targeted DNA break and the host's natural repair mechanisms to introduce specific small changes at the site of the DNA break.

#### Three main SDN technologies currently in use include:

- 1) Meganucleases,
- 2) Zinc-Finger Nucleases (ZFNs)
- 3) Transcription Activator like Effector Nucleases (TALENs).

#### Three categories of SDN

- Depending on the nature of the edit that is carried out, the process is divided into three categories - Site-Directed Nuclease (SDN 1), SDN 2 and SDN 3:

#### SDN 1:

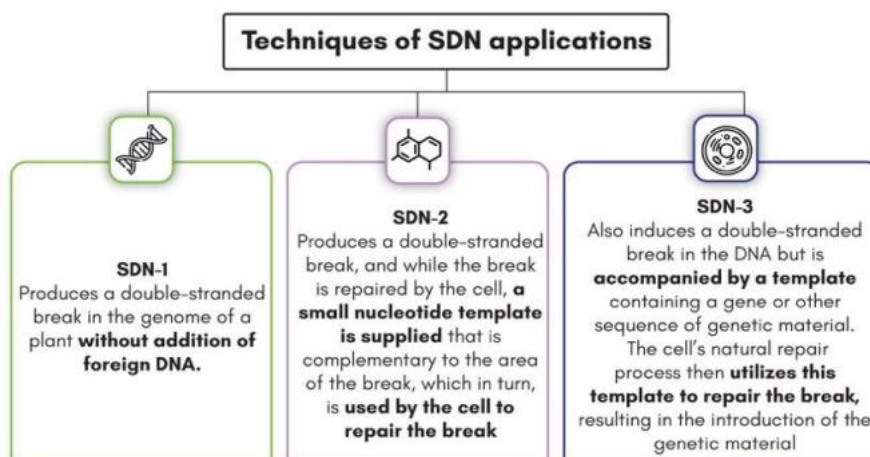
- It introduces changes in the host genome's DNA through small insertions/deletions without the introduction of foreign genetic material.



- Both SDN1 and SDN 2 do not involve alien genetic material and the result is indistinguishable from conventionally bred crop varieties.

**SDN 2:**

- SDN 2 edit involves using a small DNA template to generate specific changes.
- SDN-1 and SDN-2 do not use recombinant DNA, do not lead to the insertion of foreign DNA.



- As such, they do not produce new plant varieties that fall under the scope of the GMO legislation.
- SDN3 process involves genes of foreign origin.

**SDN3:**

- This process involves larger DNA elements or full-length genes of foreign origin which makes it similar to Genetically Modified Organisms (GMO) development.

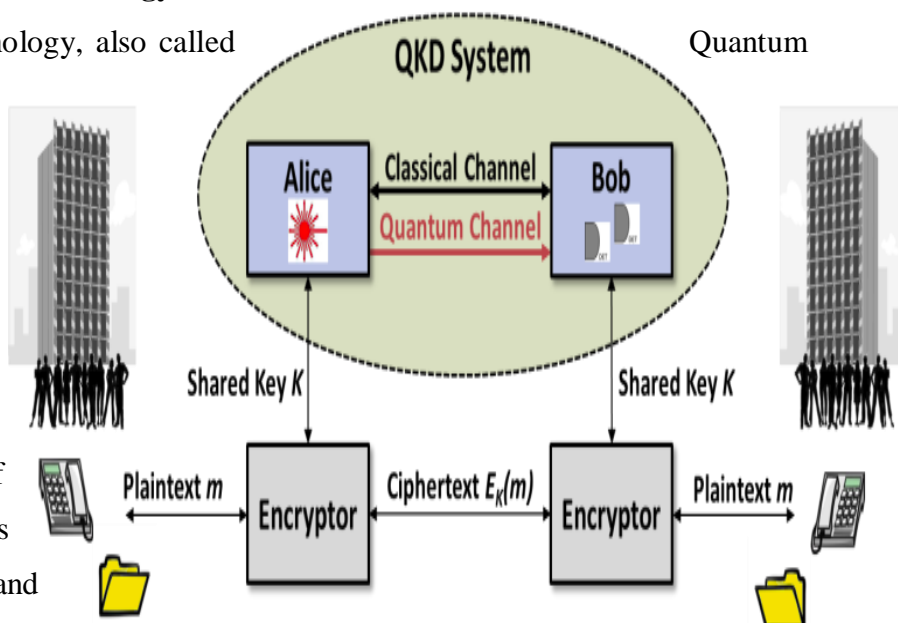
**5.2 Quantum Key Distribution Technology**

**Why in News?**

Recently, a joint team of scientists from Defence Research and Development Organisation (DRDO) and Indian Institute of Technology (IIT) Delhi, for the first time in the country successfully demonstrated the Quantum Key Distribution link.

**What is Quantum Key Distribution Technology?**

- Quantum Key Distribution Technology, also called Cryptography, is a mechanism to develop secure communication.
- It provides a way of distributing and sharing secret keys that are necessary for cryptographic protocols.
- Cryptography is the study of secure communications techniques that allow only the sender and intended recipient of a message to



view its contents.

- Cryptographic algorithms and protocols are necessary to keep a system secure, particularly when communicating through an untrusted network such as the Internet.
- The conventional cryptosystems used for data encryption rely on the complexity of mathematical algorithms, whereas the security offered by quantum communication is based on the laws of Physics.

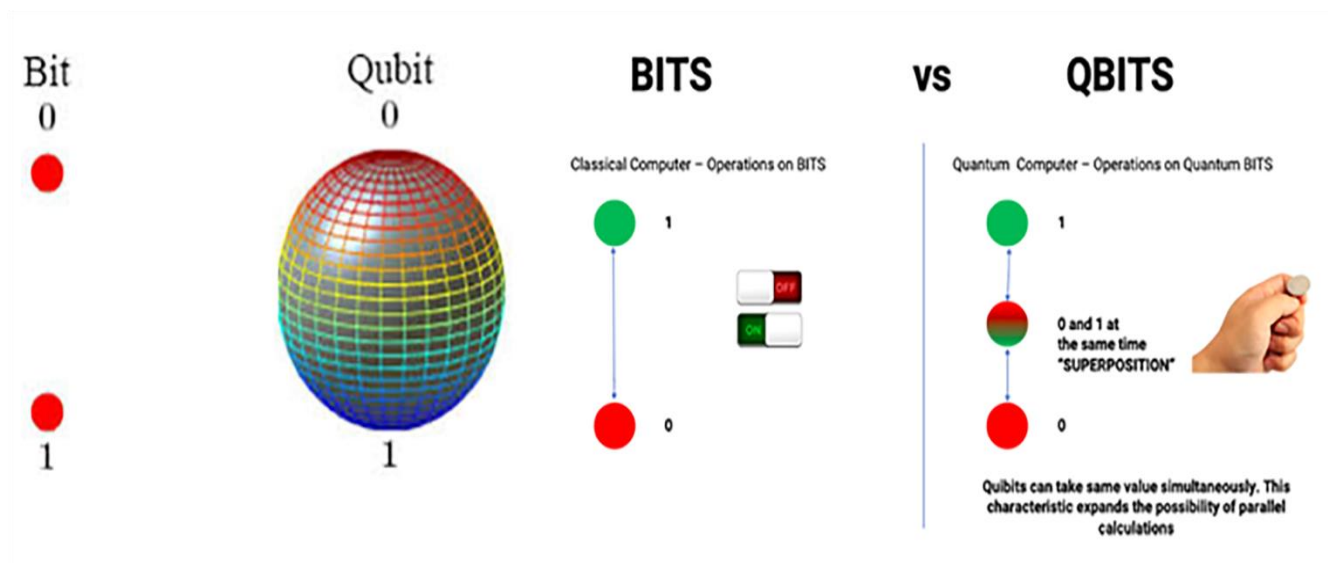
### How does the Quantum Key Distribution Work?

- In the QKD, encryption keys are sent as ‘qubits’ (or quantum bits) in an optical fiber.
- Qubits -- the equivalent of bits in a binary system.
- Optical fibers can transmit more data over longer distances and faster than other mediums. It works on the principle of Total Internal Reflections (TIR).
- QKD implementation requires interactions between legitimate users. These interactions need to be authenticated. This can be achieved through various cryptographic means.

### Significance of this technology:

- The encryption is “**unbreakable**” and that’s mainly because of the way data is carried via the photon. A photon cannot be perfectly copied and any attempt to measure it will disturb it. This means that a person trying to intercept the data will leave a trace.
- The implications could be huge for cybersecurity, making businesses safer, but also making it more difficult for governments to hack into communication.

### About Qubit



### 5.3 Indian Neutrino Observatory

#### In News

- Tamil Nadu has conveyed to the Supreme Court that it does not want the Indian Neutrino Observatory (INO) to be set up in a sensitive ecological zone in the Western Ghats.

#### Indian Neutrino Observatory Project

##### About:

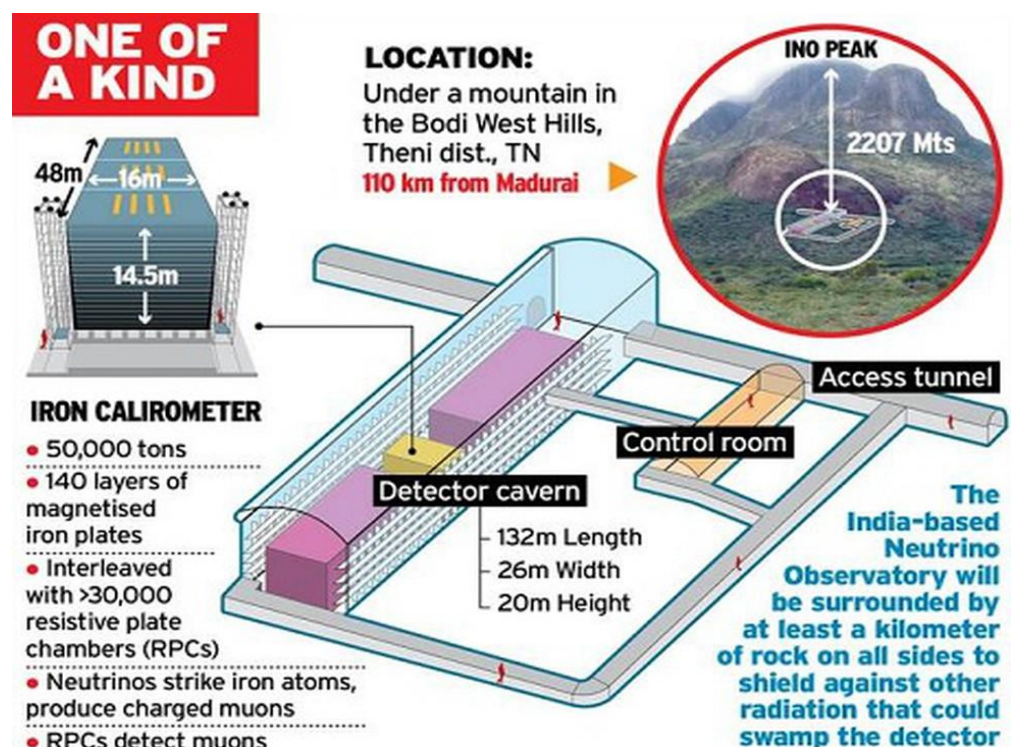
- The setting up of an INO was approved by the Union cabinet for studying fundamental particles called the neutrinos.
- 
- The location of the Observatory would be in the Bodi Hills region of the Theni district in Tamil Nadu.
- It is the latest in a series of neutrino detectors, neutrino factories and experiments being set up worldwide to promote research in particle physics.
- The Tata Institute of Fundamental Research is the nodal institution.

##### Features:

- It is an underground project and will comprise a complex of caverns.
- The main cavern, which will house the huge neutrino detector [50-kiloton magnetised iron calorimeter], will be 130 m long, 26 m wide, and 30 m high.
- Two smaller caverns will be used for setting up experiments for neutrino double detectors and dark matter.

##### Major Issues

- The proposed project area links the Periyar Tiger Reserve in Kerala with Srivilliputhur Meghamalai Tiger Reserve.
- Quarrying and construction activities will upset wild animals which use the corridor for seasonal migrations.
- The project in question



falls exactly on the hill slopes of this part of the Western Ghats, which align within it a significant tiger corridor, namely the Mathikettan-Periyar tiger corridor.

- The area is a significant watershed and catchment zone for the rivers Sambhal and Kottakudi.

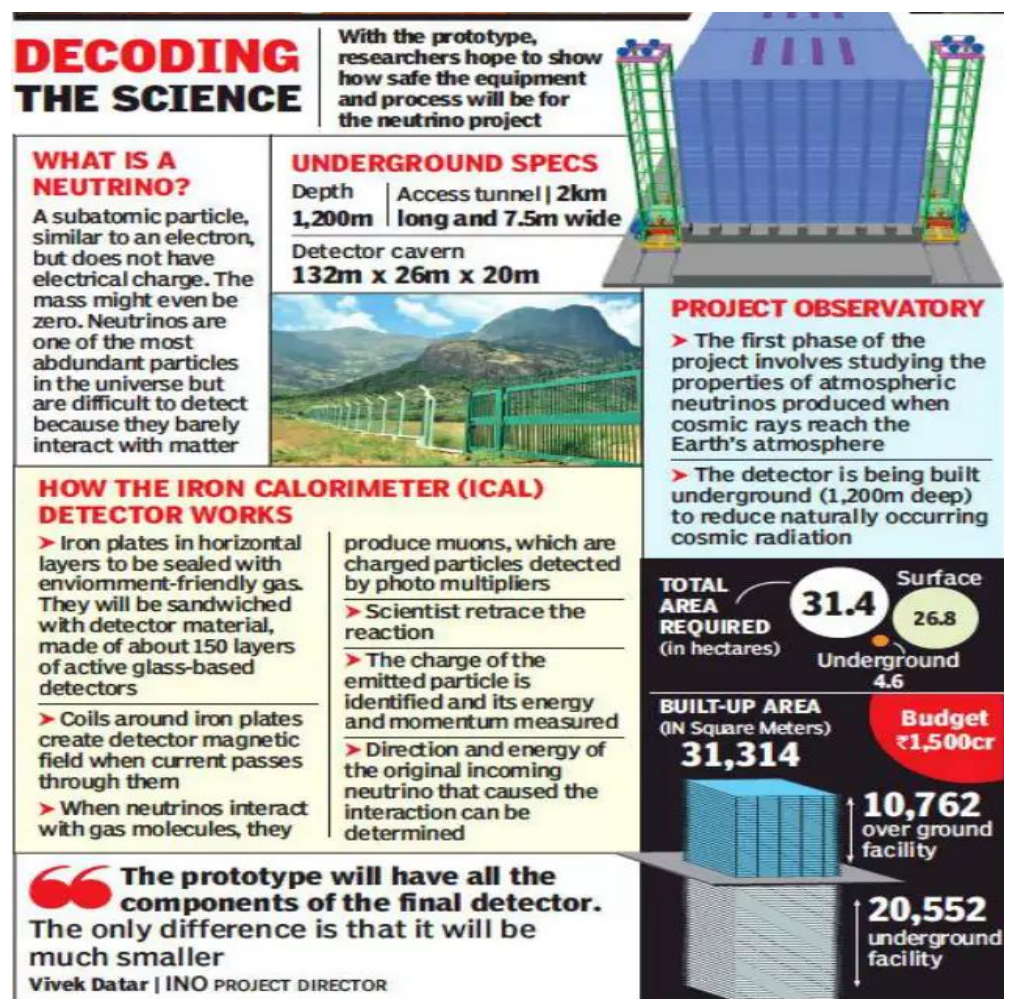
### What are Neutrinos?

- Protons, neutrons, and electrons are **tiny particles** that make up atoms.
- The **neutrino is also a tiny elementary particle**, but it is not part of the atom. Such particles are also found to exist in nature.
- Neutrino has a **very tiny mass**, no electric charge and spin half. It interacts very weakly with other matter particles.
- Neutrinos come from the **sun (solar neutrinos)** and other stars, cosmic rays that come from beyond the solar system, and from the Big Bang from which our Universe originated. They can also be produced in the lab.

Image Courtesy: TOI

### Why should the laboratory be situated underground?

- Neutrinos are difficult to detect in a laboratory because of their extremely weak interaction with matter.
- The background from **cosmic rays** (which interact much more readily than neutrinos) and **natural radioactivity** will make it almost impossible to detect them on the surface of the Earth. This is the reason most neutrino observatories are located deep inside the Earth's surface.



- The overburden provided by the Earth matter is **transparent to neutrinos** whereas most background from cosmic rays is substantially reduced depending on the depth at which the detector is located.

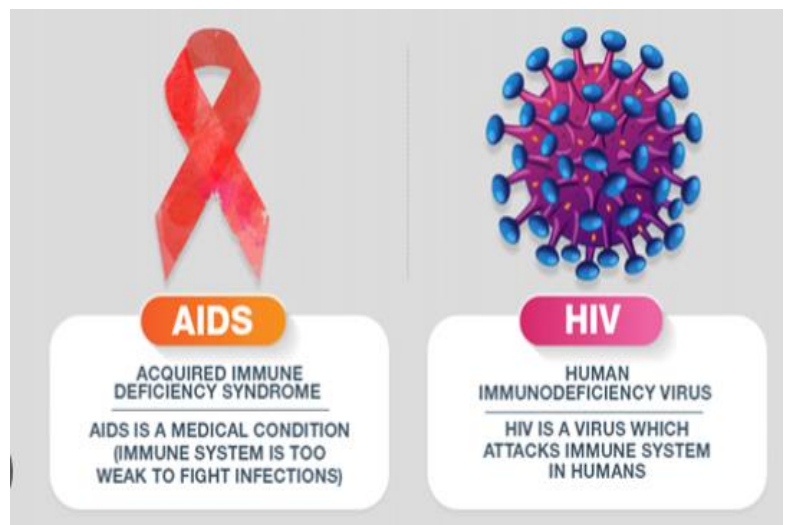
## 5.4 Human Immunodeficiency Virus (HIV)

### Why in News?

- Recently, a US patient with leukemia has become the first woman and the third person to date to be cured of HIV after receiving a stem cell transplant from a donor who was naturally resistant to the virus that causes Acquired Immunodeficiency Syndrome (AIDS).
- Leukemia is a blood cancer caused by a rise in the number of white blood cells in the body.
- AIDS is a set of symptoms or syndrome caused by HIV. But it is not necessary that a person infected with HIV will definitely develop AIDS.

### What is Human Immunodeficiency Virus (HIV)?

- HIV attacks CD4, a type of White Blood Cell (T cells) in the body's immune system.
- T cells are those cells that move around the body detecting anomalies and infections in cells.
- After entering the body, HIV multiplies itself and destroys CD4 cells, thus severely damaging the human immune system.
- Once this virus enters the body, it can never be removed.
- The CD4 count of a person infected with HIV reduces significantly. In a healthy body, CD4 count is between 500- 1600, but in an infected body, it can go as low as 200.



### What is the Prevalence of HIV/AIDS in India?

- As per the India HIV Estimation 2019 report, the estimated adult (15 to 49 years) HIV prevalence trend has been declining in India since the epidemic's peak in the year 2000 and has been stabilising in recent years.
- There were 23.48 lakh Indians living with HIV in 2019. Maharashtra had the maximum numbers followed by Andhra Pradesh and Karnataka.

### What are Stem Cells?

- Stem cells are special cells that can make copies of themselves and change into the many different kinds of cells that the body needs.

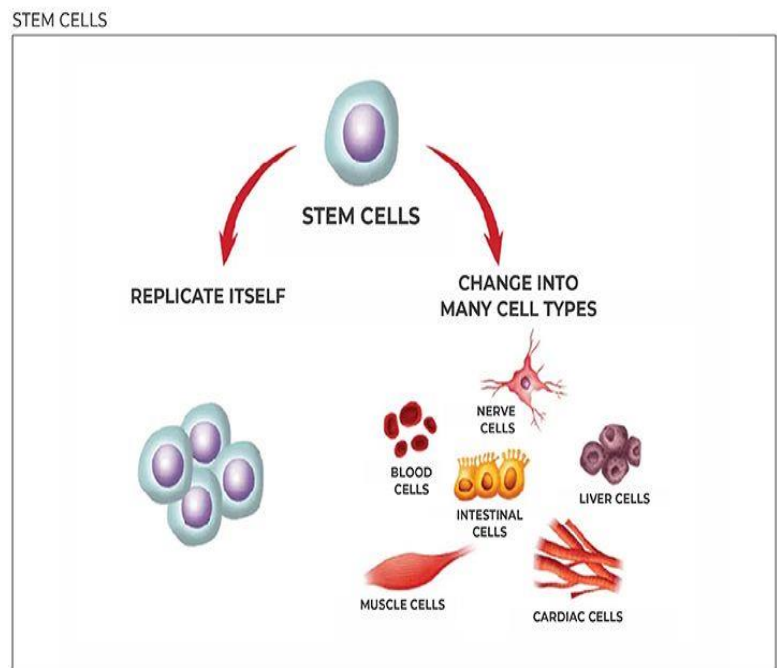
### They have two unique properties that enable them to do this:

- They can divide over and over again to produce new cells.

- As they divide, they can change into the other types of cell that make up the body.
- There are several kinds of stem cells and they are found in different parts of the body at different times.
- Cancer and cancer treatment can damage the hematopoietic stem cells. Hematopoietic stem cells are stem cells that turn into blood cells.

### Why are Stem Cells useful?

- **Research:** It helps in understanding the basic biology of how living things work and what happens in different types of cell during disease.
- **Therapy** – In replacing lost or damaged cells that the bodies can't replace naturally. What are the Three Main Types of Stem Cell?



### Embryonic Stem Cells:

- They supply new cells for an embryo as it grows and develops into a baby.
- These stem cells are said to be pluripotent, which means they can change into any cell in the body.

### Adult Stem Cells:

- They supply new cells as an organism grows and to replace cells that get damaged.
- Adult stem cells are said to be multipotent, which means they can only change into some cells in the body, not any cell, for example: z Blood (or 'haematopoietic') stem cells can only replace the various types of cells in the blood.

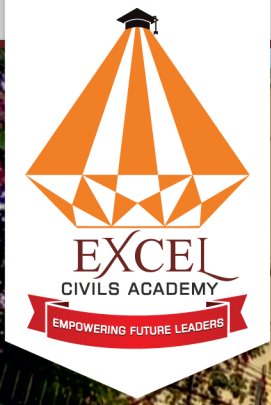
### Induced Pluripotent Stem Cells:

- 'Induced' means that they are made in the lab by taking normal adult cells, like skin or blood cells, and reprogramming them to become stem cells.
- Just like embryonic stem cells, they are pluripotent so they can develop into any cell type.

### What is Stem Cells Transplant?

- A bone marrow transplant is a medical treatment that replaces one's bone marrow with healthy cells. The replacement cells can either come from the person's own body or from a donor.

- A bone marrow transplant is also called a stem cell transplant or, more specifically, a hematopoietic stem cell transplant.
- Transplantation can be used to treat certain types of cancer, such as leukemia, myeloma, and lymphoma, and other blood and immune system diseases that affect the bone marrow.



CAMPUS



CORRIDOR

LECTURE HALL - 1



LIBRARY



LECTURE HALL- 2



CANTEEN



LECTURE HALL - 3

MENTORING ROOM



A Monthly Magazine from  
**EXCEL CIVILS ACADEMY**  
NTR Bhavan, Rd. No. 2, Banjara Hills, Hyderabad.  
Contact: 91004 33442, 91004 33445

[www.excelacademy.com](http://www.excelacademy.com)