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1ST OCTOBER 2022

2022

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NOVEMBER

2022

MONTHLY CURRENT AFFAIRS

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The Reliable IAS ®

NOVEMBER 2022

MONTHLY CURRENT AFFAIRS

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1. ART AND CULTURE

1.1 LAL BAHADUR SHASTRI

The Prime Minister paid floral tributes to former Prime Minister Shri Lal Bahadur Shastri at Parliament House today on the occasion of his birth anniversary.

About Lal Bahadur Shastri

- Shri Lal Bahadur Shastri was born on October 2, 1904 at Mughalsarai, a small railway town seven miles from Varanasi in Uttar Pradesh.
- His father was a school teacher who died when Lal Bahadur Shastri was only a year and half old.
- His mother, still in her twenties, took her three children to her father's house and settled down there.
- Lal Bahadur Shastri became more and more interested in the country's struggle for freedom from foreign yoke.
- He was greatly impressed by Mahatma Gandhi's denunciation of Indian Princes for their support of British rule in India.
- Lal Bahadur Shastri was sixteen when Gandhiji called upon his countrymen to join the Non-Cooperation Movement.
- He decided at once to give up his studies in response to the Mahatma's call.
- The decision shattered his mother's hopes.
- Lal Bahadur Shastri joined the Kashi Vidya Peeth in Varanasi, one of the many national institutions set up in defiance of the British rule.
- When the Congress Government was formed in 1946, he was called upon to play a constructive role in the governance of the country.
- He was appointed Parliamentary Secretary in his home State of Uttar Pradesh and soon rose to the position of Home Minister.
- He moved to New Delhi in 1951 and held several portfolios in the Union Cabinet – Minister for Railways; Minister for Transport and Communications, etc.
- He resigned his post as Minister for Railways because he felt responsible for a railway accident in which many lives were lost.
- In 1951, he was made the General Secretary of the All-India Congress Committee, with Jawaharlal Nehru as the President.
- He played an important role in the landslide successes of the Congress Party in the Indian General Elections of 1952, 1957 and 1962.
- Jawaharlal Nehru died in office on 27 May 1964 and left a void.
- The then Congress Party President K. Kamaraj was instrumental in making and installing Shastri as Prime Minister on 9 June.
- He commanded a great deal of respect in the Indian populace, and he used it to gain advantage in pushing the Green Revolution in India.
- Apart from emphasizing the Green Revolution, he was instrumental in promoting the White Revolution.
- The National Dairy Development Board was formed in 1965 during his tenure as Prime Minister.
- During the 22-day war with Pakistan, Lal Bahadur Shastri created the slogan of "Jai Jawan Jai Kisan".
- After the declaration of ceasefire, Shastri and Pakistani President Muhammad Ayub Khan attended a summit in Tashkent (former USSR, now in modern Uzbekistan).
- On 10 January 1966, Shastri and Khan signed the Tashkent Declaration.
- The next day Shastri, who had suffered two heart attacks earlier, died supposedly of a heart attack at 1:32AM
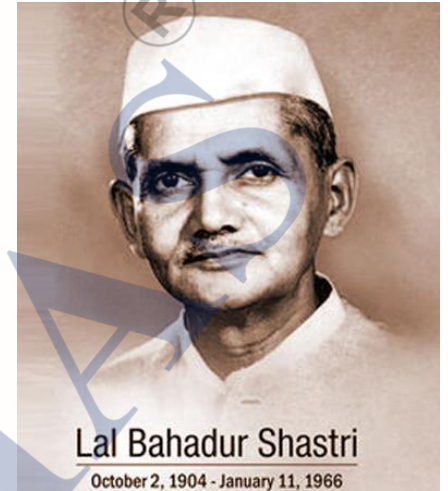
1.2 SHYAMJI KRISHNA VARMA

The Prime Minister paid tributes to revolutionary freedom fighter Shyamji Krishna Varma on his birth anniversary on 4th October.

Shyamji Krishna Varma

About Shyamji Krishna Varma

- Shyamji Krishna Varma was born on 4th October, 1857 in Kachchh district of Gujarat.
- He was an expert in Sanskrit and other languages.
- Shyamji Krishna Varma founded the Indian Home Rule Society, India House and The Indian Sociologist in London.
- The monthly Indian Sociologist became an outlet for nationalist ideas and through the Indian Home Rule Society, he criticised the British rule in India.
- Shyamji Krishna Varma became the first President of Bombay Arya Samaj.
- He also served as the Divan of a number of states in India.
- His deep knowledge of the Sanskrit language caught the attention of Monier Williams, a professor of the subject in Oxford University.
- He completed his education in India, before moving on to teach Sanskrit at the Oxford University.
- He later became a barrister in London, when in 1905 he was barred from practising law by the Inner Temple following charges of sedition for writing against the colonial government.
- He was posthumously reinstated by the Inner Temple in 2015 after the Inn's governing council noted that Varma "did not receive an entirely fair hearing".
- His inspirations were Bal Gangadhar Tilak, Swami Dayanand Saraswati and Herbert Spencer.
- After the outbreak of the First World War (1914-18), however, he moved to Geneva in Switzerland and spent the rest of his life there.
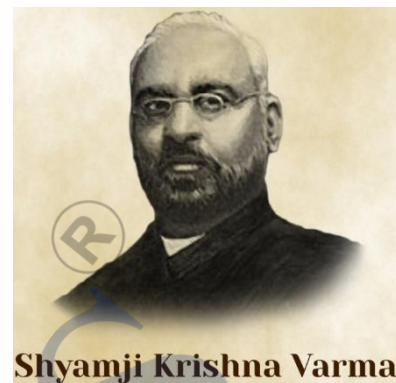
1.3 KULLU DUSSEHRA

- The Prime Minister participated in the Kullu Dussehra celebrations at the Dhalpur Ground of Kullu, Himachal Pradesh.
- The International Kullu Dussehra Festival was celebrated from 5th to 11th October 2022 this year.

Kullu Dussehra: Background

- The history of this spellbinding carnival dates back to the 17th century.
- The local king, Jagat Singh, installed an idol of Lord Raghunath on his throne on the advice of a Brahmin in order to eradicate his curse.
- After this, Lord Raghunath was declared as the ruling deity of the valley.
- According to traditions, a huge statue of the deity is now installed on a beautifully

  designed chariot, on the first day of the Festival, in the presence of other village gods and goddesses.
- The devotees after offering their prayers and respects to the deity take him to different sites across the Dhalpur Maidan.
- The Kullu Dussehra is slightly different from the Dussehra celebrated in other parts of the country.
- It is a week-long festival.
- The Festival commences on the tenth day of the rising moon, that is, Vijaya Dashmi and then continues for the next seven days.

1.4 SURYA MANDIR IN MODHERA

The Prime Minister recently visited the Surya Mandir in Modhera, Gujarat.

About Modhers Sun Temple

- The temple at Modhera is the most important of all sun-temples built in the whole of Gujarat.
- It enjoys the same significance as other two well-known sun-temples in Kashmir (Martand) and Orissa (Konark).
- Once a flourishing town and seaport, Modhera stands 24 km south of Anahitapataka (Patan) on the left bank of Pushpavati river.
- And the famous sun temple was constructed to the west of this river probably in 1026-27 A.D. during the reign of Chalukya King Bhima I (1022-1063 A.D.)
- A monument of incomparable beauty, this temple has been constructed in accordance with the shilpasastra
- The whole structure standing on a kharasila (basement) consisted of the garbhagrha (shrines) and guha -mandapa (a hall), a Sabha-mandapa or ranga-mandapa (assembly hall or outer hall/theatre hall), locally known as Sita Chavadi.
- In front of the temple is the kunda (sacred pond) now called the Ramakunda.
- Originally, there were some small subsidiary shrines, which have been destroyed.
- Every year, at the time of the equinoxes, the sun shines directly into this central shrine of the temple.

1.5 VALMIKI JAYANTI

Valmiki Jayanti also known as 'Pargat Diwas', the day is celebrated to commemorate the birth anniversary of the great author, Maharishi Valmiki.

About Maharishi Valmiki

- Valmiki is revered as the first poet of Sanskrit literature also known as the Adi Kavi.
- He was a great sage and author of the epic Ramayana which consists of 24,000 verses and 7 cantos (Kandas).
- Maharishi Valmiki in his early life was a highway dacoit named Ratnakar, who used to rob people.
- One day, he crossed paths with Narad Muni and witnessed a complete turn in his life.
- Afterwards, he began following Lord Rama and mediated for several years.
- He attained enlightenment and was renamed as Valmiki.

1.6 NATIONAL CONFERENCE ON PROJECT MAUSAM

Archaeological Survey of India (ASI) recently organised a two-day National Conference on Project Mausam – Jaladhipurayatra.

Key Points

- Project Mausam is the initiative of Ministry of Culture to be implemented by the Archaeological Survey of India (ASI) as the nodal agency.
- This is being done with research support of the Indira Gandhi National Centre for the Arts (IGNCA) and National Museum.
- The project was launched at UNESCO's 38th World Heritage Committee Meeting held at Doha, Qatar, in 2014.
- It is an attempt to understand the Monsoon Winds and other climatic factors-
    - And the ways in which these natural elements impacted, at different periods of history, the interactions between different countries in the Indian Ocean region.
- This project aims to explore the multi-faceted Indian Ocean 'world' – collating archaeological and historical research.
- The main objective of the project is to inscribe places and sites identified under Project Mausam as trans-national nomination for inscription on UNESCO's World Heritage List.
- Government of India has also proposed to establish cross cultural linkages and to revive historic maritime cultural and economic ties with 39 Indian Ocean countries.

1.7 LOK NAYAK SHRI JAYAPRAKASH NARAYAN

The Prime Minister, Shri Narendra Modi has paid tributes to Loknayak Jayaprakash Narayan on his birth anniversary.

About Lok Nayak Shri Jayaprakash Narayan

- He was born on October 11, 1902, in the remote village of Sitabdiara, Bihar.
- He quit college to join the non-cooperation movement, before going to study at the University of California, Berkeley, where he was influenced by the ideas of Karl Marx.
- He returned to India in 1929 and joined the freedom struggle and the Indian National Congress.
- JP would go onto become the founding members of the Congress Socialist Party (CSP).
- After independence took it out of the Congress and formed the Socialist Party.
- Later, it was merged with J B Kripalani's Kisan Mazdoor Praja Party to form the Praja Socialist Party.
- He became a Gandhian and was involved in the Bhoodan movement.
- JP sought to distance himself from electoral politics, opting to focus on social causes instead.
    - Parties, he believed, were centralised and susceptible to moral and financial corruption.
- He was leader of the Bihar movement and he became the symbol of opposition to Emergency.
    - The protests against corruption grew widespread, and students of Bihar began their movement in March 1974.
    - The students approached JP, who left his self-imposed political exile and led the movement.
    - At a rally in Patna on June 5, he called for Sampoorna Kranti (Total Revolution).
- When Indira Gandhi imposed Emergency on June 25, 1975, JP shifted his focus to opposing authoritarian rule and opposition parties looked to him for leadership.
- JP is celebrated for launching a popular, mass movement against the Indira Gandhi government.

- This led to the formation of the Janata Party government in the 1977 general election, the first non-Congress government in the country.

1.8 NANAJI DESHMUKH

Prime Minister recently paid tributes to Nanaji Deshmukh on his birth anniversary.

About Nanaji Deshmukh

- He was born on 11th October 1916 in Maharashtra's Hingoli district.
- His influences were Lokamanya Tilak and his nationalist ideology and Dr. Keshav Baliram Hedgewar.
- He actively participated in Acharya Vinoba Bhave's Bhoodan Movement.
- Deshmukh was the main force behind Jayaprakash Narayan's agitation for total revolution.
- He was a social reformer with focus on health, education and rural self-reliance.
- He established Chitarkoot Gramoday Vishwavidyalaya in Chitrakoot - India's first rural University and served as its Chancellor.
- He did great work towards the anti-poverty and minimum needs programme.
- He was one of the main architects of the Janata Party.
- He won in the 1977 Lok election from Balrampur (UP) Lok Sabha constituency.
- He was awarded Padma Vibhushan in 1999.
- In 2019, the President of India, conferred the Bharat Ratna upon him (posthumously) for his services to the nation.
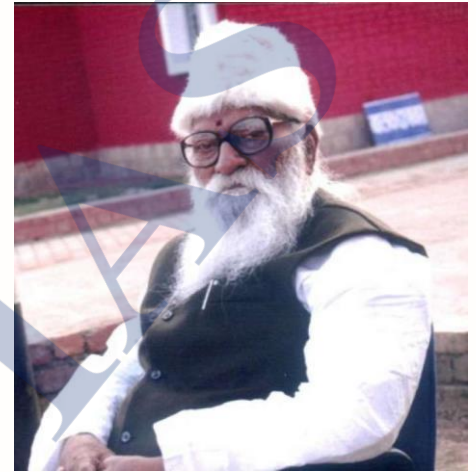
1.9 DR A. P. J. ABDUL KALAM

The President of India, along with the citizens of the country, paid homage to Dr A.P.J. Abdul Kalam, former President of India, on his birth anniversary.

About Dr A. P. J. Abdul Kalam

- Avul Pakir Jainelabdeen Abdul Kalam was the 11th President of the country from 2002 and 2007.
- He is also popularly known as the 'Missile Man' of India.
- He was born in Rameswaram of Madras Presidency, on 15 October 1931.
- Kalam used to sell newspapers as a child to add-on to his family's modest income.
- In 1955, he went to the Madras Institute of Technology to pursue aerospace engineering.
- His dream of becoming a fighter pilot was thwarted when he missed the qualifier by a narrow margin.
- After that, he got a job as a scientist at the Aeronautical Development Establishment of the Defence Research and Development Organisation (DRDO).
  - He also worked under eminent scientist Vikram Sarabhai.
- Kalam was transferred to the Indian Space Research Organisation (ISRO) in 1969.
- At ISRO, he was the Project Director of the satellite launch vehicle (SLV) that successfully deployed the satellite Rohini into orbit in 1980.
  - It was India's first SLV.
- Kalam also worked to develop the Polar Satellite Launch Vehicle (PSLV).
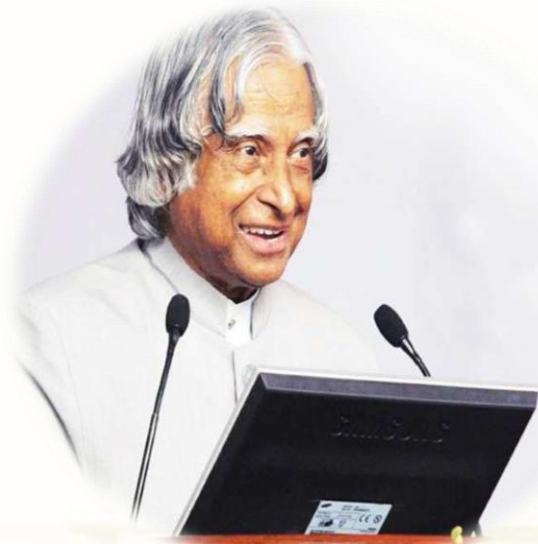
- He was also the director of two projects, Project Valiant and Project Devil for developing ballistic missiles from the SLV technology.
- From 1992 to 1999, Kalam was the Chief Scientific Adviser to the Prime Minister and the Secretary of the DRDO.
- Kalam was the Chief Project Coordinator during the Pokhran II tests.
- He received India's highest civilian honour Bharat Ratna in 1997.

1.10 OLDEST DOCK IN THE WORLD- LOTHAL

Recently, the Prime Minister has reviewed the construction of the National Maritime Heritage Complex (NMHC) site at Gujarat's Lothal.

About Lothal
- Lothal was one of the southernmost sites of the Indus Valley civilization, located in the Bhāl region of what is now the state of Gujarat.
- The port city is believed to have been built in 2,200 BC.
- Lothal was a thriving trade centre in ancient times, with its trade of beads, gems and ornaments reaching West Asia and Africa.
- The meaning of Lothal (a combination of Loth and (s) thal) in Gujarati is "the mound of the dead".
- According to the Archaeological Survey of India (ASI), Lothal had the world's earliest known dock, connecting the city to an ancient course of the Sabarmati river.

Note : Lothal was nominated in April 2014 as a UNESCO World Heritage Site, and its application is pending on the tentative list of UNESCO.

About National Maritime Heritage Complex (NMHC)
- The project began in March 2022, and is being developed at a cost of Rs 3,500 crore.
- It will have several innovative features such as Lothal mini-recreation, which will recreate Harappan architecture and lifestyle through immersive technology.
- It has four theme parks – Memorial theme park, Maritime and Navy theme park, Climate theme park, and Adventure and Amusement theme park.
- It will act as a center for learning and understanding India's maritime history.
- The NMHC is being developed with the aim of displaying India's diverse maritime heritage and also help Lothal emerge as a world-class international tourist destination.

1.11 KASHI TAMIL SANGAMAM
- The Indian Institute of Technology Madras along with the Banaras Hindu University will serve as knowledge partners for Kashi Tamil Sangamam.
- The initiative aims to bring the academic, economic, social and cultural relationship between Varanasi and Tamil Nadu to light.

Key Points
- The 'Kashi Tamil Sangamam' event will commence on November 16 and conclude on December 20.
- The month-long programme will have around 3,000 special guests from 12 different clusters.
  - These clusters include art, literature, spirituality and education.
- As a part of this programme, participants will be given the chance to attend academic sessions, visit places in and around Varanasi and Ayodhya, including the Ganga cruise.

காசி தமிழ் சங்கமம்
काशी तमिल संगमम्
KASHI TAMIL SANGAMAM

Note : An initiative by Government of India as a part of "Azadi ka Amrit Mahotsav" and to uphold the Spirit of "Ek Bharat Shreshta Bharat".

2. POLITY & GOVERNANCE

2.1 ECI LAUNCHES RADIO SERIES - 'MATDATA JUNCTION'

- Election Commission of India has launched Radio series - 'Matdata Junction' in collaboration with All India Radio for voter awareness.
- 52 Episodes of 15 minutes each to be broadcast every Friday on Vividh Bharati stations, FM Rainbow, FM Gold and Primary channels of AIR.
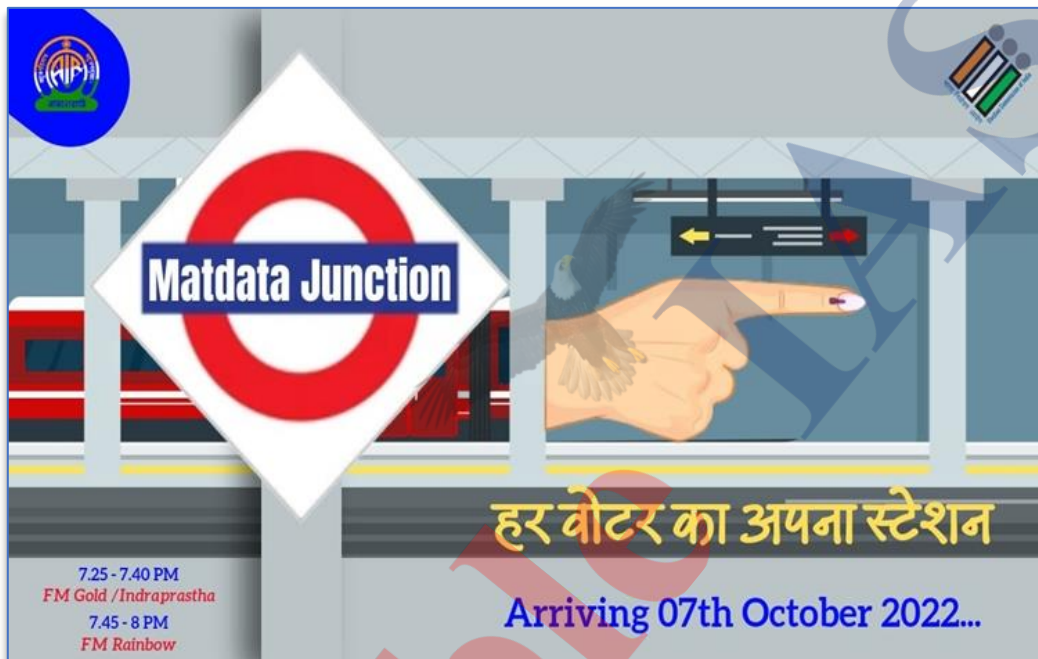
Key Points

- The theme of the first episode of the program is – Voter Registration.
- The programmes will be broadcast in 23 languages across 230 AIR channels.
- The Matdata Junction will cover all aspects of the Voter ecosystem.
- All 52 themes are aimed at encouraging all eligible citizens, especially the young and first time voters to vote.
  - This will help them make an informed decision during the elections.

2.2 PM-DEVINE SCHEME

- Recently, the Union Cabinet approved a new Scheme, Prime Minister's Development Initiative for North East Region (PM-DevINE).
- PM-DevINE was announced in the Union Budget 2022-23 to address development gaps in the North Eastern Region (NER).

About PM-DevINE Scheme

- The new Scheme, PM-DevINE, is a Central Sector Scheme with 100% central funding.
- It will be implemented by Ministry of Development of North Eastern Region (DoNER).
- The PM-DevINE Scheme will have an outlay of Rs.6,600 crore for the four year period from 2022-23 to 2025-26 (remaining years of 15th Finance Commission period).
- Efforts will be made to complete the PM-DevINE projects by 2025-26 so that there are no committed liabilities beyond this year.

- The objectives of PM - DevINE are to:
  - Fund infrastructure convergently, in the spirit of PM Gati Shakti;
  - Support social development projects based on felt needs of the NER;
  - Enable livelihood activities for youth and women;
  - Fill the development gaps in various sectors.
- A large portion of the funds are allocated for the construction of highways and rope-way systems
  - And also a significant portion has been allocated towards healthcare.
- More funds will be allocated to the states on a need basis.

2.3 PARLIAMENT COMMITTEES

Recently, reorganization of 22 Standing Committees took place.

About Parliament Committees

- A Parliamentary Committee is a panel of MPs that is appointed or elected by the House or nominated by the Speaker/Chairman.
- The committee works under the direction of the Speaker/chairman and it presents its report to the House or to the Speaker/chairman.
- Parliamentary Committees have their origins in the British Parliament.
- They draw their authority from Article 105 and Article 118.
  - Article 105 deals with the privileges of MPs.
  - Article 118 gives Parliament authority to make rules to regulate its procedure and conduct of business.

- Broadly there are two types of Parliamentary Committees– Standing Committees and Ad Hoc Committees.
  - The Standing Committees are permanent (constituted every year or periodically) and work on a continuous basis.
  - While the Ad Hoc Committees are temporary and cease to exist on completion of the task assigned to them.

2.4 RIGHT TO INFORMATION (RTI) ACT

According to a report, the backlog of appeals or complaints under the Right to Information (RTI) Act is steadily increasing in Information Commissions every year.

Key Findings of the Report

- At present, nearly 3.15 lakh complaints or appeals pending with 26 information commissions across India.
- The number of appeals and complaints pending in 2019 was 2, 18,347 which increased to 3, 14,323 in 2022.
- The highest number of pending cases were in Maharashtra followed by Uttar Pradesh, Karnataka, etc.
- Two out of 29 information commissions across the country are completely defunct.
  - Four of them are functioning without any commission head at the moment.
  - And only 5% of the positions are occupied by women.
- Jharkhand and Tripura have been completely defuncted for 29 months and 15 months respectively.
  - Manipur, Telangana, West Bengal and Andhra Pradesh are without chiefs.
- The commissions did not impose penalties in 95% of the cases where penalties were potentially imposable.
- The report also flags concerns regarding tardy disposal rates in several commissions and the lack of transparency in their functioning.
- Only 11 information commissions out of 29 provide e-filing facility for RTI applications or appeals, but only five are functional.

About RTI Act

- Right to Information Act 2005 mandates timely response to citizen requests for government information.
- It is an initiative taken by Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions.
- The basic object of the Right to Information Act is to empower the citizens, promote transparency and accountability in the working of the Government.

Right to Information (Amendment) Act, 2019

Rising backlogs

Data gathered by the Satark Nagrik Sangathan show that appeals and complaints pending with information commissions have steadily increased over the years

3 lakh

2,86,325

3,14,323

2 lakh

2,18,347

1 lakh

March 31, 2019   June 30, 2021   June 30, 2022

- It provided that the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall hold office for such term as prescribed by the Central Government.
- Before this amendment, their term was fixed for 5 years.
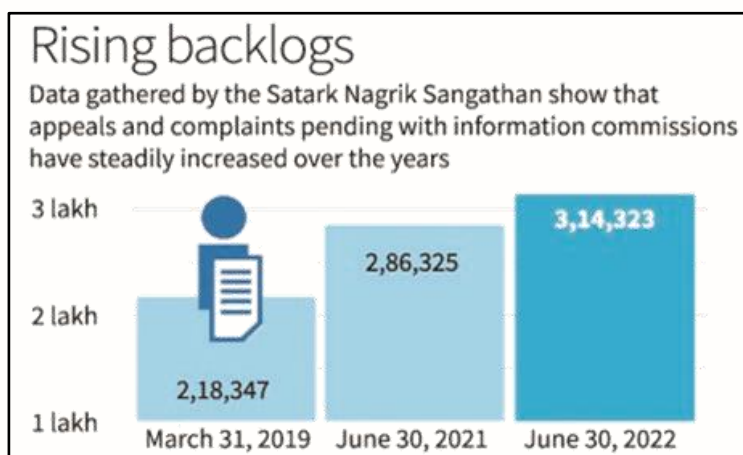
- It provided that the salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States) shall be such as prescribed by the Central Government.
- Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner.
- And that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in case of States).

2.5 THE PLACES OF WORSHIP ACT

Solicitor General told the Supreme Court that the validity of the Places of Worship Act, 1991, "may not be covered" by the opinion of its five-judge Constitution bench in the Ayodhya case.

What is the 1991 Places of Worship Act?

- The long title describes it as "An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August, 1947".
- The main objective of the Act is to maintain the religious character of any such place as it existed on the 15th day of August 1947 (at the time of Independence).
- Section 3 of the Act bars the conversion, in full or part, of a place of worship of any religious denomination into a place of worship of a different religious denomination.
- This bar is even for a different segment of the same religious denomination.
- The religious character of a place of worship "shall continue to be the same as it existed" on August 15, 1947.
- Thus, the act prohibits conversion of any place of worship or changing the religious character of any place from its status at the time of Independence.
- The act also stays any suit or legal proceeding with respect to the conversion of the religious character of any place of worship initiated after August 15, 1947.

Criticism of the Act

- The law has been challenged on the ground that it bars judicial review, which is a basic feature of the Constitution.
- The act imposes an "arbitrary irrational retrospective cutoff date," and abridges the right to religion of Hindus, Jains, Buddhists, and Sikhs.
- It bars the power of remedy of judiciary.

3. ENVIRONMENT AND ECOLOGY

3.1 WORLD HABITAT DAY 2022

World Habitat Day is celebrated annually on the first Monday of October.

- The event focuses on the state of human settlements and on the basic right of all to adequate shelter.

Key Points

- In 2022, World Habitat Day (WHD 2022) theme is "Mind the Gap. Leave No One and Place Behind".
  - The theme aims to looks at the problem of growing inequality and challenges in cities and human settlements.
- World Habitat Day 2022 seeks to draw attention to the growing inequalities and vulnerabilities that have been exacerbated by the triple 'C' crises — COVID-19, climate and conflict.
- According to the UN-Habitat's World Cities Report, the number of people affected was between 119 and 124 million in 2020, and between 143 and 163 million in 2021.
  - Tackling urban poverty and inequality have become an urgent global priority.
- In India, it was the Ministry of Housing and Urban Affairs (MoHUA) that celebrated World Habitat Day 2022 at Vigyan Bhawan.
  - The theme of World Habitat Day 2022 also resonates deeply with the Gandhian philosophy of 'Antyodaya se Sarvodaya'.

Background of World Habitat Day

- World Habitat Day was established in 1985 by the UN General Assembly through Resolution 40/202.
- World Habitat Day was first celebrated in 1986 with the theme "Shelter is My Right".
- Nairobi (Kenya) was the host city for the observance that year.

Scroll of Honour award

- The Habitat Scroll of Honour Award was launched by the United Nations Human Settlements Programme (U.N.-Habitat) in 1989.
- It is currently the most prestigious human settlements award in the world.
- Its aim is to acknowledge initiatives which have made outstanding contributions in various fields such as:
  - shelter provision, highlighting the plight of the homeless, leadership in post conflict reconstruction, and developing and improving the human settlements, etc.

3.2 CLIMATE RISK INDEX FOR MARINE LIFE

Recently, a new study was published titled Climate Risk Index for Marine Life.

- It captures the climate risk for nearly 25,000 marine species and their ecosystems.

Key Points

This new index lays the groundwork for supporting climate-smart approaches to managing and conserving marine life. Key Findings:

- **Altering Marine Ecosystems:**
  - Warming oceans and climate extremes are driving species into deeper, more northern and cooler locations.

- This is altering their behaviour and reconfiguring marine ecosystems in radical and unprecedented ways.

- **High Emissions Scenario:**
  - In the high emissions scenario, the global average ocean temperature will increase by 3-5 degrees Celsius by 2100.
  - Under this scenario, almost 90 % of the 25,000 species are at a "high" or "critical" climate risk.
  - The average species is at risk across 85 % of its geographic range.

- **Subtropical and Tropical Ecosystem:**
  - The risk is highest in the subtropical and tropical ecosystems that tend to be biodiversity hotspots.
  - And also in nearshore ecosystems that support 96% of the global fish catch.
  - Top predators like sharks and tunas are at significantly higher risk than species further down the food chain, like forage fishes.
  - Such predators can have massive effects on ecosystem structure and functioning.

- **Low-Income Nations:**
  - Under high emissions, climate risks for fished species such as cod and lobsters are consistently greater within the territories of low-income nations.
  - This is because people depend more on fisheries to meet their nutritional needs.
  - This represents yet another example of climate inequality.
  - In which low-income countries that have contributed the least to climate change are experiencing its worst impacts while having the lowest capacity to adapt to them.

- **Low Emissions Scenario:**
  - Under a low emissions scenario, average ocean temperatures are expected to increase by 1-2 degrees Celsius by 2100.
  - Under this future, there is a reduced climate risk for virtually all marine life (98.2 %).
  - The disproportionate risk for ecosystem structure, biodiversity, fisheries and low-income nations are greatly reduced or eliminated.
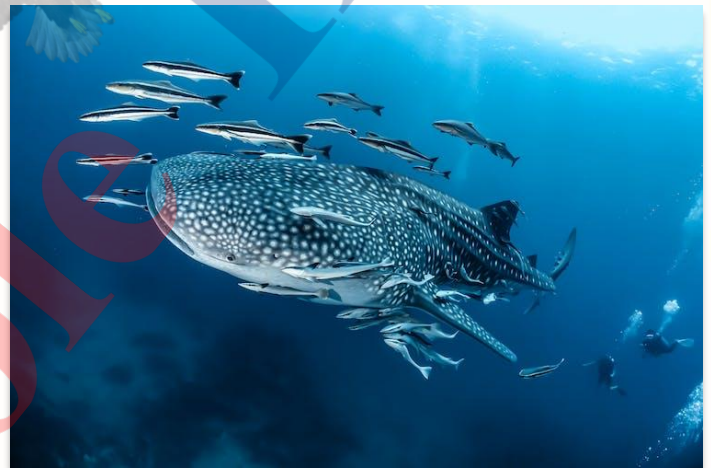
Possible Solutions

- Choosing a more sustainable path that prioritizes climate mitigation will lead to clear benefits for ocean life and people.
- Cutting emissions is the most direct approach to reducing climate risks.
- In addition to reducing emissions, it is imperative to simultaneously find ways to adapt to a warming climate to protect our oceans.
- There is a need to incorporate new methods and adaptation strategies, develop capacity in under-resourced parts of the world.
- The world should also carefully weigh the pros and cons of adaptation measures.

3.3 U.S.-INDIA STRATEGIC CLEAN ENERGY PARTNERSHIP

In a U.S.-India Strategic Clean Energy Partnership Ministerial Joint Statement, it was underscored the critical importance of bilateral clean energy engagement to strengthen energy security.

About U.S.-India Strategic Clean Energy Partnership (SCEP)

- US-India Strategic Clean Energy Partnership SCEP was launched during the ministerial meeting of the Petroleum and Natural Gas Ministry with the US Ministry of.
- It was launched in accordance with the US - India Climate and Clean Energy Agenda 2030 Partnership.
  - And was announced by both countries at the Leaders' Summit on Climate held last year i.e. 2021.
- SCEP inter-governmental engagement spreads across five pillars of cooperation –
- Power and Energy Efficiency,
- Responsible Oil and Gas,
  - Renewable Energy,
  - Sustainable Growth and
  - Emerging Fuels.
- The partnership also aims to support India in achieving its goal of installing 450GW of renewable energy capacity by 2030.

3.4 GRADED RESPONSE ACTION PLAN

Commission for Air Quality Management (CAQM) has recently said that GRAP will be enforced in Delhi NCR with immediate effect to combat deteriorating AQI in the region.

What is GRAP?

- A graded Response Action Plan is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold.
- **Background:**
  - It is based on a plan that was submitted by the Central Pollution Control Board (CPCB) in November 2016.
  - The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change.
- **There are various stages in GRAP.**
  - Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300), and On Wednesday, for instance, the AQI in Delhi was 211.

Fight against pollution
A look into the city's Graded Response Action Plan to fight air pollution

STAGE 1 MODERATE-TO-POOR QUALITY AIR (PM2.5 above 61µg/m3 or PM10 above 101µg/m3)
● Mechanized sweeping, washing roads with water
● Enforcing ban on firecrackers, increased scrutiny of vehicles for pollution standards

STAGE 2 VERY POOR AIR (PM2.5 above 121 µg/m3 or PM10 above 351 µg/m3)
● Ban on diesel generators
● Parking fee to surge by 3-4 times
● Stop use of coal/firewood in eateries
● Urge people with respiratory or cardiac problems to stay inside

STAGE 3 SEVERELY POLLUTED AIR (PM2.5 above 250µg/m3 or PM10 above 430µg/m3)
● Increase frequency of road cleaning and washing
● Shut down of brick kilns
● Restrictions on operation of coal-based power plants in NCR

STAGE 4 EMERGENCY (also known as severe+, PM2.5 above 300 µg/m3 or PM10 above 500µg/m3)
● Ban entry of trucks (except for essential items)
● Halt construction work
● Begin odd-even road scheme for private vehicles

BEGINNING FROM OCT 15
Some of these measures will already kick in from October 15. These are:
1 BAN ON DIESEL GENERATORS 2 WASHING OF ROADS 3 NIGHT PATROLS AT HOT SPOTS

  - The second, third and fourth stages will be activated three days ahead of the AQI reaching the 'very poor' category (301 to 400), 'severe' category (401 to 450) and 'severe +' category (above 450).
- **Data Source:**
  - For this, the CAQM is relying on air quality and meteorological forecasts by the Indian Institute of Tropical Meteorology (IITM) and the India Meteorological Department (IMD).

3.5 POST-FACTO ENVIRONMENTAL CLEARANCES

Recently, the Supreme Court has concluded that ex post facto (after being started) Environmental Clearances (EC) are acceptable.

- The court has concluded in response to a claim that a bio-medical treatment facility was set up and run without an EC and it raises concern over Environmental Degradation.

Key Points

- Ex post facto environmental clearance refers to allowing functioning of an industry or project which has started operating without obtaining the green clearance.
- A bench of SC observed that the Environment (Protection) Act, 1986, did not absolutely prohibit the grant of ex post facto environmental clearance.
- It should not be granted routinely, but in exceptional circumstances taking into account all relevant environmental factors.

What are the Related Concerns?

- A post facto assessment defeats the very purpose of Environment Impact Assessment (EIA).
  - This is because, in some cases, irreversible ecological damage will already have been committed with the commencement of operations.
- The industries are encouraged to commence operations without bothering for clearance and eventually get regularised by paying the penalty amount.
- It is likely to open a floodgate of violations and give rise to a situation where damage to the environment is irreversible.

What is Environment Impact Assessment?

- It can be defined as the study for predicting the effect of a proposed activity/project on the environment.
- It is statutory under the Environment Protection Act, 1986 for some projects.
- Process:
  - Screening based upon scales of investment, type of development, and location of the development is done.
  - Scoping is a process of detailing the Terms of Reference (ToR) of EIA meaning the main issues or problems in the development of a project.
  - Impact Prediction involves mapping the environmental consequences of the significant aspects of the project and its alternatives.
- The public mandatorily needs to be informed and consulted on the proposed development after the completion of the EIA report.

3.6 CLIMATE TIPPING POINTS

According to a major study, the climate crisis has driven the world to the brink of multiple "disastrous" tipping points.

- Climate Tipping Points or CTPs are markers of a larger climate system which when triggered beyond a threshold, perpetuates warming on its own.

Key Findings of the Study

- According to the Study, five dangerous tipping points may already have been passed due to the 1.1 degree Celsius of global heating caused by humanity to date.
- These include the following:
  - the collapse of Greenland's ice cap,
  - eventually producing a huge sea level rise,
  - the collapse of a key current in the north Atlantic,
  - disrupting rain upon which billions of people depend for food,
  - and an abrupt melting of carbon-rich permafrost.
- At 1.5 degree Celsius, possible tipping points include the following:
  - changes to vast northern forests,
  - the loss of almost all mountain glaciers,
  - the die-off of tropical coral reefs and
  - changes to the west African monsoon.
- In total, the researchers found evidence for 16 tipping points, with the final six requiring global heating of at least 2 degree Celsius to be triggered.
- The tipping points would take effect on timescales varying from a few years to centuries.
- At more than 2 degree Celsius, the nine global tipping points identified are:
  - the collapse of Greenland, West Antarctic, and two parts of the east Antarctic ice sheets,
  - the partial and total collapse of Atlantic Meridional Overturning Circulation (AMOC),
  - Amazon dieback, permafrost collapse and
  - winter sea ice loss in the Arctic.
- Other potential tipping points still being studied include the loss of ocean oxygen and major shifts in the Indian summer monsoon.

Greenland ice sheet — Ice loss accelerating

Arctic sea ice — Reduction in area

Permafrost — Thawing

Boreal forest — More fires and pests

Connectivity

Atlantic circulation — In slowdown since 1950s

Amazon rainforest — Frequent droughts

Coral reefs — Large-scale die-offs

Wilkes Basin, East Antarctica — Ice loss accelerating

West Antarctic ice sheet — Ice loss accelerating

Possible Suggestions

- The assessment provides strong scientific evidence for urgent action to mitigate climate change.
- Currently the world is heading toward ~2 to 3°C of global warming, at best, if all net-zero pledges and nationally determined contributions are implemented it could reach just below 2°C.
- This would lower tipping point risks somewhat but would still be dangerous as it could trigger multiple climate tipping points.

3.7 WORLD MIGRATORY BIRD DAY 2022

World Migratory Bird Day was recently celebrated on 08 October 2022.

- The theme of World Migratory Bird Day 2022 is "Light Pollution"

Key Points

- World Migratory Bird Day is a bi-annual global campaign organised to raise awareness about migratory birds, the need for their conservation, and the importance of the preservation of their habitat.
- It is celebrated on the second Saturday in May and then in October.
- This year it was celebrated on 14 May and 8 October 2022.
- Founding Partners of World Migratory Bird Day include:
    - The Convention on the Conservation of Migratory Species of Wild Animals
    - The Agreement on the Conservation of African-Eurasian Migratory Waterbirds
    - Environment for the Americas
- The 2022 global campaign is also being actively supported by other dedicated organizations, such as:
    - the East Asian Australasian Flyway Partnership (EAAFP) and Bird Life International (BLI).
- WMBD 2022 is addressing the growing issue of light pollution on these birds and actions on a global scale to help migrate these birds safely.
- Artificial lights are the cause of significant threats to migratory birds such as:
    - Distortion while flying at night
    - Collisions with buildings
    - Disruptions - in their ability to migrate long distances and in their internal clock.

What is Light Pollution?

- As per CMS, "light pollution refers to artificial light that alters the natural patterns of light and dark in ecosystems".
- The use of artificial light at night is increasing all over the world.
- From 2012 to 2016, artificially lit outdoor areas increased by 2.2% per year.

- Today, more than 80% of the world's population lives under a "lit sky", a figure closer to 99% in Europe and North America.

Impact of Light Pollution on Birds

- It can alter birds' behaviours, including migration, foraging and vocal communication.
- It also affects their activity levels and their energy expenditure, especially those which migrate at night.
- It attracts and disorients nocturnally migrating birds, which may end up circling in illuminated areas.
- This unnatural light-induced behaviour can mean they end up depleting their energy reserves and puts them at risk of exhaustion, predation and lethal collision.

3.8 WORLD SLOTH BEAR DAY

The first World Sloth Bear Day was observed on October 12, 2022.

- The objective is to generate awareness and strengthen conservation efforts around the unique bear species endemic to the Indian subcontinent.

Key Points

- The day was proposed by following two organisations:
  - Wildlife SOS India, an organisation involved in sloth bear conservation and protection for over two decades and
  - The (International Union for Conservation of Nature) IUCN.
- Species Survival Commission (SSC) sloth bear expert team accepted and declared the day to be celebrated worldwide.

WHAT IS A SLOTH BEAR?

Scientific Name:
Melursus ursinus

Family:
Ursidae

Lifespan in the Wild:
16 years on average

Length:
5 to 6 feet

Weight:
90 to 140 kgs

Habitat:
Grasslands, scrublands, dry and moist tropical forests

Geographic Range

India, Nepal, Sri Lanka, and presumably Bhutan

Behaviour:
Solitary, except during the breeding season

Diet:
Insects like ants, beetles, and termites, fruits, and honey

Threats:
Human-wildlife conflict, habitat fragmentation, hunting and poaching

Conservation Measures:
Protected under CITES Appendix I and Schedule I of the Indian Wildlife (Protection) Act, 1972

Estimated Sloth bear population in India is

6,000-10,000

IUCN Status

---- LC -- NT -- **VU** -- EN -- Cr -- EW -- EX ----

Vulnerable

About Sloth Bear

- Sloth bears primarily eat termites and ants, and unlike other bear species, they routinely carry their cubs on their backs.
- Presently Sloth bears are only found in the Indian subcontinent, Nepal and a sub-species in Sri Lanka.
- In India, these bears have existed for nearly two million years and have become a part of the history of the land.
- The Sloth bear is listed as 'Vulnerable' on the IUCN Red List.
- There are only 6,000 to 11,000 Sloth Bears left in the wild.
- Schedule I in Wildlife Protection Act.
- CITES – Appendix I.

3.9 LIVING PLANET REPORT 2022

Recently WWF released its biennial Living Planet report 2022 showing trends in global biodiversity and the health of the planet.

- This flagship WWF publication highlights that while conservation efforts are helping, urgent action is required if we are to reverse nature loss.
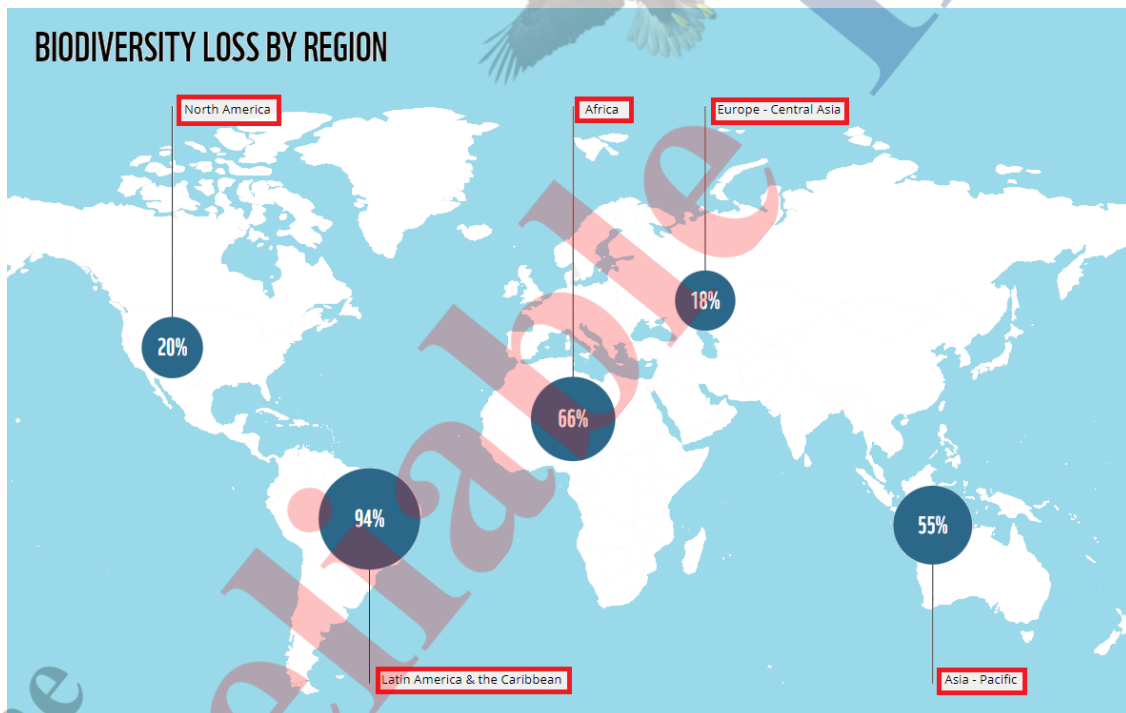
Key Points

- **Population decline in wildlife:**
  - It shows an average 69% decline in global vertebrate species populations, between 1970 and 2016.
  - In the Asia Pacific the decline stands at 45%.
  - Freshwater species populations globally were reduced by 83 per cent.
  - Cycads — an ancient group of seed plants — are the most threatened species, while corals are declining the fastest, followed by amphibians.
- **Region-specific Assessment:**
  - The highest decline (94 per cent) was in the Latin America and the Caribbean region.
  - Africa recorded a 66 per cent fall in its wildlife populations from 1970-2018.
- **Mangrove:**

- It continues to be lost to aquaculture, agriculture and coastal development at a rate of 13 per cent per year.
- Mangrove loss represents a loss of habitat for biodiversity and the loss of ecosystem services for coastal communities.
- **Corals:**
  - About 50% of warm water corals have already been lost.
  - Warming of 5 degrees Celsius will lead to a loss of 70-90% of warm water corals.
- **Sharks:**
  - The global abundance of 18 of 31 oceanic sharks has declined by 71% over the last 50 years.
  - By 2020 three-quarters of sharks and rays were threatened with extinction.
- Only 37% of rivers that are over 1,000 km long remain free-flowing in their natural state.
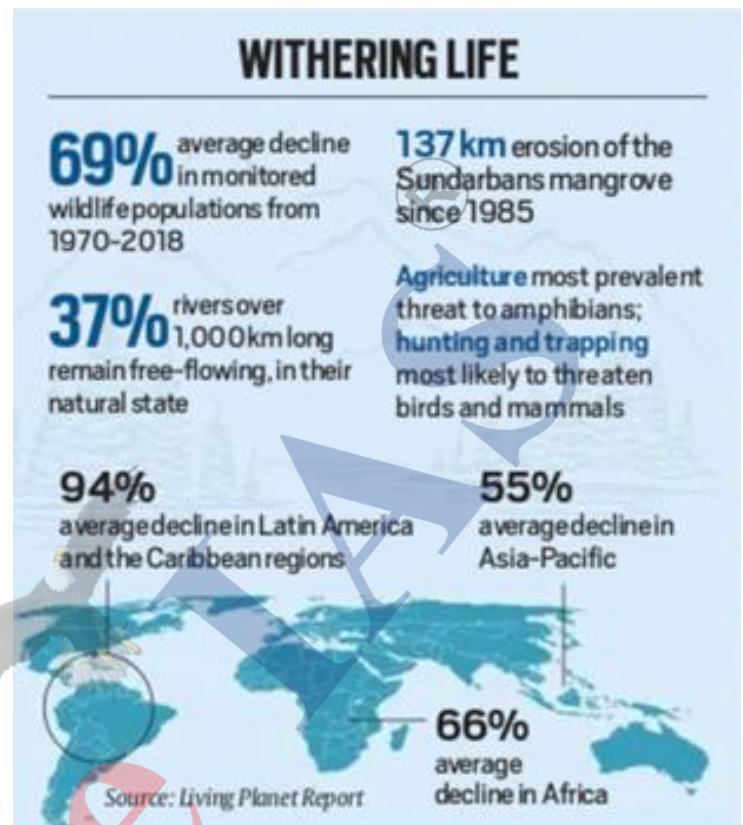
India-specific highlights
- The Himalayan region and the Western Ghats are the most vulnerable regions in the country in terms of biodiversity loss.
- 137 km of the Sundarbans mangrove forest have been eroded since 1985, reducing land and ecosystem services for people living there.
- The country has seen a decline in the population of the likes of honeybees and 17 species of freshwater turtles in this period.

WITHERING LIFE

69% average decline in monitored wildlife populations from 1970-2018

137 km erosion of the Sundarbans mangrove since 1985

37% rivers over 1,000 km long remain free-flowing, in their natural state

Agriculture most prevalent threat to amphibians; hunting and trapping most likely to threaten birds and mammals

94% average decline in Latin America and the Caribbean regions

55% average decline in Asia-Pacific

66% average decline in Africa

Source: Living Planet Report

Challenges cited by Report
- Habitat loss and barriers to migration routes.
- Six Key threats to Biodiversity loss are following:
  - habitat degradation and loss,
  - exploitation,
  - the introduction of invasive species,
  - pollution,
  - climate change and
  - disease.
- Land-use change is still the biggest current threat to nature.
- Overexploitation and pollution
- Climate change will impact key areas, such as water resources, agriculture, natural ecosystems, health and the food chain.
- Agriculture is the most prevalent threat to amphibians whereas hunting and trapping are most likely to threaten birds and mammals.

3.10 MISSION LIFE
Prime Minister Narendra Modi and United Nations Secretary-General António Guterres launched Mission LiFE (Lifestyle for Environment).
- It is a global plan of action that aims to save the planet from the disastrous consequences of climate change.

Key Points

- NITI Aayog has conceptualized the idea of Mission LiFE (Lifestyle for Environment).
- Mission LiFE was introduced by Prime Minister Modi at the COP26 in Glasgow in November 2021.
- It is an India-led global mass movement that will nudge individual and collective actions towards the protection and preservation of environment.
- LiFE envisions replacing the prevalent 'use-and-dispose' economy—governed by mindless and destructive consumption—with a circular economy.
- It follows three pronged strategy to achieve this goal:
  - Promotion of environmental-friendly daily practices among people (demand).
  - Enable industries and markets to respond to the shift in demand (supply)
  - Influence government and industrial policy to support both sustainable consumption and production (policy).
- The mission aims to mobilize at least 1 billion Indians and foreigners to take actions that will preserve the environment for the period between 2022 and 2027.
- It aims to make at least 80 per cent of all villages and urban local bodies in India environmentally friendly by 2028.
- As part of Mission LiFE, the Indian Government unveiled a list of 75 lifestyle practices that can promote climate-friendly behavior.
- These actions are listed under 7 categories –
  - Energy saving,
  - Water saving,
  - Reduced use of single-use plastic,
  - Sustainable food systems,
  - Waste reduction (swachhata actions),
  - Adopting healthy lifestyle, and
  - E-waste handling.

Approach of LiFE Campaign

Focus on Individual Behaviours
Make life a mass movement (Jan Andolan) by focusing on behaviours and attitudes of individuals and communities

Co-create Globally
Crowdsource empirical and scalable ideas from the best minds of the world, through top universities, think tanks and international organisations

Leverage Local Cultures
Leverage climate-friendly social norms, beliefs and daily household practices of different cultures worldwide to drive the campaign

3.11 CRITICALLY ENDANGERED VULTURES

Tamil Nadu Government formed a State-level Committee to set up an institutional framework for the effective conservation of vultures.

- The central government had introduced National conservation plans for vultures 2020-25.

About Vultures in India

- A total of nine species of vultures are found in India.
- Out of these six species are resident (white–rumped vulture, Indian vulture, slender-billed vulture, red-headed vulture, bearded vulture and Egyptian vulture).
    - And three species are migratory (cinereous vulture, griffon vulture and Himalayan vulture).
- Once numbering 40 million, mostly white-rumped, Indian and slender-billed, the numbers saw a catastrophic fall between 1990 and 2007.
- As per experts, 99.9 per cent of white-rumped vultures, and 99 per cent of the Indian and slender-billed varieties died out between 1993 and 2007.
    - While other species saw fall in numbers between 81 per cent and 90 per cent.
- Experts zeroed in on diclofenac, a veterinary drug used for pain management in livestock, as the main cause of the near wipe-out of vultures.
- In view of this threat to vultures that brought them close to extinction, diclofenac was banned for veterinary use in India and Nepal in 2006 and in Bangladesh in 2010.

About National conservation plans for vultures 2020-25

- The National Action Plan for Vulture Conservation, 2020-25 was approved by National Board for Wild life.
- The new plan automatically removes veterinary use of a drug if it is found to be toxic to vultures.
    - This is to be done with the help of Drugs Controller General of India.
- The plan also proposes carry out safety testing of available NSAIDs on vultures and to develop new ones which do not affect vultures.
- Under the plan, every state will host at least one vulture safe zone to conserve the remnant population of vultures in the state.
    - These centres will facilitate conservation and breeding of vultures.

1.	Oriental White-backed Vulture (Gyps Bengalensis)	Critically Endangered	
2.	Slender-billed Vulture (Gyps Tenuirostris)	Critically Endangered	
3.	Long-billed Vulture (Gyps Indicus)	Critically Endangered	

4.	Egyptian Vulture (Neophron Percnopterus)	Endangered	
5.	Red-Headed Vulture (Sarcogyps Calvus)	Critically Endangered	
6.	Indian Griffon Vulture (Gyps Fulvus)	Least Concerned	

7.	Himalayan Griffon (Gyps Himalayensis)	Near Threatened	
8.	Cinereous Vulture (Aegypius Monachus)	Near Threatened	
9.	Bearded Vulture or Lammergeier (Gypaetus Barbatus)	Near Threatened	

4. ECONOMY

4.1 UNIFIED LOGISTICS INTERFACE PLATFORM (ULIP)

Unified Logistics Interface Platform (ULIP) receives tremendous response as 13 organisations sign Non-Disclosure Agreement (NDA) to access data on ULIP.

- 30 systems of seven ministries integrated with ULIP covering over 1600 data fields.

Key Points

- Unified Logistics Interface Platform (ULIP) was launched as part of the 'National Logistics Policy (NLP)' in September, 2022.
- It is a promising initiative in the logistics sector that aims to bring ease of doing business in the logistics sector.
    - This will be done by simplifying the logistics processes, improving its efficiency, bringing in transparency and visibility, and reducing logistics cost & time.
- The ULIP platform will enable the industry players to get secure access to the information related to logistics and resources available with various Ministries.
- At present 30 systems from seven ministries are integrated through more than 100 APIs covering more than 1600 data fields for usage by the stakeholders.
- ULIP has a dedicated portal that makes the process of data request simpler, faster, and transparent.

About ULIP

- Unified Logistics Interface Platform (ULIP) is designed to enhance efficiency and reduce the cost of logistics in India.
- This will done by creating a transparent, one window platform that can provide real-time information to all stakeholders.
- There are three key components which are defining the ULIP platform:
    - Integration with existing data sources of ministries.
    - Data exchange with private players.
    - Unified document reference in the supply chain.
- ULIP shall enable start-ups and private organizations to build the presentation layer, encompassing various use-cases to serve the service, trade and logistics service providers.

About National Logistics Policy (NLP)

- The National Logistics policy is a comprehensive effort to make the logistics industry more efficient and lower its costs.
- The Policy sets targets and includes a detailed action plan to achieve them.
- The targets are:
  - to reduce cost of logistics in India to be comparable to global benchmarks by 2030,
  - improve the Logistics Performance Index ranking, to be among top 25 countries by 2030, and
  - create data driven decision support mechanism for an efficient logistics ecosystem.
- The cost of logistics in India is currently at 14-18% of GDP and it needs to be brought down to near about 8% to match the global best practices.

4.2 TELECOM TECHNOLOGY DEVELOPMENT FUND SCHEME

Universal Service Obligation Fund (USOF) officially launched Telecom Technology Development Fund (TTDF) Scheme on October 01st, 2022.

- Telecom Technology Development Fund (TTDF) aims to fund R&D in rural-specific communication technology applications.

Key Points

- Telecom Technology Development Fund (TTDF) Scheme is aimed for domestic companies and institutions involved in technology design, development, commercialization of telecommunication products and solutions.
- The idea of the fund is to enable affordable broadband and mobile services in rural and remote areas.
- The scheme is envisaged to bridge digital divide by developing and manufacturing the state-of-the-art technologies for rural and remote areas.
- The objectives are as follows:
- Promote Technology Ownership and indigenous Manufacturing (Aatmanirbhar Bharat)
- Reduce import and open up export opportunities.
- Proliferation of next generation Telecom technologies in Rural and Remote areas.
- Creating a culture of Technology co-creation and co-innovation.
- Promote the ecosystem for research, design, prototyping, development, proof of concept, etc.
- Develop and establish relevant standards to meet national requirements and enable their standardization in international standardization bodies.
- Promote rural-specific communication technology application.
- Enable proliferation of affordable broadband and mobile services

About USOF

- Concept of 'Universal Service Obligation' was introduced by Rowland Hill in 1837 with his postal reforms.
  - Universal Service was the key objective of the Universal Postal Union.
- In India, the New Telecom Policy 1999, provided that the resources for meeting the Universal Service Obligation (USO) would be raised through a 'Universal Access Levy' (UAL).
  - This would be a percentage of the revenue earned by the operators under various licences.
- The Universal Service Support Policy for provision of telecom facilities in rural and remote areas of the country came into effect from 01.04.2002.
- The Indian Telegraph (Amendment) Act, 2003 gave statutory status to the Universal Service Obligation Fund (USOF).
- As per the Indian Telegraph Act 1885 (as amended in 2003 and 2006), the fund is to be utilised exclusively for meeting the Universal Service Obligation.
- USO Fund was established with fundamental objective of providing access to "Basic" telegraph services to people in remote and rural areas at affordable and reasonable prices.

- Subsequently, the Indian Telegraph (Amendment) Act, 2006 was notified in 2006 to repeal the term "Basic".
  - With this the scope of USO Fund was widened to provide access to telegraph services (including mobile services, broadband connectivity and ICT infrastructure creation) in rural and remote areas.
- The Universal Service Obligation (USO) Fund is headed by the Administrator who is appointed by the Central Government, for the administration of the fund.
- It is an attached office of the Department of Telecommunications (DoT), Ministry of Communications.

4.3 NETWORK PLANNING GROUP (NPG)

Network Planning Group (NPG) constituted under the institutional framework of 'PM GatiShakti' has recommended 3 important road connectivity projects.

About Network Planning Group (NPG)

- The Network Planning Group (NPG) was constituted under the PM Gati Shakti initiative.
- It is chaired by the Special Secretary, Logistics Division, Department for Promotion of Industry and Internal Trade (DPIIT).
- NPG consists of heads of the network planning wing of respective infrastructure ministries.

GATI SHAKTI MASTER PLAN

Roadways capacity to be increased

Railways transport cargo capacity to be increased to **1,600 tonnes** by FY25

Renewable capacity to be increased to **225 GW** by FY25

Around 200 new airports, heliports and water aerodromes envisioned

Transmission network to be increased to **4,54,200 circuit km**

4G connectivity for villages by FY22. **Around 20** new mega food parks

- It will assist the Empowered Group of Secretaries (EGOS), which is headed by the cabinet secretary.
- NPG will facilitate regular interactions between the stakeholders.
- NPG will guide all the departments and ministries responsible for creation of economic zones and connectivity infrastructure during the planning phase itself.
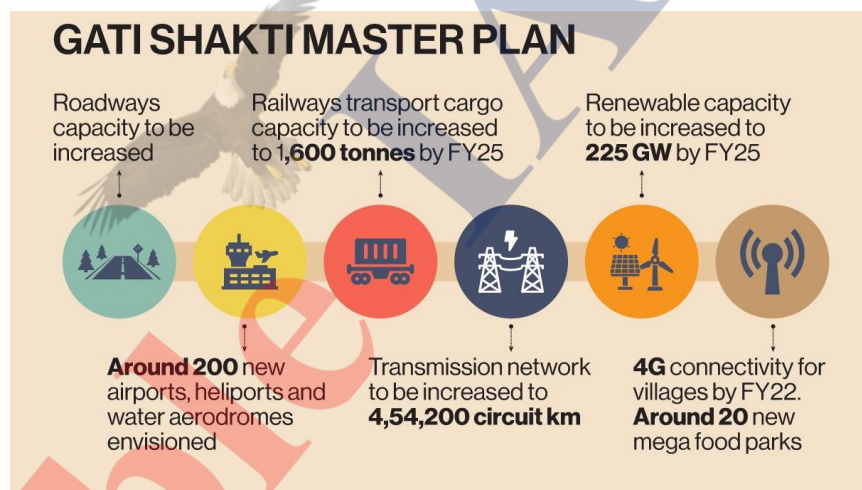
What is PM Gati Shakti?

PM Gati Shakti has following institutional framework:
- Empowered Group of Secretaries (EGOs)
- Network Planning Group (NPG)
- Technical Support Unit (TSU)

4.4 SUGAR PRODUCTION

India emerges as the world's largest producer and consumer of sugar and world's 2nd largest exporter of sugar.

- The country also recorded over 5000 LMT sugarcane produced in sugar season 2021-22.

Key Points

- In Sugar Season (Oct-Sep) 2021-22, a record of more than 5000 Lakh Metric Tons (LMT) sugarcane was produced in the country.
- Out of this about 3574 LMT of sugarcane was crushed by sugar mills to produce about 394 LMT of sugar (Sucrose).

- Out of this, 35 LMT sugar was diverted to ethanol production and 359 LMT sugar was produced by sugar mills.
- With this, India has emerged as the world's largest producer and consumer of sugar as well as the world's 2nd largest exporter of sugar.
- The largest exports of 109.8 LMT, which were made without any financial aid and continued through 2020–21, is another achievement of the season.
- These exports brought in roughly Rs. 40,000 crores in foreign currency for the nation.

Sugar Industry: Other Important Data

- During 2021-22, sugar mills procured sugarcane worth more than 1.18 lakh crore and released payment of more than 1.12 lakh crore with no financial assistance (subsidy) from Government of India.
- Thus, cane dues at the end of sugar season are less than 6,000 crore indicating that 95% of cane dues have already been cleared.
- It is also noteworthy that for SS 2020-21, more than 99.9% cane dues are cleared.
- Growth of ethanol as biofuel sector in last 5 years has amply supported the sugar sector.
- During 2021-22, revenue of about 18,000 crore has been made by sugar mills/distilleries from sale of ethanol which has also played its role in early clearance of cane dues of farmers.
- In new season, the diversion of sugar to ethanol is expected to increase from 35 LMT to 50 LMT.
- This would generate revenue for sugar mills amounting to about 25,000 crores.
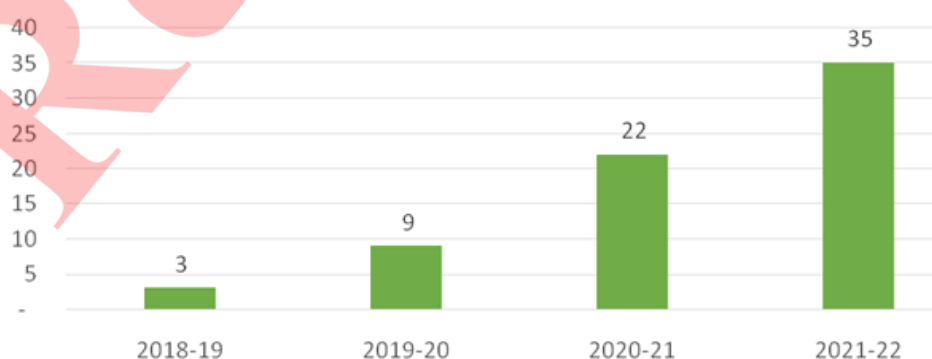
4.5 COMMITTEE OF EXPERTS ON SUSTAINABLE FINANCE

A 'Committee of Experts on Sustainable Finance', constituted by International Financial Services Centres Authority (IFSCA) submitted its final report to Chairperson, IFSCA.

- The committee was chaired by Shri C.K. Mishra, Former Secretary to Government of India, Ministry of Environment, Forest & Climate Change.

Key Points

- The committee members comprised of leaders and experts from the entire sustainable finance ecosystem including national and international institutions.
- The main focus areas of the committee were directed towards aligning the IFSC regulations with the international best practices.
- Some important recommendations include the following:
  - developing a voluntary carbon market,
  - framework for transition bonds,
  - enabling de-risking mechanisms,
  - promoting regulatory sandbox for green fintech and
  - facilitating the creation of a global climate alliance among others.
- The committee also proposes setting up of a dedicated MSME platform for sustainable lending.
- In addition to the above, it recommends IFSCA to play a vital role in capacity building which lays the foundation for greening the financial system.

About International Financial Services Centres Authority (IFSCA)

- The International Financial Services Centres Authority (IFSCA) has been established on April 27, 2020 under the International Financial Services Centres Authority Act, 2019.
- It is headquartered at GIFT City, Gandhinagar in Gujarat.
- The IFSCA is a unified authority for the development and regulation of financial products, financial services and financial institutions in the International Financial Services Centre (IFSC) in India.
- At present, the GIFT IFSC is the maiden international financial services centre in India.
- Prior to the establishment of IFSCA, the domestic financial regulators, namely, RBI, SEBI, PFRDA and IRDAI regulated the business in IFSC.

4.6 CREDIT GUARANTEE SCHEME FOR STARTUPS (CGSS)

The Department for Promotion of Industry and Internal Trade (DPIIT) has notified the establishment of the Credit Guarantee Scheme for Startups (CGSS).

Key Points

- CGSS will provide credit guarantees to loans extended by Scheduled Commercial Banks, Non-Banking Financial Companies and Securities and Exchange Board of India (SEBI) registered Alternative Investment Funds (AIFs).
- This scheme would help provide the much-needed collateral-free debt funding to start-ups.
- CGSS is aimed at providing credit guarantee up to a specified limit against loans extended by Member Institutions (MIs).
- This will be for loans given to eligible borrowers viz. Startups as defined in the Gazette Notification issued by DPIIT and amended from time to time.

- The credit guarantee cover under the Scheme would be transaction based and umbrella based.
- The exposure to individual cases would be capped at Rs. 10 crore per case or the actual outstanding credit amount, whichever is less.
- In respect of transaction-based guarantee cover, the guarantee cover is obtained by the MIs on single eligible borrower basis.
- Transaction based guarantees will promote lending by Banks/ NBFCs to eligible startups.
- The umbrella-based guarantee cover will provide guarantee to Venture Debt Funds (VDF) registered under AIF regulations of SEBI.
- DPIIT will be constituting a Management Committee (MC) and a Risk Evaluation Committee (REC) for reviewing, supervising and operational oversight of the Scheme.
- The National Credit Guarantee Trustee Company Limited (NCGTC) will be operating the Scheme.
- CGSS will complement the existing Schemes under Startup India initiative viz. Fund of Funds for Startups and Startup India Seed Fund Scheme.

About National Credit Guarantee Trustee Company Ltd
- National Credit Guarantee Trustee Company Ltd (NCGTC) was set up by the Department of Financial Services, Ministry of Finance.
- It is a private limited company incorporated under the Companies Act 1956 on March 28, 2014.
- Its task is to act as a common trustee company to manage and operate various credit guarantee trust funds.

4.7. WORLD COTTON DAY 2022
The Ministry of Textiles celebrated World Cotton Day 2022 by organizing a national level consultation on Sustainability in the Textile Value Chain in India.
- The main objective of the meeting was to put forward and discuss the sustainability initiatives across the textile value chain with UNEP and CCI.

About World Cotton Day
- United Nations General Assembly, on 30 August 20221, officially recognized 7 October as World Cotton Day.
- The request for such a day of recognition was initiated by Benin, Burkina Faso, Chad, Côte d'Ivoire and Mali.
- The World Cotton Day is an excellent opportunity to renew our commitment to enhancing the sustainability of the cotton sector and bring it to the forefront of the global agenda.

About Cotton Crop
- Cotton is a kharif crop which requires 6 to 8 months to mature.
- Cotton is the crop of tropical and sub-tropical areas and requires uniformly high temperature varying between 21°C and 30°C.
- The growth of cotton is effected when the temperature falls below 20°C.
- Cotton is a drought – resistant crop ideal for arid climates and requires an average annual rainfall of 50- 100 cm.
- It requires at least 210 frost free days in a year.

- It occupies just 2.1 % of the world's arable land, yet it meets 27% of the world's textiles need.

Cotton Crop in India

- Cotton is one of the most important commercial crops cultivated in India and accounts for around 25% of the total global cotton production.
- It plays a major role in sustaining the livelihood of an estimated 6 million cotton farmers.
- It also engages 40-50 million people in related activity such as cotton processing & trade.
- India got 1st place in the world in cotton acreage with 120.69 Lakh Hectares area under cotton cultivation.
  - This is around 36% of world area of 333 Lakh Hectares.
- Around 67% of India's cotton is grown on rain-fed areas and 33% on irrigated area.
- In terms of productivity, India is on 38th rank with yield of 510 kg/ha.

Year	Acreage (in lakh hectares)	Yield (Lint in Kg/ha)
2016-17	108.26	542
2017-18	125.86	500
2018-19	126.14	449
2019-20	134.77	460
2020-21 (P)	130.07	462
2021-22 (P)	120.69	510

- India is the country to grow all four species of cultivated cotton:
  - G.arboreum and Herbaceum (Asian cotton),
  - G.barbadense (Egyptian cotton) and
  - G. hirsutum (American Upland cotton).
- G.hirsutum represents 94% of the hybrid cotton production in India and all the current Bt cotton hybrids are G. hirsutum.
- Major cotton producing agro-ecological zones are:
  - Northern Zone - Punjab, Haryana and Rajasthan
  - Central Zone - Gujarat, Maharashtra and Madhya Pradesh
  - Southern Zone - Telangana, Andhra Pradesh, Karnataka and Tamilnadu
- India is having 1st place in the world with estimated production of 362.18 lakh bales (6.16 Million Metric Tonnes during cotton season 2021-22.
  - This is 23% of world cotton production of 1555 lakh bales (26.44 Million Metric Tonnes).
- India is also the 2nd largest consumer of cotton in the world with 22% of world cotton consumption.
- India is also 3rd largest exporter of cotton with estimated export of 45 lakh bales (0.76 Million MT) i.e. 8% of world export of 597 lakh bales.

Year	Import (in lakh bales)	Export (in lakh bales)
2016-17	30.94	58.21
2017-18	15.80	67.59
2018-19	35.37	43.55
2019-20	15.50	47.04
2020-21 (P)	11.03	77.59
2021-22 (P)	10.50	45.00

About Cotton Corporation of India (CCI)

- CCI was established on 31st July 1970 under the administrative control of Ministry of Textiles, Government of India as a Public Sector Undertaking under the Companies Act 1956.
- The role and function of CCI continued to enlarge with the changing cotton scenario in the country.
- The major role of the CCI is to undertake price support operations, whenever the market prices of kapas fall below the minimum support prices (MSP).
- Besides MSP operations, to fulfil the raw material requirement of the domestic textile industry particularly for lean season, CCI undertakes commercial purchase operations.

4.8 4TH HELI-INDIA SUMMIT 2022

Recently, the Minister of Civil Aviation has inaugurated the 4th Heli-India Summit 2022 in the Union Territory of Jammu and Kashmir.

- Theme of the Summit was 'Helicopters for Last Mile Connectivity'.

Key Points

- During the summit the Minister announced 3 new projects for enhancing the helicopter sector in the country which includes HEMS and fractional ownership.
- Helicopter Emergency Medical Services (HEMS):
- It is called Project Sanjeevani by deploying a helicopter in the next few weeks to provide emergency medical services at AIIMS Rishikesh.
- The helicopter will be based at the hospital at 20 minute notice and will have a service cover to an area of 150 km radius.
- Fractional Ownership Model
- It helps to grow the non-scheduled operations.
- It will lower the barrier on the cost of acquisition of helicopters and airplanes through pooled capital by multiple owners.

4.9 B20 INDONESIA GLOBAL DIALOGUE

Department for Promotion of Industry and Internal Trade (DPIIT) hosted Conference on B20 Indonesia Global Dialogue in partnership with Confederation of Indian Industry (CII).

- The aim of the conference was to align the perspectives of Indian industry with the policy recommendations of B20 Indonesia.

Key Points

- This conference would set tone for the deliberations to ensure that the Indian perspectives are well represented in the policy recommendation of B20 Indonesia.
- More than 20 business delegates from Indonesia attended the conference.

- Perspectives from B20 Indonesia was followed by perspectives from Indian Industry and Government of India on following themes-
- Trade & Investment
- Energy, Sustainability & Climate
- Digitisation and
- Finance and Infrastructure

What is Business 20 (B20)?
- Business 20 (B20), formed in 2010, is the official G20 dialogue forum with the global business community.
- B20 aims to deliver concrete actionable policy recommendations on the priorities by each rotating presidency to spur economic growth and development.
- The Indian Government side was represented by Shri Amitabh Kant, India's Sherpa to G20, along Shri Anurag Jain, Secretary, DPIIT.

4.10 INDIA'S GEOSPATIAL ECONOMY
India's geospatial economy is expected to cross Rs 63,000 crore by 2025 at a growth rate of 12.8%.
- It is expected to provide employment to more than 10 lakh people.

What is Geospatial Technology?
- Geospatial Technology is a term used to describe a range of modern tools like the Geographic Information System (GIS), Remote Sensing (RS) and Global Positioning System (GPS).
- These tools capture spatial information about objects, events and phenomena (indexed to their geographical location on earth, geotag).
- It enables us to acquire data that is referenced to the earth and use the data for analysis, modelling, simulations and visualization.
- The technology may be used to create intelligent maps to help identify spatial patterns in large volumes of data.
- The technology facilitates decision making based on the importance and priority of scarce resources.
- The use of Geospatial technologies can help ensure timely completion of projects through tracking, monitoring and managing performance as per plans.

Geospatial Sector in India?
- According to India Geospatial Artha Report 2021, the Indian geospatial economy is currently valued at Rs. 38,972 crore and employs approximately 4.7 lakh people.
- The sector has the potential to grow to 63,100 crore with a growth rate of 12.8 per cent by 2025.
- Defence and intelligence, water resources and irrigation, construction, and utilities are the leading growth factors of the geospatial market in the country.
- Further the estimated human resource size of the sector is expected to reach 9.5 lakh by 2025.

4.11 75 DIGITAL BANKING UNITS ACROSS 75 DISTRICTS
The Prime Minister of India has dedicated 75 Digital Banking Units (DBU) across 75 districts to the nation.
- In Union budget 2022-23, the Finance Minister had announced setting up the 75 DBUs in 75 districts to commemorate our country's 75 years of independence.

About Digital Banking Units

- According to the Reserve Bank of India (RBI), a DBU is a specialised fixed point business unit/hub housing certain minimum digital infrastructure.
- The objective is to deliver digital banking products and services as well as servicing existing financial products & services digitally, in both self-service and assisted mode.
- DBUs will enable customers to have cost-effective and enhanced access to digital banking experience.
- They will ensure the benefits of digital banking reach every nook and corner of the country.
- Services being offered through DBU:
  - Opening of savings account, balance-check, print passbook, transfer of funds, investment in fixed deposits, loan applications, among other things.
- The DBUs will also facilitate onboarding to Government credit link schemes through the Jan Samarth portal and end-to-end digital processing of small ticket MSME/retail loans.

4.12 CONTROLLER GENERAL OF ACCOUNTS

Ms Bharati Das took charge as the new Controller General of Accounts (CGA).

- Ms Das is the 27th Controller General of Accounts (CGA), Ministry of Finance, Government of India.

About Controller General of Accounts

- Controller General of Accounts (CGA), in the Department of Expenditure, Ministry of Finance, is the Principal Accounting Adviser to Government of India.
- It is responsible for establishing and maintaining a technically sound Management Accounting System.
- The Office of CGA prepares monthly and annual analysis of expenditure, revenues, borrowings and various fiscal indicators for the Union Government.
- The Annual Appropriation Accounts (Civil) and Union Finance Accounts are submitted to Parliament under Article 150 of the Constitution.

4.13 TELECOM SUBSCRIPTION DATA

In the month of August, 2022, 11.35 million subscribers submitted their requests for Mobile Number Portability (MNP).

- With this, the cumulative MNP requests increased to 736.14 million at the end of August-22, since implementation of MNP.

Key Points

- Number of active wireless subscribers in August, 2022 was 1013.46 million.

Highlights of Telecom Subscription Data as on 31st August, 2022

Particulars	Wireless	Wireline	Total (Wireless+Wireline)
Total Telephone Subscribers (Million)	1149.11	25.97	1175.08
Net Addition in August, 2022 (Million)	1.08	0.34	1.43
Monthly Growth Rate	0.09%	1.34%	0.12%
Urban Telephone Subscribers (Million)	627.09	23.98	651.07
Net Addition in August, 2022 (Million)	0.35	0.33	0.67
Monthly Growth Rate	0.06%	1.38%	0.10%
Rural Telephone Subscribers (Million)	522.02	1.99	524.01
Net Addition in August, 2022 (Million)	0.73	0.016	0.75
Monthly Growth Rate	0.14%	0.83%	0.14%
Overall Tele-density*(%)	83.27%	1.88%	85.15%
Urban Tele-density*(%)	129.75%	4.96%	134.71%
Rural Tele-density*(%)	58.22%	0.22%	58.44%
Share of Urban Subscribers	54.57%	92.35%	55.41%
Share of Rural Subscribers	45.43%	7.65%	44.59%
Broadband Subscribers (Million)	783.57	30.37	813.94

- The number of telephone subscribers in India increased to 1,175.08 million at the end of August-22, thereby showing a monthly growth rate of 0.12%.
- Urban telephone subscription increased to 651.07 million at the end of August-22 and the rural subscription also increased to 524.01 million during the same period.
- The monthly growth rates of urban and rural telephone subscription were 0.10% and 0.14% respectively during the month of August-22.
- The overall Tele-density in India increased to 85.15% at the end of August-22.
- The Urban Tele-density decreased to 134.71% at the end of August-22 and Rural Tele-density increased to 58.44% during the same period.
- The share of urban and rural subscribers in total number of telephone subscribers at the end of August-22 was 55.41% and 44.59% respectively.
- Delhi service area has maximum tele-density of 268.58% and the Bihar service area has minimum tele-density of 55.11% at the end of August-22.
- As on 31st August, 2022, the private access service providers held 90.17% market share of the wireless subscribers.
  - BSNL and MTNL, the two PSU access service providers, had a market share of only 9.83%.
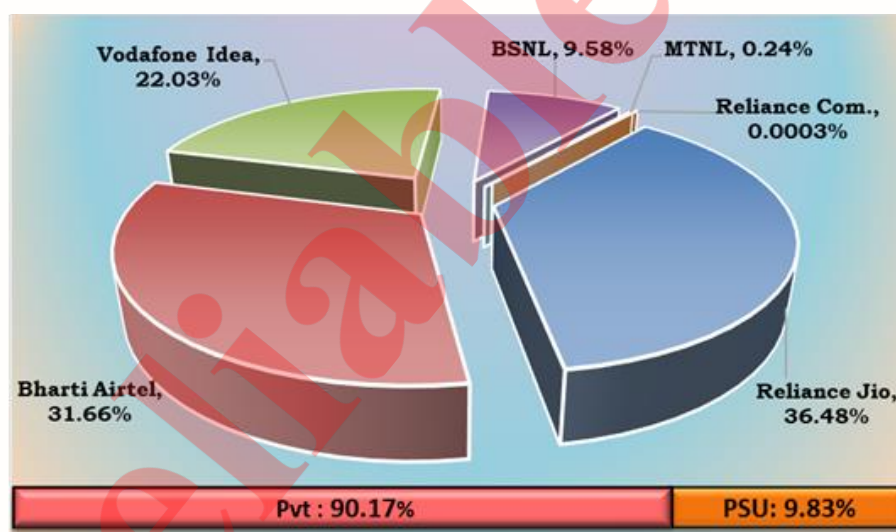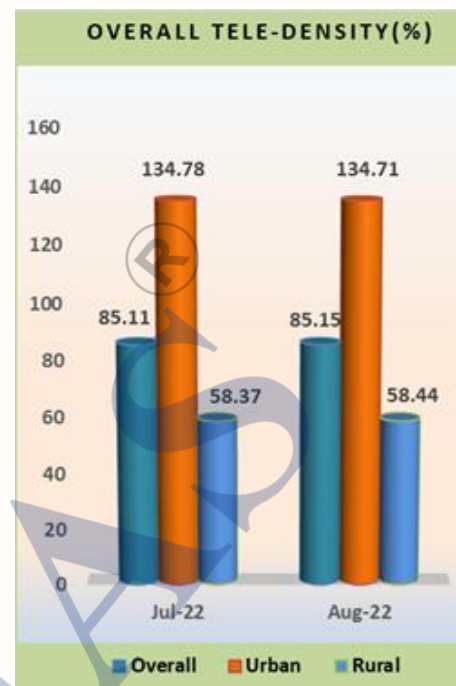
4.14 DIGITAL RUPEE

The Reserve Bank of India (RBI) will soon commence limited pilot launches of e-rupee (e`), or Central Bank Digital Currency (CBDC) or digital rupee, for specific use cases.

- It has hinted at two broad categories for the use of e-rupee — retail and wholesale — for various transactions.

Key Points

- RBI defines the CBDC as the digital form of currency notes issued by a central bank.
- It is a sovereign or entirely independent currency issued by the central bank (in this case, RBI), in accordance with the country's monetary policy.

- Once officially issued, CBDC will be considered as a medium of payment and legal tender by all three parties - citizens, government bodies, and enterprises.
- Being government-recognised, it can be freely converted to any commercial bank's money or notes.
- RBI is not in favour of e-rupee with interest.
    - This is because people might withdraw money from banks and convert it to digital rupee - causing banks to fail.

CBDC

What is RBI's Plan for CBDC?

- On the basis of usage and the functions performed by the digital rupee and considering the different levels of accessibility, CBDC can be demarcated into two broad categories — general purpose (retail) (CBDC-R) and wholesale (CBDC-W).
- Retail CBDC is an electronic version of cash primarily meant for retail transactions.
- It will be used by all — private sector, non-financial consumers and businesses.
- However, the RBI has not explained how e-rupee can be used in merchant transactions in the retail trade.
- Wholesale CBDC is designed for restricted access to select financial institutions.
- It has the potential to transform the settlement systems for financial transactions undertaken by banks into government securities (G-Sec) segment, inter-bank market and capital market.
    - This will make these transactions more efficient and secure in terms of operational costs, use of collateral and liquidity management.
- Available in online and offline mode:
    - The offline functionality as an option will allow CBDC to be transacted without the internet.
    - This will thus enable access in regions with poor or no internet connectivity.
- However, the RBI feels in the offline mode, the risk of 'double-spending' will exist.
    - This is because it will be technically possible to use a CBDC unit more than once without updating the common ledger of CBDC.
- Model for Issuance:
    - In the direct model, the central bank will be responsible for managing all aspects of the digital rupee system.
    - An indirect model would be one where the central bank and other intermediaries (banks and any other service providers), each play their respective role.
    - The central bank will issue CBDC to consumers indirectly through intermediaries and any claim by consumers will be managed by the intermediary.

Advantages of E-Rupee

- Reduction in operational costs involved in physical cash management.
- It will help foster financial inclusion.
- It will also bring resilience, efficiency and innovation in the payments system.
- Provide the public with uses that any private virtual currencies can provide, without the associated risks.

MOVE NOW

Small countries like Ecuador, Tunisia and a few in Scandinavia have already launched official digital currencies in pilot mode

- China is reportedly on the anvil of launching its official Yuan digital currency
- The impact of digital currency initiatives of China and Libra (4 billion users) would be felt globally
- If US regulators green signal Libra, tech biggies may navigate their way into the Indian banking system with implications for financial stability
- India is at an inflection point and we can leap from UPI to CBDC

CBDC may add 2-3% to the GDP. Even if we reap 1%, that adds **over $25 billion per year**

4.15 DECLINE IN FOREX RESERVES

According to the Reserve Bank of India (RBI), India's forex reserves have fallen by USD 110 billion in the last 13 months.

Key Points

- India's forex reserves have fallen by USD 110 billion since September 2021 where it stood at a record high of USD 642.45 billion.
- It needs to be noted that Indian rupee is a freely floating currency, and its exchange rate is market determined.
    - The RBI does not have any fixed exchange rate.
- Despite this drastic decline, India has been faring much better than several reserve currencies, EMEs (emerging market economies) and its Asian peers.
- Reasons for Declining Forex Reserves:
    - The central bank has been selling dollars from the forex reserves to support the rupee amid pressures caused majorly by global developments.
    - The intervention is needed to curb the free fall of the rupee and reduce volatility in the market.
    - Capital outflows by foreign portfolio investors (FPIs) as the US Federal Reserve started the monetary policy tightening and interest rate hikes.
    - FPIs have begun to withdraw from the Indian markets. These FPIs were sellers in financial and IT services and buyers in telecom and capital goods.
    - The valuation loss, reflecting the appreciation of the US dollar against major currencies and the decline in gold prices also played a part.
    - About 67% of the decline in reserves during the current financial year was due to valuation changes arising from an appreciating US dollar and higher US bond yields.

About Forex Reserves

- Forex reserves are assets held on reserve by a central bank in foreign currencies, which can include bonds, treasury bills and other government securities.
- Most foreign exchange reserves are held in US dollars.
- Components of Forex Reserves:
    - Foreign Currency Assets
    - Gold reserves
    - Special Drawing Rights
    - Reserve position with the International Monetary Fund (IMF)
- Significance of Forex Reserves:
    - Supporting and maintaining confidence in the policies for monetary and exchange rate management.
    - Provides the capacity to intervene in support of the national or union currency.
    - Limits external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis or when access to borrowing is curtailed.

What are Special Drawings Rights?

- The SDR is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves.
- The SDR is neither a currency nor a claim on the IMF.
- Rather, it is a potential claim on the freely usable currencies of IMF members.
- SDRs can be exchanged for these currencies.
- The value of the SDR is calculated from a weighted basket of major currencies, including the US dollar, the euro, the Japanese yen, the Chinese yuan, and the British pound.

4.16 WORLD ECONOMIC OUTLOOK

Recently, the International Monetary Fund (IMF) released the latest edition of World Economic Outlook 2022.

Highlights of the World Economic Outlook

- Global growth is forecast to slow from 6% in 2021 to 3.2% in 2022 and 2.7% in 2023.
- This is the weakest growth profile since 2001, except for the global financial crisis and the acute phase of the Covid-19 pandemic.

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- The global growth is expected to slow further in 2023. The worst is yet to come and, for many people 2023 will feel like a recession.
- A slowdown in the Euro area is expected to deepen in 2023, and growth in China is projected to hit its lowest rate in decades.
- About India:
  - It cut its forecast for India's Gross Domestic Product (GDP) growth in 2022 to 6.8%, from 7.4% for India in the fiscal year that started in April 2022.
  - For 2023, India has been projected to grow at 6.1%.
- Inflation:
  - Global inflation is forecast to rise from 4.7% in 2021 to 8.8% in 2022 but to decline to 6.5% in 2023 and to 4.1% by 2024.
  - The slowdown in global economic activity is broad-based and sharper-than-expected, with inflation higher than seen in decades.

GDP projections by IMF

World Economic Outlook released today shows Indian economy to grow at 6.8%, lower than it previous projection of 7.4%

Countries	2022	2023
India	6.8%	6.1%
Spain	4.3%	1.2%
UK	3.6%	0.3%
Canada	3.3%	1.5%
Italy	3.2%	−0.2%
China	3.2%	4.4%
Euro Area	3.1%	0.5%
Brazil	2.8%	1.0%
France	2.5%	0.7%
Mexico	2.1%	1.2%
Japan	1.7%	1.6%
US	1.6%	1.0%
Germany	1.5%	−0.3%
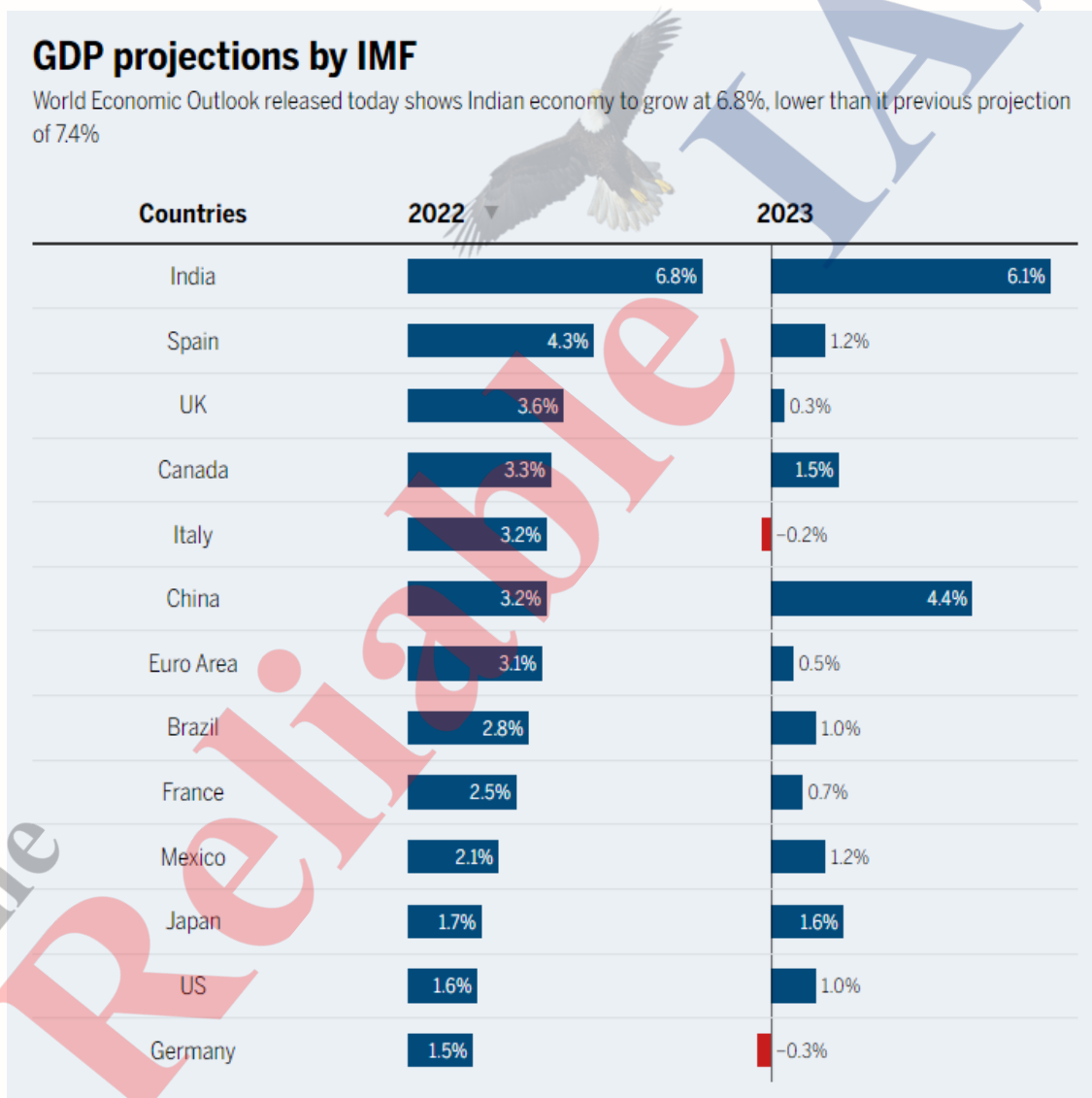
Recommendations by IMF

- Fighting Inflation
  - The priority must be to tackle inflation, normalize central bank balance sheets, and raise real policy rates above their neutral level.
- Monetary and Fiscal Policy Coordination

- Fiscal policy also needs to support monetary policy in softening demand in economies with excess aggregate demand and overheating labor markets.
- Without price stability, any gains from future growth are at risk of being eaten up by a renewed cost-of-living squeeze.
- Protecting the Vulnerable during the Adjustment
  - As the cost of living continues to rise, policymakers will need to protect the most vulnerable members of society from the impact of higher prices.
- Climate Policies
  - Without prompt remedial action, climate change will eventually have catastrophic impacts on health and economic outcomes the world over.
  - Current global targets are not aligned with global temperature goals.
  - Meeting these goals will require emission cuts of at least 25% by the end of the decade.

About International Monetary Fund

- The IMF was set up along with the World Bank after the Second World War to assist in the reconstruction of war-ravaged countries.
- The two organizations agreed to be set up at a conference in Bretton Woods in the US.
  - Hence, they are known as the Bretton Woods twins.
- Created in 1944, the IMF is governed by and accountable to the 190 countries that make up its near-global membership.
- India joined on 27th December 1945.
- The IMF's primary purpose is to ensure the stability of the international monetary system.
- Reports published:
  - Global Financial Stability Report
  - World Economic Outlook

4.17 INDIA'S FIRST ALUMINUM FREIGHT RAKE

Recently, Union Minister for Railways inaugurated India's First Aluminum Freight Rake named - 61 BOBRNALHSM1 at Bhubaneswar Railway Station.

- The rake has been fully designed and developed indigenously in collaboration with RDSO, HINDALCO and Besco Wagon.

Key Points

- The Made in India rake will reduce carbon footprint as lower consumption of fuel in empty directions and more transport of freight in a loaded condition.
  - A single rake can save over 14,500 tonnes of carbon dioxide over its lifetime.
- If just 5% of the future railway wagons are aluminum-made, it is expected that around 15 million tonnes of carbon emissions can be saved in a year.
- This Made in India will also reduce imports.
  - The iron industry consumes a lot of Nickel and Cadmium which comes from imports.
  - So, a proliferation of Aluminum wagons will result in less import.
  - At the same time, this is good for the local aluminum industry.
- The new aluminum rakes are reportedly 180 tonnes lighter than the current steel rakes.
  - The carrying capacity of the new design is said to be 5%-10% more than their steel counterparts.
- It would also help the Indian Railways to achieve net zero Carbon Emissions by 2030 to become the world's largest Green Railway.

INDIA'S FIRST ALUMINIUM RAKE
A 'MAKE IN INDIA' Initiative

☑ Cost effective & energy efficient
☑ Indigenously developed
☑ 180 Tonnes lighter than existing steel rakes
☑ Higher payload
☑ Safer & Superior crash absorption capability

5. SCIENCE AND TECHNOLOGY

5.1 LAUNCH OF 5G SERVICES

Prime Minister Narendra Modi launched the 5G services at a function at Pragati Maidan in New Delhi on 1st October.

- 5G technology will provide seamless coverage, high data rate, low latency, and highly reliable communication.

Key Points

- While India was dependent on other countries for 2G, 3G and 4G technologies, with 5G, India has created a new history.
- With its own developed 5G technology, it can set a global standard in telecom technology for the first time.
- Two out of the three operators have commenced the initial launch of 5G services.
- Reliance Jio's 5G network was made available on October 5 as part of a beta trial.
  - In four cities -- Mumbai, Delhi, Varanasi, and Kolkata -- Jio is inviting select users to connect to its 5G network.
- Airtel's 5G services became live in six cities on October 6, -- Delhi, Mumbai, Chennai, Bengaluru, Hyderabad, Siliguri, Nagpur, and Varanasi.
  - Airtel is deploying the 5G network in a phased manner in these cities.
- Vodafone Idea has not announced its launch date yet.
- Reliance Jio has announced to launch 5G in the rest of the country by 2023-end while Airtel said that the rest of the country would get it by March 2024.

5G vs 4G: What is the difference?

- 4G is the abbreviated form of fourth-generation wireless connectivity that replaced 3G (third-generation wireless) connectivity.
- The bandwidth speeds and network capacity increases with each generation of wireless cellular technology.
- For example, 3G offered a peak speed of 14 Mbps whereas 4G delivered speeds of up to 100 Mbps.
- 4G download speeds allowed users to stream high-definition video and audio.

- Moreover, this network technology also enabled wireless broadband that allowed users to get internet connectivity without the need for a fixed, wired connection from an internet service provider (ISP).
- A 4G connection uses an antenna to transmit radio frequencies that enable mobile devices to connect to mobile networks.
- 5G is the fifth generation of cellular networks which is up to 100 times faster than 4G.
- 5G network technology adds more capacity (space) which offers more room for all the devices to get higher data speeds.

- The increase in network capacity is important as data traffic keeps on growing at about 60 per cent per year.
    - The 4G network even faced some issues while handling multiple devices in the same location that users may have experienced during crowded sports events or concerts.
- 5G solves this problem by transmitting to each device, with high precision.
- The network is capable of handling as many as 1 million devices per square kilometre.
- As the number of devices that connect to the network increases by about 25 per cent per year, the ability to connect more devices turns out to be very important.
- The 5G network is designed to connect not only smartphones but various other types of devices as well.
- While 4G provided a one-size-fits-all kind of connectivity, where every device got the same service, 5G is different.
    - For a smart watch that runs on a small battery, 5G can provide a connection that consumes very little energy.
    - For an industrial robot, 5G can provide an extremely stable and fast connection.

	4G	5G
Bandwidth	200mbps	>1gbps
Latency	20-30 millisecond	<10 millisecond
Average Speed	25 Mbps	200-400 Mbps
Technology	Wi-MAX, LTE	Developing
Features	Incredibly fast download speeds paved the way for HD Streaming.	Ultra-fast internet, low-latency, and improved reliability.

5.2 WHOLLY INDIGENOUS 5G NSA CORE

The Prime Minister launched wholly indigenous 5G NSA (Non-Standalone) Core designed and developed by C-DOT, at India Mobile Congress 2022.

- End-to-end indigenous 5G NSA call was demonstrated using C-DOT's Core and Radio Access Network (RAN) developed in collaboration with industry and start-ups

Key Points

- Various 5G use-cases have been implemented in collaboration with national academic institutions and local start-ups.
- Centre for Development of Telematics (C-DOT) has been keenly working towards evolving an indigenous technology framework.

About Centre for Development of Telematics (C-DOT)

- Centre for Development of Telematics (C-DOT) was established in August 1984 as an autonomous Telecom R&D centre of DoT, Govt. of India.
- It is a registered 'public funded research institution' with the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology.
- C-DOT is hailed as the progenitor of the Indigenous Telecom Revolution in the nation.
- C-DOT is working towards realising the objective of various flagship programmes of Govt. of India which include Digital India, BharatNet, Smart Cities etc.

About India Mobile Congress

- India Mobile Congress is the largest telecom, media, and technology forum in Asia.
- It is jointly organized by the Department of Telecommunications (DoT) and Cellular Operators Association of India (COAI).
- IMC has established itself as a leading platform for bringing together the industry, Government, academia, and other ecosystem players, to discuss and display the latest in the technology world.

5.3 IMEI NUMBER

The Department of Telecommunications (DoT) has made it mandatory for mobile phone manufacturers to register the International Mobile Equipment Identity (IMEI) of all handsets made in India.

- The registration will done with the Indian Counterfeited Device Restriction portal of Government of India.

What is an IMEI Number?

- The IMEI is a unique number that is used to identify a device on a mobile network.
- It has 15 digits and is like a phone's unique identity.
- The number is used to verify the identity of a device when a user uses the Internet or places a call through it.
- Phones with a dual-SIM option has two IMEI numbers, one for each SIM.
- The IMEI number can help network providers track down a device in case it gets stolen or is lost.
- Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.
- The telecom department and the customs department work together to check and record the IMEI numbers of handsets that come into India.
- Central Equipment Identity Register (CIER) categorises mobile phones based on their IMEI status in three lists – white, grey and black.
  - Mobile phones with IMEI numbers on the white list are permitted for use.
  - The blacklist IMEI's are the ones that are reported stolen or lost and are not allowed to access the network.
  - Devices with IMEI numbers in the greylist do not conform to standards but are permitted to connect under supervision.

5.4 NOBEL PRIZE FOR PHYSIOLOGY

Swedish scientist Svante Pääbo has been awarded the Nobel Prize for Physiology for the year 2022.

- He won the award for his research in the field of genomes of extinct hominins and human evolution.

Key Points

- His research led to the rise of new field of paleogenomics, the branch of science based on the reconstruction and analysis of genomic information in extinct species.

Key findings of research:

- Sequencing an entire Neanderthal genome to reveal the link between extinct people and modern humans.
- Neanderthal is an ancient group of humans.
- Discovery of a previously unknown human species called the Deniso- vans, from a 40,000-year-old fragment of a finger bone discovered in Siberia.
- Hominins, of which only one species—Homo sapiens—currently exists, are members of the family Hominidae.
- In the past, Homo sapiens had encountered and interbred with Neanderthals and Denisovans.
- Neanderthals lived in western Eurasia, whereas Denisovans populated the eastern parts of the continent.
- Gene transfer had occurred from these now extinct hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
- For instance, the Denisovan version of the gene EPASI confers an advantage for survival at high altitude and is common among present-day Tibetans.
- Other examples are Neanderthal genes that affect our immune response to different types of infections.
- Pääbo's discoveries have generated new understanding of human evolutionary history.

5.5 NOBEL PRIZE IN PHYSICS 2022

The Nobel Prize in Physics for 2022 was awarded to John F. Clauser, Alain Aspect and Anton Zeilinger for their work in quantum mechanics.

Key Points

- The award was given for experiments with entangled photons, establishing the violation of Bell inequalities, and pioneering quantum information science.
- Importance:
  - Development of experimental tools lays down the foundation for a new era of quantum technology.
  - Being able to manipulate and manage quantum states and all their layers of properties gives us access to tools with unexpected potential.
  - It will help in utilising the special properties of individual particle systems to construct quantum computers, etc.

What is Quantum Mechanics?

- Mechanics, in general, has two parts - classical and quantum.
- Classical or Newtonian mechanics is the mathematical study of the motion of macroscopic objects and the forces that affect them.

- Quantum mechanics is a subfield of physics that describes the behavior of particles — atoms, electrons, photons and almost everything in the molecular and submolecular realm.

Quantum entanglement:
- It is a phenomenon by which a pair of subatomic particles are allowed to exist in a shared state where they have complementary properties.

5.6 NOBEL PRIZE IN CHEMISTRY 2022
Carolyn R Bertozzi, Morten Meldal and K Barry Sharpless have been awarded the Nobel Prize 2022.
- The award is given in Chemistry "for the development of Click Chemistry and Bioorthogonal Chemistry".

Key Points
- Click Chemistry is a minimalistic form of chemistry in which molecular building blocks can quickly and efficiently snap together.
- It is a form of simple and reliable chemistry, where reactions occur quickly, and unwanted by-products are avoided.
- The central idea is to choose simple reactions between molecules that have a "stronger intrinsic drive" to bond together, resulting in a faster and less wasteful process.
- Importance:
  - Replicating reactions that involve bonds between carbon atoms is expensive and often leads to side reactions and loss of material.
  - In click chemistry, instead of trying to make carbon atoms react with each other, it focuses on using smaller molecules that already have a complete carbon frame.
  - This may help avoid the loss of material as well as the unwanted side reactions.
- Bioorthogonal Reactions:
  - These reactions work inside living organisms without disrupting the normal chemistry of the cell.
  - Its use in combination with nanotechnology can lead to further developments in diverse areas of biomedicine.
  - Using bioorthogonal reactions, researchers have improved the targeting of cancer pharmaceuticals.

5.7 LASSA FEVER
Recently a study has found that Climate change may aid the spread of Lassa fever in the next 50 years.
- The fever is endemic to parts of west Africa, to the Central and Eastern parts of the African continent.

Key Points
- There would be a 600% jump in the number of people exposed to the virus that causes Lassa fever.
- The number of people at risk of exposure would rise to 453 million by 2050 and 700 million by 2070.
  - This is up from about 92 million in 2022.
- An estimated 80% of infections are mild or asymptomatic.

- But the remaining 20 % can cause haemorrhaging from the mouth and gut, low blood pressure and potential permanent hearing loss.
- Temperature, rainfall and the presence of pastureland areas are key factors that contributed to the transmission of the Lassa virus.

Lassa Virus Transmission and Mortality
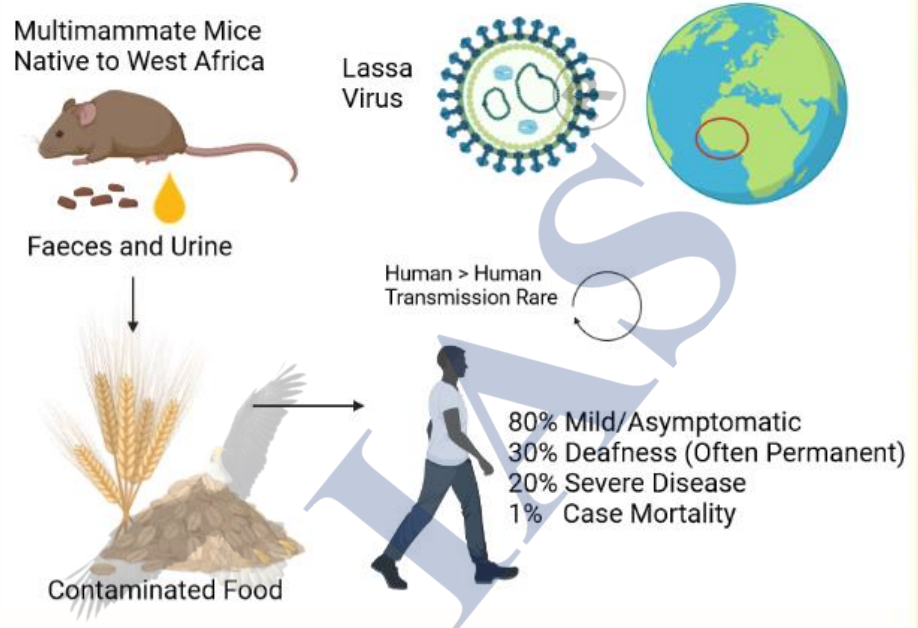
About Lassa Fever
- The Lassa fever-causing virus is found in West Africa and was first discovered in 1969 in Lassa, Nigeria.
- The virus is a single-stranded RNA virus belonging to the virus family Arenaviridae.
- The fever is spread by rats and is primarily found in countries in West Africa including Sierra Leone, Liberia, Guinea, and Nigeria where it is endemic.
- The death rate associated with this disease is low, at around 1%.
  - But the death rate is higher for certain individuals, such as pregnant women in their third trimester.
- According to the European Centre for Disease Prevention and Control, about 80% of the cases are asymptomatic and therefore remain undiagnosed.
- A person can become infected if they come in contact with household items of food that is contaminated with the urine or faeces of an infected rat.
- It can also be spread, though rarely, if a person comes in contact with a sick person's infected bodily fluids or through mucous membranes.
- Symptoms include slight fever, fatigue, weakness and headache.
- Serious symptoms include bleeding, difficulty breathing, vomiting, facial swelling, pain in the chest, back, and abdomen and shock.
- Death can occur from two weeks of the onset of symptoms, usually as a result of multi-organ failure.
- The antiviral drug ribavirin seems to be an effective treatment for Lassa fever if given early on in the course of clinical illness.
- There are no vaccines currently licensed for the prevention of Lassa fever.

5.8 HARNESSING QUANTUM ENTANGLEMENT
Experiments with entangled photons, and establishment of pioneering quantum information science saw a new theoretical concept by Indian scientists.
- They are exploring connections between the laws of thermodynamics and Quantum Information Theory (QIT).

Key Points
- This new concept could facilitate harnessing quantum entanglement for futuristic energy storage technology.
- The scientists have theorised a concept called 'ergotropy'.
- It represents the amount of extractable work from a system by keeping its entropy (measure of randomness of a system) constant.

- The idea if harnessed can open pathways for putting quantum batteries to use in a way that is much efficient than its classical counterpart.

What is Quantum Entanglement?
- Entanglement is at the heart of quantum physics and future quantum technologies.
- Like other aspects of quantum science, the phenomenon of entanglement reveals itself at very tiny, subatomic scales.
- When two particles, such as a pair of photons or electrons, become entangled, they remain connected even when separated by vast distances.
- In this phenomena, two subatomic particles can be intimately linked to each other even if separated by billions of light-years of space.
- Despite their vast separation, a change induced in one will affect the other.
- In 1964, physicist John Bell posited that such changes can be induced and occur instantaneously, even if the particles are very far apart.
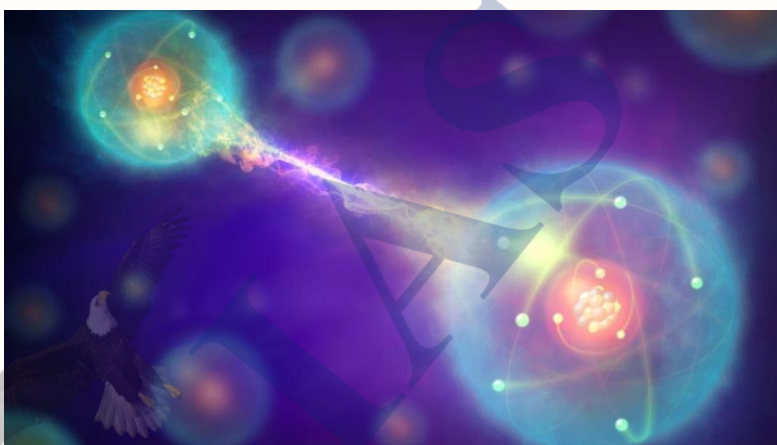
5.9 UNITED NATIONS WORLD GEOSPATIAL INTERNATIONAL CONGRESS
Prime Minister recently addressed the United Nations World Geospatial International Congress.
- The theme of the conference was 'Geo-enabling the Global Village: No one should be left behind'.

About United Nations World Geospatial International Congress
- The first United Nations World Geospatial Information Congress was held in Zhejiang Province, China in 2018.
  - Its goal was to strengthen the geospatial information management, innovation and related technologies to help in the achievement of the Sustainable Development Goals.
- The second edition of the UN World Geospatial International Congress was being organized in Hyderabad, Telangana this year.
- It is being hosted by the Department of Science and Technology (DST).
- It will focus on achieving an inclusive and equitable global society by creating a community for the collection of human data.

- It also emphasises on the importance of international cooperation and coordination in the development of human data-linked to geography.
- This could help in the creation of a high-quality and reliable geospatial data that can help in the international and national policy agenda.

5.10 FLEXI-FUEL STRONG HYBRID ELECTRIC VEHICLES

Toyota has launched a first-of-its-kind pilot project flex fuel-strong hybrid electric vehicle (FFV-SHEV) in India.

- The new vehicle can run on 100 per cent ethanol.

Key Points

- An FFV-SHEV possesses a flex-fuel engine and an electric powertrain.
- This setup extends the dual advantages of higher ethanol use and greater fuel efficiency, as it can run in its EV mode for a good amount of time, while the engine stands shut off.
- This seems to be providing solutions to the much-discussed concern of finding an alternative medium to run vehicles in the long run.
- Unlike CNG fuel systems which store petrol and CNG in separate tanks and are used separately by the engine-
  - The flex-fuel combination is stored in the same tank of fuel and is used by the engine as a blended fuel.
- Flex fuel engines are already popular in Brazil, the United States, European Union and China among many others.

About Ethanol

- Ethanol (ethyl alcohol, CH_3CH_2OH) is one of a group of chemical compounds (alcohols) with molecules that contain a hydroxyl group (OH) bonded to a carbon atom.
- Ethanol is a clear, colourless liquid with a characteristic, agreeable odour.
- Ethanol is produced through the fermentation of agricultural products such as sugarcane, corn, and manioc, among others.
- All the beverage ethanol, and more than half of industrial ethanol, is still made by this process.
- In India, ethanol is primarily produced using sugarcane molasses.
- This is an example of first generation biofuels that uses biomass containing large amounts of sugar or materials that can be converted to sugar such as starch, for the generation of ethanol.
- The use of ethanol as an automobile fuel is as old as the invention of the internal combustion engine itself.
- Ethanol was examined as an automotive fuel by Nikolas A Otto in 1897 during his early engine studies.
- Brazil has been using this fuel since 1920s.
- Ethanol can be combined with petrol in any concentration up to pure ethanol (E100).
- Ethanol is used as a high-octane fuel in vehicles.

- With a 113 octane rating, ethanol is the highest performance fuel on the market and keeps today's high-compression engines running smoothly.
- Because the ethanol molecule contains oxygen, it allows the engine to more completely combust the fuel, resulting in fewer emissions.

Note: The Government has 10% blending target for mixing ethanol with petrol by 2022 & 20% blending target by 2030.
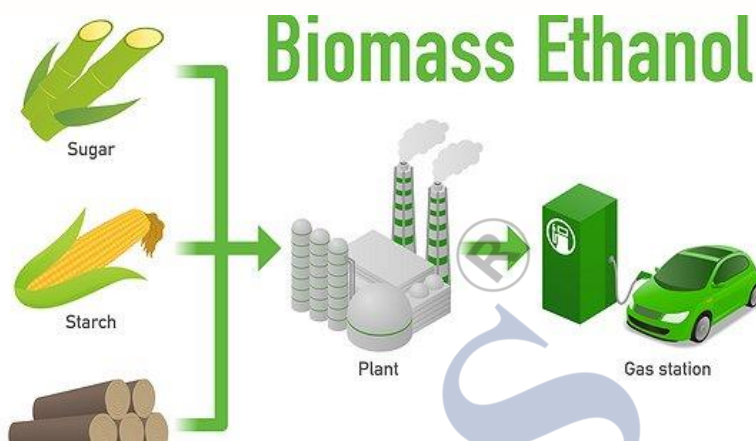
5.11 PADDY STRAW PELLETISATION AND TORREFACTION PLANTS

The Environment Ministry released CPCB Guidelines for grant of one-time financial support for promoting establishment of paddy straw based pelletisation and torrefaction plants.
- These plants, once set up, would utilise a sizeable portion of the unmanaged paddy straw and help address the issue of crop residue burning and the resultant air pollution.

Key Points
- Statutory directions have been issued to thermal power plants to co-fire biomass based Pellets, Torrefied Pellets/Briquettes (with focus on paddy straw) with Coal (up to 5-10%).
- These plants would utilise a sizeable portion of the unmanaged paddy straw.
- This will help address the issue of crop residue burning and the resultant air pollution.
- These plants will also generate income for farmers.
- A corpus of Rs 50 crores has been earmarked for utilisation through the guidelines.
- If complete utilisation of the corpus is done then over 1 million metric tonnes of paddy straw based pellets are expected to be generated every year.
- Understanding the Concept
- Pelletisation means converting paddy straw into pellets which can be used in thermal power plants and industries as fuel.
- Torrefaction is a process to improve physical properties and chemical composition of biomass.
- Torrefaction is costlier but can deliver a product whose energy content is much higher and theoretically substitute for more coal in a power plant.

In Image : Paddy straw pellets which can be used as biomass.

Note : The first 2G Ethanol Plant in Panipat is expected to utilise 2 lakh metric tonnes of paddy straw every year.

Significance
- Saving coal and reducing carbon emissions:
    - Paddy straw made into pellets or torrefied can be mixed along with coal in thermal power plants.
    - This saves coal as well as reduces carbon emissions that would otherwise have been emitted were the straw burnt in the fields.
- This scheme will help convert waste to wealth and provide entrepreneurship opportunities to rural youth.

5.12. WORLD STANDARDS DAY

Each year on 14 October, the members of the IEC, ISO and ITU celebrate World Standards Day.

- It is a means of paying tribute to the collaborative efforts of thousands of experts worldwide who develop the voluntary technical agreements that are published as International Standards.

Key Points

- On the occasion, Bureau of Indian Standards, organized a Standards Conclave – "Manak Mahotsav".
- It was based on the theme 'Standards for Sustainable Development Goals - A Shared Vision for a Better World'.

About ISO

- International Organization for Standardization (ISO) is an independent, non-governmental organization with a membership of 167 national standards bodies.
- Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market relevant International Standards.
- History:
  - In London, in 1946, 65 delegates from 25 countries meet to discuss the future of International Standardization.
  - In 1947, ISO officially comes into existence with 67 technical committees (groups of experts focusing on a specific subject).
- ISO is derived from the Greek 'isos', meaning equal.

About BIS

- BIS is the National Standard Body working under the Ministry of consumer affairs, food and public distribution, Government of India.
- The objective is harmonious development of the activities of standardization, product testing and quality certification of goods in the country.

5.13 PARTIAL ECLIPSE OF THE SUN

A partial eclipse of the Sun occurred on October 25, 2022 (3 Kartika, 1944 Saka Era).

- In India the eclipse will begin before sunset in the afternoon and will be seen from most of the places.
- The next solar eclipse will be visible from India on August 2, 2027.
  - It will be a total solar eclipse.

What is a Solar Eclipse?

- A solar eclipse occurs when the moon gets between Earth and the sun, and the moon casts a shadow over Earth.
- A solar eclipse can only take place during the phase of the new moon, when the moon passes directly between the sun and Earth and its shadows fall upon Earth's surface.
- Sometimes the Moon only blocks part of the Sun's light. This is called a partial solar eclipse.
- Other times, the Moon blocks all of the Sun's light. This is called a total solar eclipse.
- As the Moon blocks the Sun's light, it casts a shadow on part of the Earth.
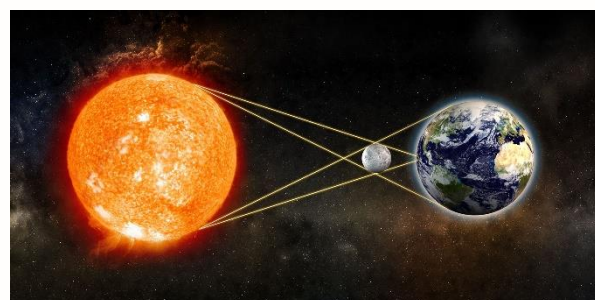
- The moon casts two types of shadows toward the earth.
  - These shadows are known as the umbra and penumbra.

5.14 ISRO'S NEXT-GEN LAUNCH VEHICLE

Indian Space Research Organisation (ISRO) is developing a Next-Gen Launch Vehicle (NGLV) to replace operational systems like the Polar Satellite Launch Vehicle (PSLV).

- The NGLV will be ISRO's foray into reusable launch vehicles that American private space company, SpaceX, boasts of.

Key Points

- The trusted workhorse of ISRO, the Polar Satellite Launch Vehicle (PSLV), may soon be replaced by the Next Generation Launch Vehicle (NGLV).
- It will be a three-stage, reusable heavy-lift vehicle with a payload capability of ten tonnes, nearly five times the payload capacity of the PSLV.
- Further, it will also incorporate semi-cryogenic propulsion.
  - Cryogenic propulsion is centered on using cryogenic propellants stored at frigid temperatures.
  - Cryogenic fuel has a greater mass flow rate than traditional fuels and produces more thrust and power.
  - The fuel's low-temperature liquid state is also environmentally cleaner than conventional fuels.
- The semi-cryogenic stage envisioned for the NGLV consists of refined kerosene as fuel with liquid oxygen (LOX) as an oxidiser.
- ISRO's Geosynchronous Satellite Launch Vehicle (GSLV) already uses a cryogenic engine and can propel a payload of up to four tonnes.
- For heavier loads, for which the NGLV is proposed, semi-cryogenic engines will be vital.
- Its robust design will allow bulk manufacturing, modularity in systems, sub-systems and stages and minimal turnaround time.
- Potential uses will be in launching communication satellites, deep space missions, future human spaceflight and cargo missions.

In Image: ISRO's PSLV and GSLV.

5.14 DISASTER RISK REDUCTION

A new report from the UN Office for Disaster Risk Reduction (UNDRR) and the World Meteorological Organization (WMO) was published.

- It warns that half of the world's countries are not protected by Multi-Hazard Early Warning Systems (MHEWS).

Key Points

- The report is titled 'Global Status of Multi-Hazard Early Warning Systems - Target G'.
- It has been released to mark the International Day for Disaster Risk Reduction (13th October).
- The reports says that less than half of the Least Developed Countries (LDCs) and only one-third of Small Island Developing States (SIDS), have a multi-hazard early warning system.
- Africa, South America and several countries in Arab and Caribbean region have very low coverage of MHEWS.
- The report is based on new data that shows that countries with limited early warning coverage have eight times higher mortality rates during disasters.
- The analysis was made with data from the targets outlined in The Sendai Framework (2015-2030).
- Of the seven targets in the framework, Target G aims to "substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.
- The recent report called for the increased investment in all these elements, with a particular focus on risk knowledge.
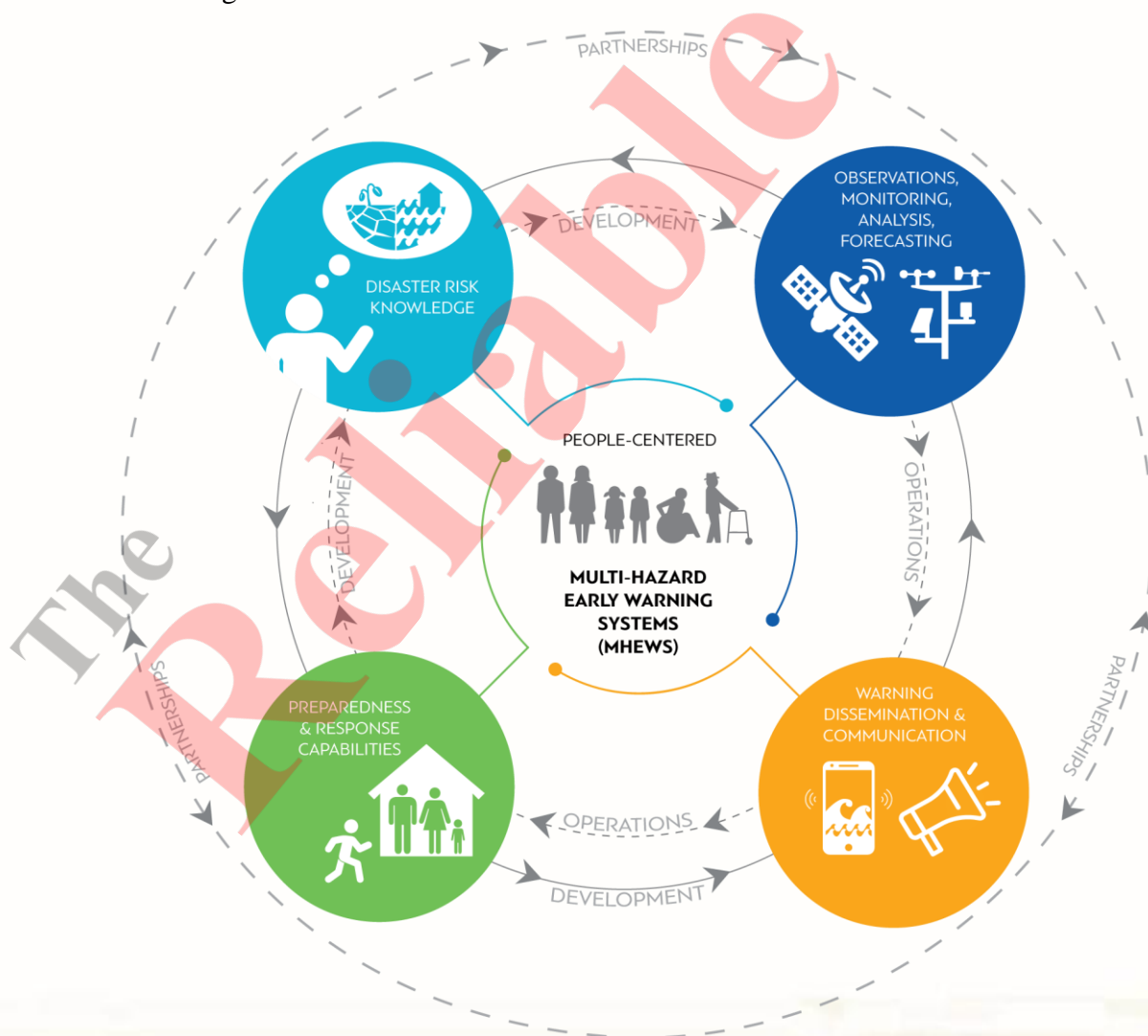
About International Day for Disaster Risk Reduction

- The International Day for Disaster Risk Reduction was started in 1989 by the United Nations General Assembly.
- The objective was to promote a global culture of risk-awareness and disaster reduction.

About Sendai Framework

- The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was the first major agreement of the post-2015 development agenda.
- It provides Member States with concrete actions to protect development gains from the risk of disaster.
- The Sendai Framework works hand in hand with the other 2030 Agenda agreements.
- The Framework was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015.
- It aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health, etc.
- The Framework outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks. They are:
  - Understanding disaster risk;
  - Strengthening disaster risk governance to manage disaster risk;
  - Investing in disaster reduction for resilience and;
  - Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

SUBSTANTIALLY REDUCE
- A. Global disaster mortality
- B. Number of affected people
- C. Economic loss in relation to GDP
- D. Damage to critical infrastructure and services disruption

SEVEN TARGETS TO ACHIEVE BY 2030

SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030

- E. Number of countries with national and local DRR strategies by 2020
- F. International cooperation to developing countries
- G. Availability and access to early warning systems and DRR information

SUBSTANTIALLY INCREASE

5.15 STAR-FILLED PORTRAIT OF PILLARS OF CREATION

NASA's James Webb Space Telescope has captured a lush, highly detailed landscape – the iconic Pillars of Creation – where new stars are forming within dense clouds of gas and dust.

- The three-dimensional pillars look like majestic rock formations, but are far more permeable.

Key Points

- These iconic Pillars of Creation is located in the centre of the Eagle Nebula (it is a constellation of stars), which is also known as Messier 16.
- The images show vast, towering columns of dense clouds of gas and dust where young stars are forming in a region some 6,500 light-years from Earth.
- At the ends of several pillars are bright red, lava-like spots.
  - These are ejections from stars that are still forming, only a few hundred thousand years old.
- The pillars were made famous by the Hubble Space Telescope, which first captured them in 1995 and then again in 2014.
- This new view will help researchers revamp their models of star formation by identifying far more precise counts of newly formed stars, along with the quantities of gas and dust in the region.

About James Webb Space Telescope

- The telescope is the result of an international collaboration between NASA, the European Space Agency (ESA) and the Canadian Space Agency.
- It is currently at a point in space known as the Sun-Earth L2 Lagrange point, approximately 1.5 million km beyond Earth's orbit around the Sun.
- It's the largest, most powerful infrared space telescope ever built.
- It is the successor to Hubble Telescope.

6.1 SWACHH SURVEKSHAN AWARDS 2022

The President formally released the Swachh Survekshan 2022 dashboard and gave away the top 12 awards.

- Swachh Survekshan 2022, has been released as a part of the Swachh Bharat Mission- Urban 2.0.

Key Points

- Indore, the city of lakes and palaces, walked away with the Cleanest City title for the sixth consecutive year, in the 'more than 1 lakh population' category.
- Surat was adjudged the second cleanest city, for the second time in a row.
- Navi Mumbai bagged the third spot.
- In the population category of 'less than 1 lakh', Panchgani and Karad from Maharashtra bagged the first and third positions respectively.
    - While Patan from Chhattisgarh bagged the second position.
- Tirupati received the best city award in Safai Mitra Suraksha while Haridwar in Uttarakhand received the award for the best Ganga town in more than one lakh population cities.
- Shivamogga in Karnataka received the fast mover city award.
- Indore further cemented its position by emerging as India's first 7-star Garbage Free city.
- Surat, Bhopal, Mysuru, Navi Mumbai, Vishakhapatnam, and Tirupati earned 5-star Garbage Free certifications.
- Madhya Pradesh emerged as the 'Cleanest State' in the category of "more than 100 Urban Local Bodies", relegating Chhattisgarh.
- Similarly, Tripura emerged as the Cleanest State award in the "less than 100 ULBs category", dislodging Jharkhand.

What are Swachh Survekshan Awards?

Swachh Survekshan has been conducted since 2016 and is the world's largest urban sanitation and cleanliness survey.

- It has been instrumental in fostering a spirit of healthy competition among towns and cities.
- The objective is to improve their service delivery to citizens and towards creating cleaner cities.
- It is conducted under the ambit of the Swachh Bharat Mission (Urban).
- The primary goal of Swachh Survekshan is to encourage large-scale citizen participation and create awareness amongst all sections of society.
    - About the importance of working together toward making towns and cities better places to reside in.
- Nodal Ministry: Ministry of Housing and Urban Affairs (MoHUA).

Coverage of Swachh Survekshan 2022

4,354 ULBs	**62** Cantonment Boards	**91** Ganga Towns	**90,441** Wards	**2,701** Assessors
	16,501 Plants (WWTP, LWTP, FSTP)	**17,030** Commercial Areas	**24,744** Residential Areas	**22,797** CT/PTs
	73,95,680 Citizen Feedback (Online)	**18,17,513** Citizen Feedbacks (Face to Face)	**400GB** of pdf documents submitted by ULBs	**22,26,805** Photographs Captured
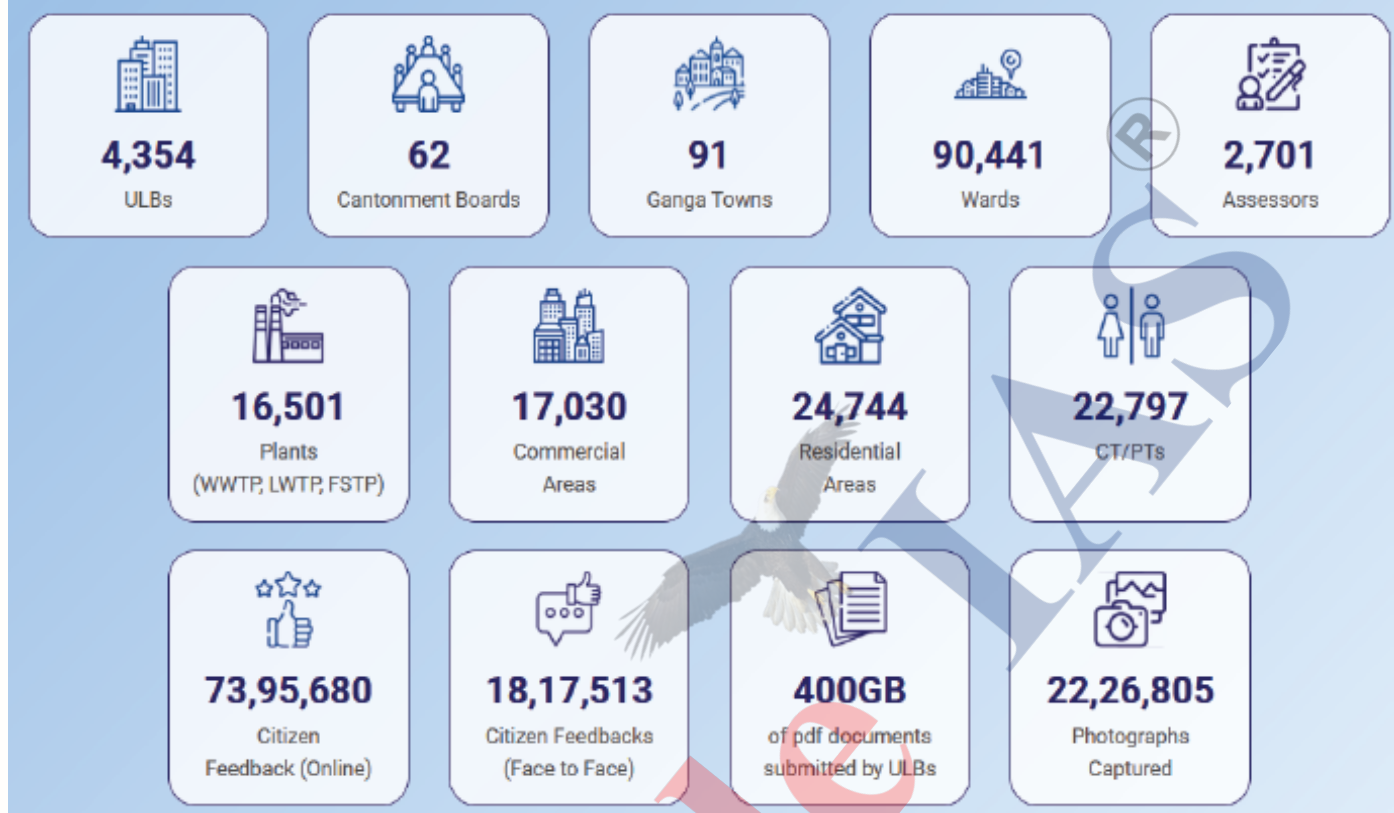
Status of Swachhata in Urban India – 2022

- ULBs with door to door waste collection- 1161.
- ULBs with segregated waste at source- 1493.
- ULBs with welfare schemes for sanitation workers- 1553.
- ULBs with ban Imposed on use, sale and storage of single use plastic- 1549.
- ULBs with wet waste processing facilities- 1069.
- ULBs with dry waste processing facilities- 1240.
- ULBs with hazardous waste processing facilities- 565.
- ULBs with bulk waste generators processing the waste onsite- 762.

6.2 SWACHH BHARAT DIWAS

The President of India, Smt Droupadi Murmu, graced the event organised by the Ministry of Jal Shakti to celebrate Swachh Bharat Diwas on October 2, 2022.

- On the occasion, she presented Swachh Survekshan Grameen awards in various categories.

Key Points

- Since the launch of 'Swachh Bharat Mission-Gramin' in 2014, more than 11 crore toilets have been constructed.
  - And about 60 crore people have changed their habit of open defecation.
- India has achieved the UN's Sustainable Development Goal number-6, 11 years before the deadline of 2030.
  - Goal 6: Ensure access to water and sanitation for all.

- Currently, the Government of India is implementing the second phase of 'Swachh Bharat Mission-Gramin', which aims to make all six lakh villages of the country ODF Plus.

6.3 SCHEME FOR MENTORING YOUNG AUTHORS – YUVA 2.0

The Ministry of Education, Department of Higher Education, launched YUVA 2.0 - Prime Minister's Scheme for Mentoring Young Authors.
- It is an Author Mentorship programme to train young and budding authors (below 30 years of age).

Key Points
- In view of the significant impact of the first edition of YUVA with large scale participation from young and budding authors in 22 different Indian languages and English,
  - YUVA 2.0 is now being launched.
- YUVA 2.0's objective is to promote reading, writing and book culture in the country, and project India and Indian writings globally.
- YUVA 2.0 is on the theme 'Democracy (institutions, events, people, constitutional values – past, present, future)' in an innovative and creative manner.
- This scheme will thus help to develop a stream of writers who can write on a spectrum of subjects to promote Indian heritage, culture and knowledge system.
- The National Book Trust, India, under the Ministry of Education is the Implementing Agency.
  - It will ensure phase-wise execution of the Scheme under well-defined stages of mentorship.
- The books prepared under this scheme will be published by National Book Trust, India.
- The books will also be translated into other Indian languages ensuring the exchange of culture and literature, thereby promoting 'Ek Bharat Shreshtha Bharat'.

6.4 MINISTRY ISSUES ADVISORY AGAINST BETTING

The Ministry of Information and Broadcasting issued two Advisories, one for private television channels and the other for digital news publishers and OTT platforms.
- It strongly advised them to refrain from showing advertisements of online betting sites and surrogate advertisements of such sites.

Key Points
- The Ministry had earlier issued an Advisory on 13 June, 2022 advising newspapers, private TV channels and digital news publishers to refrain from publishing advertisements of online betting platforms.
- Several sports channels on television, as well as on OTT platforms, have recently been showing advertisements of offshore online betting platforms.
- These advertisements contained direct and surrogate advertisements of offshore betting platforms such as Fairplay, PariMatch, Betway, Wolf 777, and 1xBet.

- The Ministry has informed that online offshore betting platforms are now using news websites as a surrogate product to advertise the betting platforms on digital media.
- In such cases, the Ministry has found that the logos of surrogate news websites bear striking resemblance to betting platforms.
- Moreover, the Ministry has stated that neither the betting platforms nor the news websites are registered under any legal authority in India.
  - Such websites are promoting betting and gambling under the garb of news as surrogate advertising.
- The ministry stated that since betting and gambling is illegal in most parts of the country, advertisements of these betting platforms as well as their surrogates are also illegal.
- The Advisories relied upon the provisions of the Consumer Protection Act 2019, Cable TV Network Regulation Act 1995 and the IT Rules, 2021
- The Ministry has mentioned that betting and gambling pose significant financial and socio-economic risk for the consumers, especially youth and children.

6.5 ONLINE BUILDING PLAN APPROVAL SYSTEM (OBPAS)

Government has approved the extension of Online Building Plan Approval System (OBPAS) under eChhawani portal to five more Cantonment Boards.

- These Cantonment Boards are, Agra, Ranikhet, Babina, Jammu and Cannanore.

Key Points

- This will further enhance the speed, accuracy, consistency and transparency in the process of building plan scrutiny in these cantonments.
- With this extension, the benefits under OBPAS can now be availed by residents living in 22 Cantonment Boards across the country.
- In order to make the process simpler and to reduce the compliance burden, OBPAS has standardized the application form and process across cantonment boards.
- The entire building plan will be processed in a short time varying between 2 days to 11 days depending on location of the site (within or outside civil area).

About eChhawani

- eChhawani is a Citizen Centric project of Directorate General of Defence Estates, Ministry of Defence.
- Its objective is to provide online services across 62 Cantonment Boards through a common web portal in paperless, faceless and cashless manner.
- Using eChhawani portal citizens can avail all civic services offered by respective Cantonment Board.
- The major services which are currently offered to citizens include –
  - Information Portal, Trade License, Public Grievances,
  - Online Challan Payment System, Self-generation of Challan,
  - Lease Renewal, Birth and Death Certificates, etc.

6.6 POVERTY AND SHARED PROSPERITY 2022

Recently, the World Bank released a report titled "Poverty and Shared Prosperity 2022 : Correcting Course".

Key Findings of the Report
- Global Poverty Reduction
- Global poverty reduction has been slowing down since 2015 but the Covid pandemic and the war in Ukraine have completely reversed the outcomes.
- By 2015, the global extreme-poverty rate had been cut by more than half.
- Since then, poverty reduction has slowed in tandem with subdued global economic growth.
- As such, the global goal of ending extreme poverty by 2030 would not be achieved.

People living below the Poverty Line
- In 2020 alone, the number of people living below the extreme poverty line rose by over 70 million.
    - This is the largest one-year increase since global poverty monitoring began in 1990.
- Given current trends, 574 million people—nearly 7% of the world's population—will still be living on less than USD 2.15 a day in 2030, with most in Africa.
- Rise in Inequalities:
- The poorest people bore the steepest costs of the pandemic:
    - Income losses averaged 4% for the poorest 40% which is double the losses of the wealthiest 20% of the income distribution.
- Global inequality rose, as a result, for the first time in decades.
- Global median income declined by 4% in 2020—the first decline since measurements of median income began in 1990.

The COVID-19 pandemic triggered a historic shock to global poverty
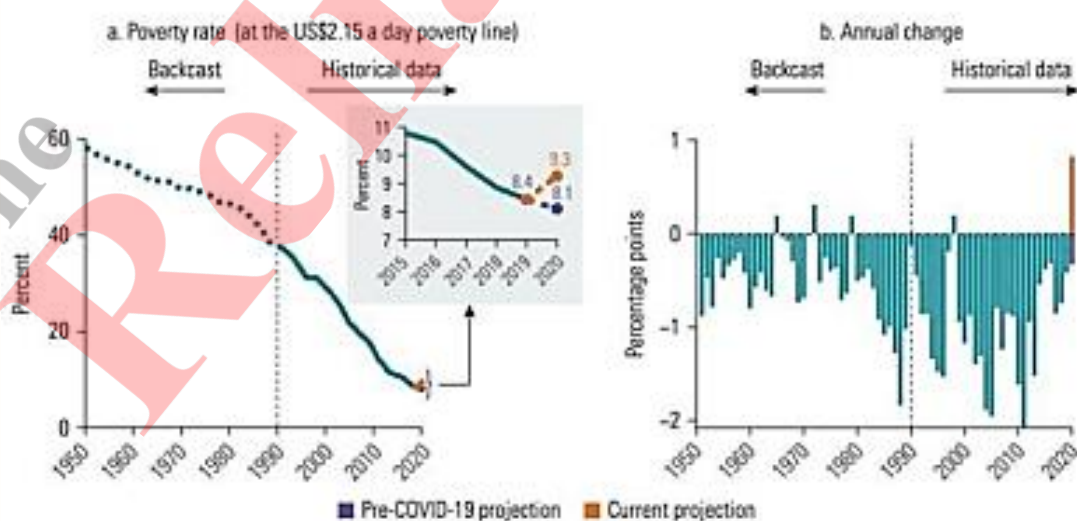
What is the State of Poverty in India?

- According to the World Bank published the paper titled 'Poverty has declined over the Last Decade but not as much as previously thought'.
- Extreme poverty in India was 12.3% points lower in 2019 compared with 2011.
  - This can be seen as poverty headcount rate declined from 22.5% in 2011 to 10.2% in 2019, with a comparatively sharper decline in rural areas.
- Poverty reduction was higher in rural areas compared with urban India.
- Rural poverty declined from 26.3% in 2011 to 11.6% in 2019, while in urban areas the decline was from 14.2% to 6.3% in the corresponding period.

Poverty Estimation

- Poverty estimation in India is carried out by NITI Aayog's task force.
- This is done through the calculation of poverty line based on the data captured by the National Sample Survey Office under the Ministry of Statistics and Programme Implementation (MOSPI).
- Poverty line estimation in India is based on the consumption expenditure and not on the income levels.

Suggestions for Poverty Reduction

- National policy reforms can help restart progress in reducing poverty.
- Stepped-up global cooperation will also be necessary.
- In fiscal policy, governments should act promptly on three fronts:
  - Avoid Broad Subsidies, increase targeted cash transfers.
  - Focus on Long-Term Growth.
  - Mobilize Domestic Revenues without Hurting the Poor.

6.7 DIGITAL SERVICES ACT (DSA) OF EU

The European Union (EU) has given final approval to online safety-focused legislation called Digital Services Act (DSA).

What is the Digital Services Act?

- The DSA is "a set of common rules on intermediaries' obligations and accountability across the single market", and ensures higher protection to all EU users, irrespective of their country.
- Objective: The DSA will tightly regulate the way intermediaries, especially large platforms such as Google, Facebook, and YouTube, function when it comes to moderating user content.

Features of the Digital Services Act?

- Faster Removals and Provisions to Challenge:
  - As part of the overhaul, social media companies will have to add "new procedures for faster removal" of content deemed illegal or harmful.
  - They will also have to explain to users how their content takedown policy works.
  - The DSA also allows users to challenge takedown decisions taken by platforms and seek out-of-court settlements.
- Bigger Platforms have Greater Responsibility:
  - The law avoids a one-size fits all approach and places increased accountability on the Big Tech companies.

- Under the DSA, 'Very Large Online Platforms' (VLOPs) and 'Very Large Online Search Engines' (VLOSEs), that is platforms, having more than 45 million users in the EU, will have more stringent requirements.
- Direct Supervision by the European Commission:
  - The European Commission will be responsible for centrally supervising these requirements and their enforcement.
- More Transparency on how Algorithms Work:
  - VLOPs and VLOSEs will face transparency measures and scrutiny of how their algorithms work.
  - These platforms will be required to conduct systemic risk analysis and reduction to drive accountability about the society impacts of their products.
  - VLOPs must allow regulators to access their data to assess compliance and let researchers access their data to identify systemic risks of illegal or harmful content.
- Clearer Identifiers for ads and who's Paying for them:
  - Online platforms must ensure that users can easily identify advertisements and understand who presents or pays for the advertisement.
  - They must not display personalised advertising directed towards minors or based on sensitive personal data.

6.8 TELE-MANAS INITIATIVE

Tele Mental Health Assistance and Networking Across States (Tele-MANAS) initiative was launched on the occasion of World Mental Health Day.

- Government of India had announced National Tele Mental Health Programme (NTMHP) in the Union Budget 2022-23.

Key Points

- Tele-MANAS aims to provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or under-served areas.
- The programme includes a network of 23 tele-mental health centres of excellence.
- NIMHANS (National Institute of Mental Health and Neurosciences) will be the nodal centre.
- International Institute of Information Technology-Bangalore (IIITB) will provide technology support.
- Tele-MANAS will be organised in two tier system.
- Tier 1 comprises of state Tele-MANAS cells which include trained counsellors and mental health specialists.
- Tier 2 will comprise of specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation.
- Presently there are 5 regional coordination centres along with 51 State/UT Tele MANAS cells.
- The initial rollout providing basic support and counselling through centralized Interactive Voice Response system (IVRS) is being customized for use across all States and

Tele MANAS: CALLING MECHANISM
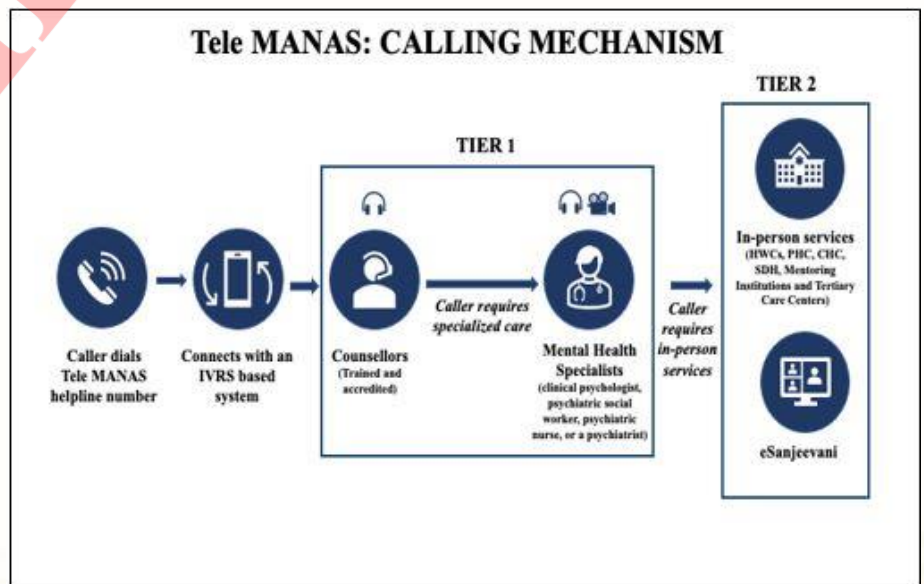
UTs.

- Tele-MANAS will also be linked with other services like National tele-consultation service, e-Sanjeevani, Ayushman Bharat Digital Mission, etc.
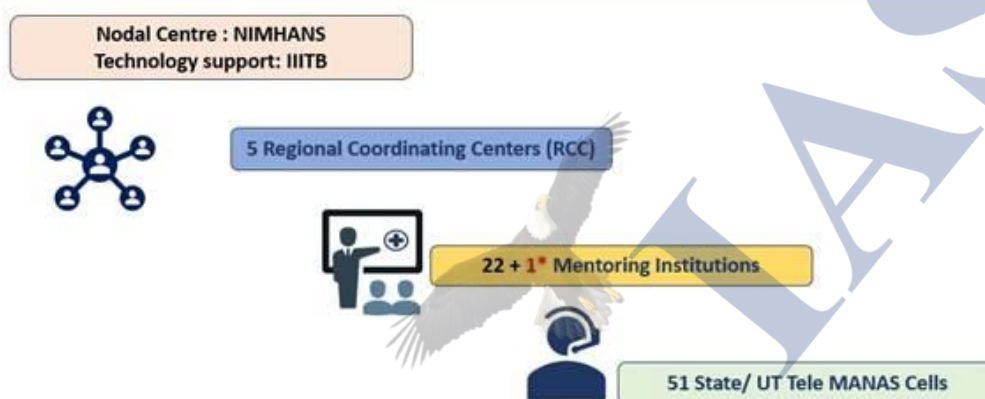- A toll-free, 24/7 helpline number (14416) has been set up across the country allowing callers to select the language of choice for availing services.
- Service is also accessible with 1-800-91-4416.
- The calls would be routed to Tele-MANAS cells in the respective state and union territory.

Note: E-Manas, the tele-counselling programme, was launched by the Karnataka State government during the first wave of COVID-19 in association with NIMHANS.

About National Institute of Mental Health and Neuro Sciences

- The National Institute of Mental Health and Neuro Sciences (NIMHANS) is a multidisciplinary institute for patient care and academic pursuit in the field of mental health and neurosciences.
- The Institute provides inputs to the Central and State Governments in various areas.
- The Institute has emerged as the nodal centre for evolving national policies in the field of mental health, neurosciences and injury.
- The Central Government declared it a 'Deemed University' in 1994.
- In 2012, NIMHANS was conferred the status of an 'Institute of National Importance'.

6.9 MAHILA KISAN DIWAS

Ministry of Agriculture & Farmer's Welfare celebrated 'Mahila Kisan Diwas' or 'International Rural Women Day' on 15th October, 2022.

- The National Gender Resource Centre in Agriculture (NGRCA) organised the event in collaboration with National Institute of Agricultural Extension Management (MANAGE).

Key Points

- The theme of this year Mahila Kisan Diwas is 'Millets: Empowering Women and Providing Nutritional Security'.
  - This is keeping in view of the fact that 2023 has been declared as the 'International Year of Millets by United Nations (UN).
- In 2021, International Rural Women's Day was marked with the theme' rural women cultivating good food for all.'
- Converging with the objectives of October 15, it is worth noting October 16 is observed as World Food Day.

Millets: The food of the future

- Millets are nutrient-dense traditional grasses favourable to arid climates.
- Ragi (finger millet), Jowar (Sorghum), Sama (Little millet), Bajra (pearl millet), Variga (Porso millet), and other minor millets such as Kodu and Kutki are some examples.

- Millet cultivation has become a climate-smart proposition, especially in areas prone to extreme weather events.
- Millets are traditional grains, grown and eaten in in the indian subcontinent for at least the past 5000 years.
- They are rain-fed, hardy grains which have low requirements of water and fertility when compared to other popular cereals.
- Millets are highly nutritious, rich in fibre and gluten-free, making them easy for the body to absorb.
- They are rich in a huge spectrum of micronutrients, including calcium, iron, phosphorus, etc.
- They are slow digesting foods which don't cause the huge spike in blood sugar.

6.10 GLOBAL HUNGER REPORT 2022

The Global Hunger Report 2022 was released by Concern Worldwide and Welt Hunger Hilfe, Non-Government Organisations from Ireland and Germany respectively.

- India has been ranked at 107 among 121 countries.

Key Points

- The Hunger Index measures countries' performance on four component indicators –
  - Undernourishment- the share of the population whose caloric intake is insufficient.
  - Child wasting- the share of children under the age of five who have low height for their age.
  - Child stunting- the share of children under the age of five who have low weight for their height.
  - Child mortality - the mortality rate of children under the age of five.
- The 2022 Global Hunger Index is the 17th edition of the Hunger Index (since 2006).
- GHI ranks countries on a 100 point scale, 0 representing zero/no hunger.
- Globally, the progress against hunger has largely stagnated in recent years, with a global score of 18.2 in 2022 as compared to 19.1 in 2014.
- Top performers in GHI 2022 – Belarus, Bosnia & Herzegovina, Chile, China and Croatia.
- Worst Performers in GHI 2022 – Chad, Democratic Republic of Congo, Madagascar, Central African Republic and Yemen.
- India ranks 107th out of 121 countries in the GHI 2022 rankings.
  - With a score of 29.1, India has a level of hunger that is serious.
- According to the latest data, India has the

Food for thought

India's score of 29.1 in the 2022 Global Hunger Index falls under the "serious" category in the hunger meter. It ranked 107 out of the 121 countries analysed below Rwanda and Ethiopia

=< 9.9 low	10-19.9 moderate	20-34.9 serious	35-49.9 alarming	>= 50 extremely alarming
		29.1		

Rankings	Country		
102	Rwanda	106	Sudan
103	Nigeria	107	India
104	Ethiopia	108	Zambia
105	Republic of Congo	109	Afghanistan
		110	Timor-Leste

highest child wasting rate of all countries covered in the GHI.

- The only country in South Asia that performs worse than India on the index is Afghanistan with 109th rank.

Government of India's Response

- The Union Ministry of Women and Child Development issued a criticism of the latest GHI ranking (2022).
- The government said that the index is an erroneous measure of hunger and suffers from serious methodological issues.
- The data was collected from a minuscule sample for a country of India's size.
- The report uses FIES (Food Insecurity Experience Scale) to compute the PoU (Proportion of Undernourished) value for India.
- The report lowers India's rank based on the estimate of the PoU population for India at 16.3%.
- Three out of the four indicators used for the calculation of the index are related to the health of Children that cannot be representative of the entire population.
- Importantly, the fourth and most important indicator estimate of the PoU population is based on an opinion poll conducted on a very small sample size of 3000.
- The government has raised the matter with FAO not to use such estimates based on FIES survey module data.

6.11 PM KISAN SAMMAN SAMMELAN 2022

The Prime Minister inaugurated PM Kisan Samman Sammelan 2022 at Indian Agricultural Research Institute in New Delhi.

- The Prime Minister also inaugurated 600 Pradhan Mantri Kisan Samruddhi Kendras (PMKSK) under the Ministry of Chemicals & Fertilisers.

Key Points

- Furthermore, the Prime Minister also launched Pradhan Mantri Bhartiya Jan Urvarak Pariyojana - One Nation One Fertiliser.
  - Under this scheme, 'Bharat Urea Bags' are launched.
  - These will help companies market fertilizers under the single brand name "Bharat".
  - An e-magazine on fertilizer, 'Indian Edge' also launched by the PM.
  - It will provide information on domestic and international fertilizer scenarios.
- Pradan Mantri Kisan Samruddhi Kendras
  - Under this scheme, more than 3.3 lakh retail fertilizer shops in the country will be converted into PMKSK in a phased manner.
  - These Kendras will cater to several farmer needs like:
    - providing agri-inputs (fertilizers, seeds, implements);
    - testing facilities for soil, seeds, fertilizers;
    - generating awareness among farmers;
    - providing information regarding various government schemes and
    - ensuring regular capacity building of retailers at block/ district level outlets.

UIDAI TOPS THE GRIEVANCE REDRESSAL

The Unique Identification Authority of India (UIDAI) has once again topped amongst all Group A Ministries, Departments and Autonomous Bodies for resolving public grievances.

- This is according to the rankings report published by Department of Administrative Reforms and Public Grievances (DARPG) for the month of September 2022.

Key Points

- This is the second consecutive month UIDAI has topped the said rankings.
- UIDAI has been a top performer in resolution of Public Grievances received through CPGRAMS.
- A coherent system is enabling UIDAI to resolve around 92% of CRM Grievances within a week.
- UIDAI is also gradually rolling out state-of-the-art Open-Source CRM solution.
- The new Customer Relationship Management (CRM) solution has been designed with advanced features to enhance UIDAI service delivery to residents.
- The new CRM Solution has the capability to support multi-channels like phone call, email, Chatbot, web portal, social media, etc.

About UIDAI

- The Unique Identification Authority of India (UIDAI) is a statutory authority.
- It was established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016.
- It is under the Ministry of Electronics and Information Technology (MeitY).
- UIDAI was created to issue Unique Identification numbers (UID), named as "Aadhaar", to all residents of India.
- Before its establishment as a statutory authority, UIDAI was functioning as an attached office of the then Planning Commission (now NITI Aayog).
- The first UID number was issued on 29 September 2010 to a resident of Nandurbar, Maharashtra.

6.12 MOONLIGHTING

Wipro has sacked around 300 employees for 'moonlighting' as the IT services firm toughens its stand against staffers taking a second job after work hours.

- While some companies such as Wipro have opposed moonlighting other companies have a moonlighting policy which allows employees to take up other work without compromising the company's interest.

Key Points

- Moonlighting refers to a state where employees work for remuneration with entities other than their employer.
- Companies have opposed the practice, saying that employees doing multiple jobs can impact their productivity.
- However, Indian IT firms are divided when it comes to moonlighting. For some, it's unethical while others call it the need of the hour.
- The Factories Act of 1948 places a restriction on the double employment of workers.
- However, this is limited only to 'Factories' and is not applicable to 'Companies' which are regulated by the Companies Act 2013.
- The Supreme Court in Glaxo Laboratories Limited vs Labour Court, Meerut held that the employer is not empowered to regulate the behaviour of workers outside duty hours.
- Since moonlighting is not defined under any statute, it is subject to the court'sinterpretation and the law of the land.

6.13 INTERNATIONAL GIRL CHILD DAY

Every year, International Girl Child Day is observed on 11th October 2022.

- Theme for 2022: "Our time is now—our rights, our future"

Key Points

- First time in history, the Beijing Declaration and Platform for Action in 1995, proposed an action plan to advance the rights of girls.
- In 2011, the United Nations General Assembly adopted Resolution 66/170 to declare 11th October as the International Day of the Girl Child.
- The day is observed to recognise girls' rights and the unique challenges girls face around the world.
- Also, Women's empowerment and gender equality are integral to all 17 Sustainable Development Goals.

6.14 INTERNATIONAL MIGRATION OUTLOOK 2022

- Recently, International Migration Outlook 2022, was released by the Organisation for Economic Co-operation and Development (OECD).
- It is a report on international migration patterns.

Key Points

- Global Data
- After a record decrease in 2020 due to the COVID-19 crisis, permanent-type migration to OECD countries bounced back by 22% in 2021.
- Family migration increased by 40% in 2021 and remained the largest category of inflows.
    - This accounted for more than four in ten new permanent immigrants to the OECD.
- In 2020, there were 4.4 million international students enrolled in the OECD, accounting for 10% of all tertiary students.
- The most important receiving countries are the United States (22%), the United Kingdom (13%) and Australia (10%).
- The United States remained the largest recipient of permanent immigrants in 2021 (834 000), 43% more than in 2020, and 19% less than in 2019.
- In the EU, the upturn in permanent-type migration (+15%) was less pronounced.

Indian Specific Data

- Students from China (22%) and India (10%) account for the largest share of foreign students in OECD countries.
- About a third of the world's population aged 20-29 live in these two countries.
- A look at the stay rates of Indians and Chinese students who had obtained their education permit in 2015 shows that in nearly every OECD country, Indians have significantly higher retention rates than the Chinese.
- Indian students tend to have a higher stay rate than the overall international student population.

About OECD
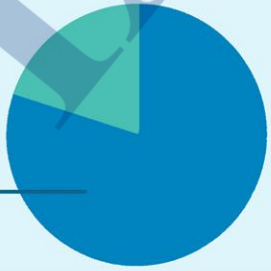
- The Organisation for Economic Co-operation and Development (OECD) is a group of 38 member countries that discuss and develop economic and social policy.
- The OECD is founded to stimulate economic progress and world trade.
- Most OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries.
- OECD was established on Dec. 14, 1960, by 18 European nations, plus the United States and Canada

- The organization is headquartered in the Chateau de la Muette in Paris, France.
- The most recent countries to join the OECD were Colombia, in April 2020, and Costa Rica, in May 2021.
- India is not a member, but a key economic partner.

6.15 GLOBAL MULTIDIMENSIONAL POVERTY INDEX 2022

- The Global Multidimensional Poverty Index (MPI) 2022 was recently released.
- The report is published by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).

Key Points

- The 2022 MPI Report finds that reducing poverty at scale is possible.
- It unveils new 'poverty profiles' that can offer a breakthrough in development efforts to tackle the interlinked aspects of poverty.
- The report identifies a series of 'deprivation bundles' -- recurring patterns of poverty -- that commonly impact those who live in multidimensional poverty across the world.
- The data are used to identify the poverty profiles that are more common in certain places.
- This is a crucial step in designing strategies that address multiple aspects of poverty at the same time.

Key Data Related to India

- About 41.5 crore people exited poverty in India during the 15-year period between 2005-06 and 2019-21.
  - Out of which two-third exited in the first 10 years, and one-third in the next five years.
- The incidence of poverty fell from 55.1% in 2005-06 to 16.4% in 2019-21 in the country.
- The relative reduction from 2015/2016 to 2019/21 was faster.
  - 11.9% a year compared with 8.1% from 2005/2006 to 2015/2016.
- Bihar, the poorest state in 2015-16, saw the fastest reduction in MPI value in absolute terms.

- The percentage of poor in Bihar fell from 77.4 % in 2005-06 to 52.4 % in 2015-16 and further to 34.7 % in 2019-21.
- Of the 10 poorest states in 2015/2016, only one (West Bengal) have emerged out of the list in 2019-21.
- The rest (Bihar, Jharkhand, Meghalaya, Madhya Pradesh, Uttar Pradesh, Assam, Odisha, Chhattisgarh and Rajasthan) remain among the 10 poorest.
- Across states and union territories in India, the fastest reduction in relative terms was in Goa, followed by Jammu and Kashmir.
- Poverty among children fell faster in absolute terms, although India still has the highest number of poor children in the world.
- The incidence of poverty fell from 36.6% in 2015-2016 to 21.2% in 2019-2021 in rural areas and from 9.0% to 5.5% in urban areas.
- Improvement in MPI for India has significantly contributed to the decline in poverty in South Asia.
- It is for the first time that it is not the region with the highest number of poor people, at 38.5 crore, compared with 57.9 crore in Sub-Saharan Africa.

QUALITY OF LIFE
People who are deprived as a % of total population

	2005-06	2015-16	2019-2021
TOTAL	55.1	27.7	16.4

Indicator	2005-06	2015-16	2019-2021
Nutrition	44.3	21.1	11.8
Child mortality	4.5	2.2	1.5
Years of schooling	24.0	11.6	7.7
School attendance	19.8	5.5	3.9
Cooking fuel	52.9	26.0	13.9
Sanitation	50.4	24.4	11.3
Drinking water	16.4	5.7	2.7
Electricity	29.0	8.6	2.1
Housing	44.9	23.5	13.6
Assets	37.5	9.5	5.6

Source: UNDP

Challenges in Poverty
- India has by far the largest number of poor people worldwide at 22.8 crore, followed by Nigeria at 9.6 crore.
  - Two-thirds of these people live in a household in which at least one person is deprived of nutrition.
- There were also 9.7 crore poor children in India in 2019-2021.
- More than one in five children in India are poor compared with around one in seven adults.
- About 4.2% of the population in the country still live in severe poverty.
- Rural areas account for nearly 90% of poor people.

What is the Global Multidimensional Poverty Index?
- The report is produced by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).
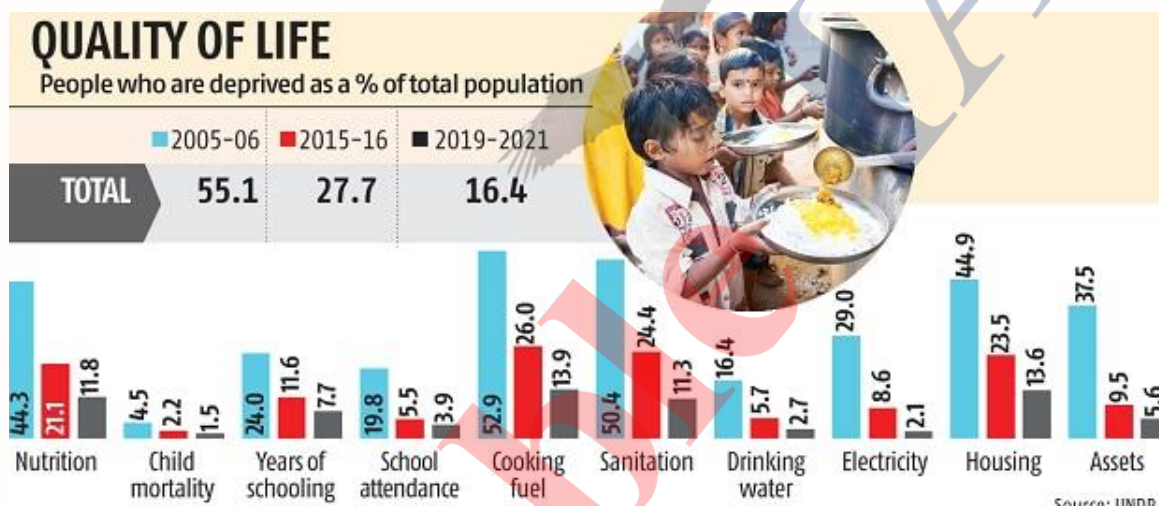- It was first launched in 2010.
- The index is a key international resource that measures acute multidimensional poverty across more than 100 developing countries.
- The MPI monitors deprivations in 10 indicators spanning health, education and standard of living and includes both incidence as well as intensity of poverty.
- All indicators are equally weighted within each dimension.
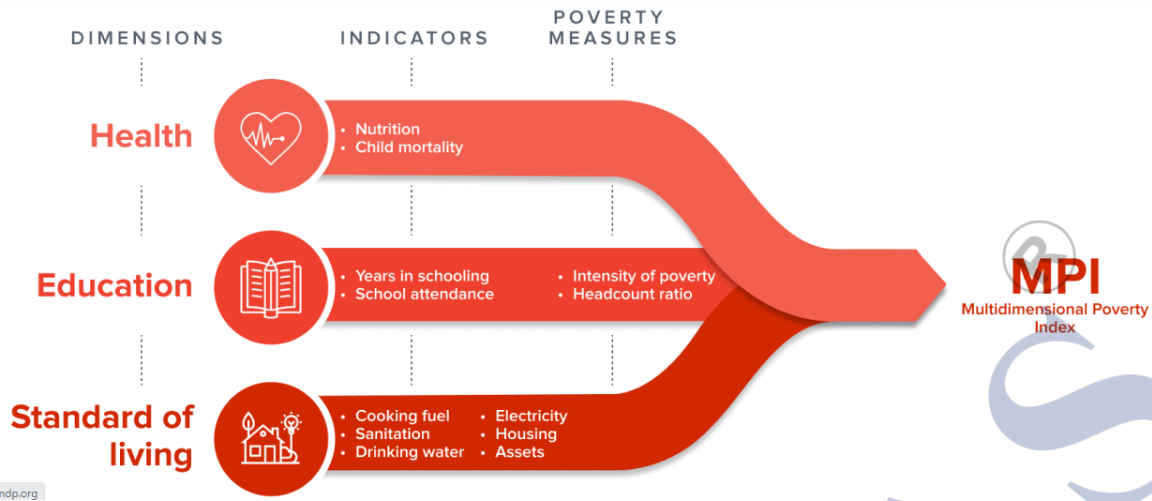
6.16 WORLD FOOD DAY

World Food Day is celebrated to commemorate the establishment of the United Nations Food and Agriculture Organisation (FAO) on 16th October 1945.

- FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger.

Key Points

- It is observed annually to address the problem of global hunger.
- It emphasises Sustainable Development Goal 2 (SDG 2) i.e., Zero Hunger.
- Theme: Leave No One Behind.

The Hunger Hotspots Outlook (2022-23)

- The report is published by FAO and World Food Programme.
- It had highlighted key hunger hotspot regions such as Afghanistan, Ethiopia, Nigeria, Horn of Africa, etc.
- The report highlighted that over 205 million people across 45 countries will need emergency food assistance to survive.
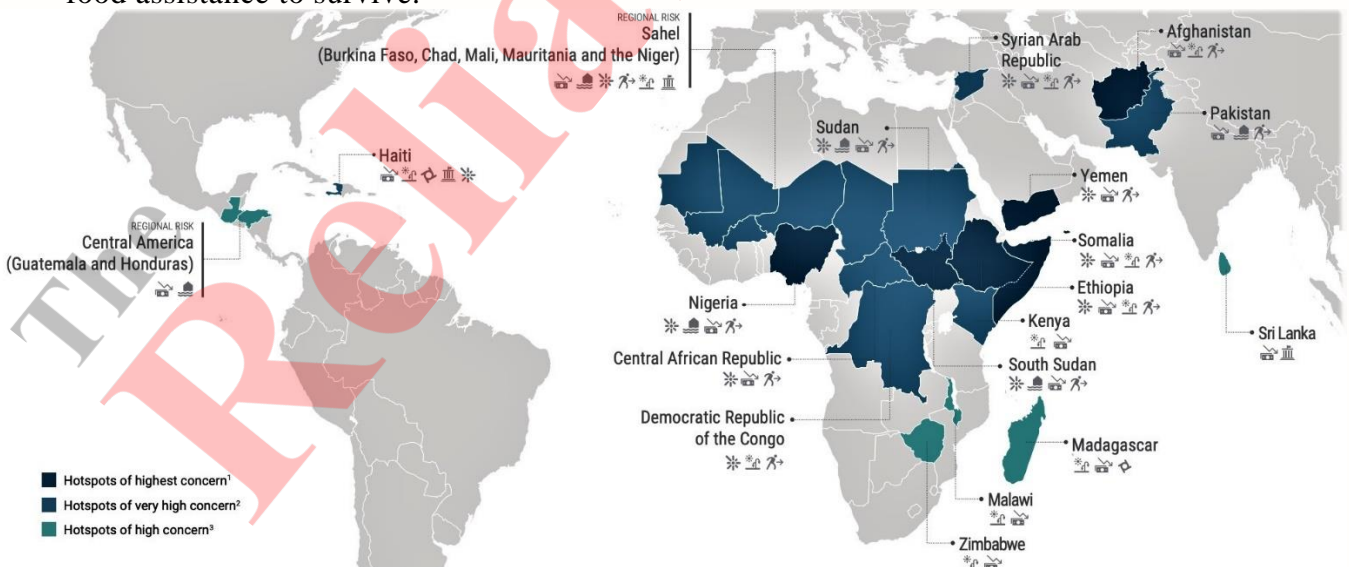
Early warning hunger hotspots
October 2022 to January 2023

6.17 WORLD HEALTH SUMMIT 2022

Recently, at the World Health Summit, global leaders confirmed USD 2.6 billion in funding toward the Global Polio Eradication Initiative's (GPEI) 2022-2026 Strategy to end polio.

- The World Health Summit is the unique international strategic forum for global health.

About World Health Summit

- The World Health Summit is an international health conference.
- The 2022 World Health Summit will focus on the theme, 'Making the Choice for Health.'
- The event aims to stimulate innovative approaches to health challenges worldwide.
- The World Health Summit 2022 was the first World Health Summit together with WHO.
  - It is a part of a long-term close collaboration, as WHO has been a strong strategic partner of the World Health Summit since its very beginning.

About Global Polio Eradication Initiative's (GPEI) 2022-2026 Strategy

- In 2020, the GPEI launched a revision of the strategy for polio eradication.
- Partners and stakeholders collectively identified remaining obstacles to polio eradication, in order to inform a revised and strengthened plan.
- They then developed optimal approaches to reaching the goal, adapted to the global health context and based on lessons learned.
- The strengthened plan aims to achieve and sustain a polio-free world through a focus on implementation and accountability.

STRATEGIC OBJECTIVES

- Create urgency and accountability to generate greater political will by re-envisioning the GPEI's relationship with governments and systematizing political advocacy.
- Generate vaccine acceptance through context-adapted community engagement that reduces refusals and increases community commitment to child immunization.
- Improve frontline success through changes to campaign operations, including the recognition and empowerment of the frontline workforce.
- Expedite progress through expanded integration efforts with a broader range of partners in immunization, essential health care and community services.
- Enhance detection and response through sensitive surveillance that provides the programme with critical information for action.

About Polio

- Polio, or poliomyelitis, is a disabling and life-threatening disease caused by the poliovirus.
- The virus spreads from person to person and can infect a person's spinal cord, causing paralysis (can't move parts of the body).
- Most people who get infected with poliovirus will not have any visible symptoms.
- About 1 out of 4 people (or 25 out of 100) with poliovirus infection will have flu-like symptoms that can include:
  - Sore throat, Fever, Tiredness, Headache, etc.
- A smaller proportion of people with poliovirus infection will develop other, more serious symptoms that affect the brain and spinal cord.

- Paralysis is the most severe symptom associated with poliovirus because it can lead to permanent disability and death.
- Between 2 and 10 out of 100 people who have paralysis from poliovirus infection die, because the virus affects the muscles that help them breathe.
- Even children who seem to fully recover can develop new muscle pain, weakness, or paralysis as adults, 15 to 40 years later.
  - This is called post-polio syndrome.
- There is no cure, but it can be prevented through Immunisation.
- Vaccines:
  - Oral Polio Vaccine (OPV)
  - Injectable Polio Vaccine (IPV)

6.18 ONE HEALTH JOINT PLAN OF ACTION

FAO, UNEP, WHO and World Organization for Animal Health have together launched One Health Plan.

- It is a joint plan of action to address health threats to humans, plants and the environment together.

Key Points

- The Action plan is developed through a participatory process and provides a set of activities to strengthen collaboration across all sectors responsible for addressing health concerns at the human-animal-plant- environment interface.
- The plan is valid from 2022-2026 and is aimed at mitigating the health challenges at global, regional, and country levels.
- One Health is an approach that recognizes that the health of people is closely connected to the health of animals and our shared environment.
- Focus Areas of the Action Plan:
  - Enhance capacities to strengthen the health system.
  - Reduce risk from zoonotic epidemics and pandemics.
  - Control and eliminate zoonotic, neglected tropical and vector-borne diseases.
  - Assess, manage and communicate effectively food safety risks.
  - Curb Antimicrobial Resistance (termed as 'silent pandemic').
  - Environment and health Policies must be integrated into One Health.
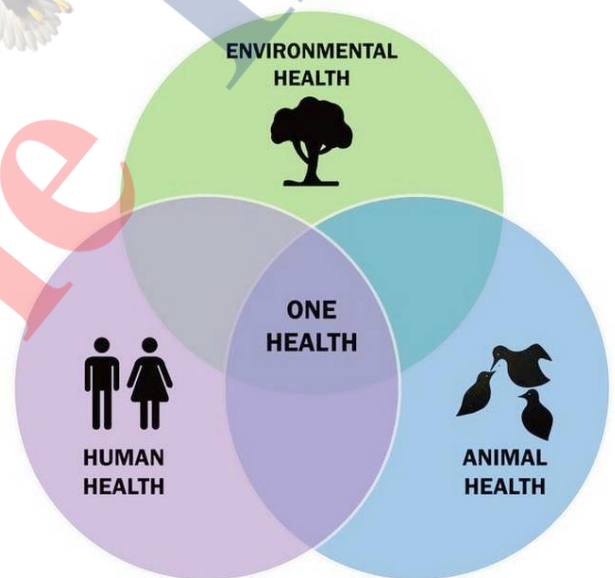
7. INTERNATIONAL RELATION

7.1 U.S. - PACIFIC ISLAND COUNTRY SUMMIT

Recently, the US President hosted the first-ever U.S. - Pacific Island Country Summit in Washington, D.C.

- White House also announced USD 810 million in funding for Pacific Islands.

About the Pacific Island Countries

- The Pacific Island Countries are a cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean between Asia, Australia and the Americas.
- They include the following countries:
- Cook Islands, Fiji, Kiribati, Republic of Marshall Islands,
- Federated States of Micronesia (FSM),
- Nauru, Niue, Palau, Papua New Guinea, Samoa,
- Solomon Islands, Tonga, Tuvalu and Vanuatu.
- The islands are divided on the basis of physical and human geography into three distinct parts — Micronesia, Melanesia and Polynesia.

7.2 NORD STREAM PIPELINES

Recently, four leaks were reported at different points in the Nord Stream pipelines, linking Russia and Europe.

About the Nord Stream pipelines

- There are two Nord Stream pipelines, Nord Stream 1 subsea pipeline and Nord Stream 2.
- Nord Stream 1 subsea pipeline:
  - Nord Stream 1 was completed in 2011 and runs from Vyborg in Leningrad (Russia) to Lubmin near Greifswald, Germany.
  - The Russian state-owned gas company Gazprom has a majority ownership in the pipeline.
  - 40% of Europe's pipeline gas came from Russia before the war started.
- Nord Stream pipeline 2: It is an ongoing project.
  - This is a 1,200-km pipeline that runs from Ust-Luga in Russia to Greifswald in Germany through the Baltic Sea.
  - It will carry 55 billion cubic meters of gas per year.
  - The Nord Stream crosses the Exclusive Economic Zones (EEZs) of several countries including: Russia, Finland, Sweden, Denmark and Germany.

7.3 SAPTA KOSI HIGH DAM PROJECT

Recently, India and Nepal have agreed to take forward the Sapta Kosi high dam project through further studies.

- Senior officials of the two sides have met and reviewed the bilateral water-sector cooperation, including the implementation of the Mahakali Treaty.

What is Sapta Kosi High Dam Project?

- Sapta Kosi High Dam is a multipurpose project proposed to be constructed on the Saptakoshi River of Nepal (Known as Kosi River in India).
- The project is primarily aimed to control floods in south-east Nepal and northern Bihar and to generate hydropower.
- The project will provide irrigation, control floods and generate 3,000 MW of electricity.

About Mahakali Treaty

- The Mahakali Treaty was signed in 1996 over the integrated development of the Mahakali River,
  - This included Sarada Barrage, Tanakpur Barrage and Pancheshwar project.
- Mahakali River is also known as Sharda River or Kali Ganga in Uttarakhand.
- It joins Ghagra river in Uttar Pradesh, which is a tributary of Ganga.

7.4 IBSAMAR VII

- The 7th edition of IBSAMAR, a joint multinational maritime exercise, was held at Port Gqeberha (also known as Port Elizabeth), South Africa.
- The Indian Navy was represented in it by the guided missile frigate, INS Tarkash, a Chetak helicopter and MARCOS Special Forces.

Key Points

- IBSAMAR VII is a joint Multinational Maritime Exercise between the Indian, Brazilian and South African Navies.
- The previous edition of IBSAMAR (IBSAMAR VI) was conducted in Simons Town, South Africa in 2018.

- The Joint Maritime Exercise will strengthen maritime security, joint operational training, sharing of best practices and building interoperability.

7.5 6TH EAST ASIA SUMMIT EDUCATION MINISTER'S MEETING

Recently, India participated in the 6th East Asia Summit Education Minister's Meeting held in Hanoi, Vietnam.

About East Asia Summit

- The East Asia Summit (EAS) is the Indo-Pacific's premier forum for strategic dialogue.
- It is the only leader-led forum at which all key Indo-Pacific partners meet to discuss political, security and economic challenges.
- Established in 2005, it is a forum of 18 regional leaders.
- The concept of an East Asia Grouping was first promoted in 1991 by the then Malaysian Prime Minister, Mahathir bin Mohamad.
- It comprises the ten member states of the ASEAN (Association of Southeast Asian Nations) along with 8 other countries.
    - They are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.
    - The eight countries are: Australia, China, Japan, India, New Zealand, the Republic of Korea, Russia and the USA.
- There are six priority areas of regional cooperation within the framework of the EAS.
    - Environment and Energy,
    - Education,
    - Finance,
    - Global Health Issues and Pandemic Diseases,
    - Natural Disaster Management, and
    - ASEAN Connectivity.
- India is one of the founding members of the East Asia Summit.

7.6 90TH INTERPOL GENERAL ASSEMBLY

90th General Assembly of Interpol was recently held in New Delhi, India.

- This is the second time since 1997 the 195 member-strong body is holding such a large conference in India.

About Interpol

- Interpol or International Criminal Police Organization is an inter-governmental organization.
- It has 195 member countries, and help police in all of the member countries to work together to make the world a safer place.

- The General Assembly is INTERPOL's supreme governing body and comprises delegates appointed by the governments of member countries.
- It meets once a year and takes all the major decisions affecting general policy, the resources needed for international cooperation, working methods, finances and programmes of activities.
- Interpol keeps track of the movements of criminals and those under the police radar in various regions.
- The head of Interpol is the President who is elected by the General Assembly.
  - He comes from one of the member-nations and holds office for four years.
- All contact of a country's law enforcement agency with Interpol is through the highest investigating body of the land.
- The Central Bureau of Investigation (CBI) assumes this role in India.

7.7 5TH ASSEMBLY OF THE INTERNATIONAL SOLAR ALLIANCE

The Fifth Assembly of the International Solar Alliance was inaugurated recently by Minister of Power and New & Renewable Energy, India.

- The Republic of India holds the office of the President of the ISA Assembly, with the Government of France as Co-President.

About International Solar Alliance

- The launch of the International Solar Alliance (ISA) was announced by the Hon'ble Prime Minister of India and former Hon'ble President of France on 30th November 2015.
- This was done at the 21st session of United Nations Climate Change Conference of the Parties (COP-21) in Paris, France.
- The International Solar Alliance (ISA) is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies.
- The ISA strives to develop and deploy cost-effective and transformational energy solutions powered by the sun to help member countries develop low-carbon growth trajectories.
- The ISA is guided by its 'Towards 1000' strategy which aims to mobilise USD 1,000 billion of investments in solar energy solutions by 2030.
- It also aims to deliver energy access to 1,000 million people using clean energy solutions and resulting in installation of 1,000 GW of solar energy capacity.
- This would help mitigate global solar emissions to the tune of 1,000 million tonnes of CO_2 every year.
- With the amendment of its Framework Agreement in 2020, all member states of the United Nations are now eligible to join the ISA.
- At present, 110 countries are signatories to the ISA Framework Agreement.
  - Of which 90 countries have submitted the necessary instruments of ratification to become full members of the ISA.
- HQ: The Headquarters is in India with its Interim Secretariat being set up in Gurugram.

- The International Solar Alliance is headed by the Director General who has a term of four years and is eligible for re-election.

7.8 INDIA-AFRICA SECURITY FELLOWSHIP PROGRAMME

The 2nd India-Africa Defence Dialogue (IADD) was held on the sidelines of DefExpo 2022 in Gandhinagar, Gujarat.

- Theme: Adopting Strategy for Synergizing and Strengthening Defence and Security Cooperation.

Key Points

- The Gandhinagar Declaration was adopted as the outcome document of the second edition of the IADD.
- The declaration charts out new areas for enhancing the India-Africa defence and security partnership.
- During the IADD, Raksha Mantri launched the 'India-Africa Security Fellowship Programme.
- The fellowship will give an opportunity to African scholars to pursue research on defence and security issues in India.
- A stipend would also be provided to the scholar.

7.9 BURKINA FASO COUP

Recently, the President of Burkina Faso, Paul-Henri Damiba announced his resignation following violence in the volatile West African nation.

- This is after the military government was overthrown by a group of soldiers in the second coup in around eight months.

Key Points

- Despite Damiba's promises to improve the security situation in the country, the crisis worsened under his government.
- The West African regional bloc Economic Community of West African States (ECOWAS) suspended Burkina Faso from the organisation.
- The bloc had demanded Damiba led Government to hold elections as soon as possible.

About Burkina Faso

- A former French colony, Burkina Faso has suffered chronic instability since gaining independence in 1960, including several coups.
- The country's name, meaning "land of the honest men", was picked by revolutionary military officer Thomas Sankara who took power in 1983.
  - He was toppled and killed in 1987.
- Since 2015, the country has been fighting an insurgency that spilled over from neighbouring Mali.
- This has fuelled anger in the military and damaged the once important tourist industry.
- Landlocked Burkina Faso is one of West Africa's poorest countries.
- It has experienced numerous coups since independence from France in 1960.
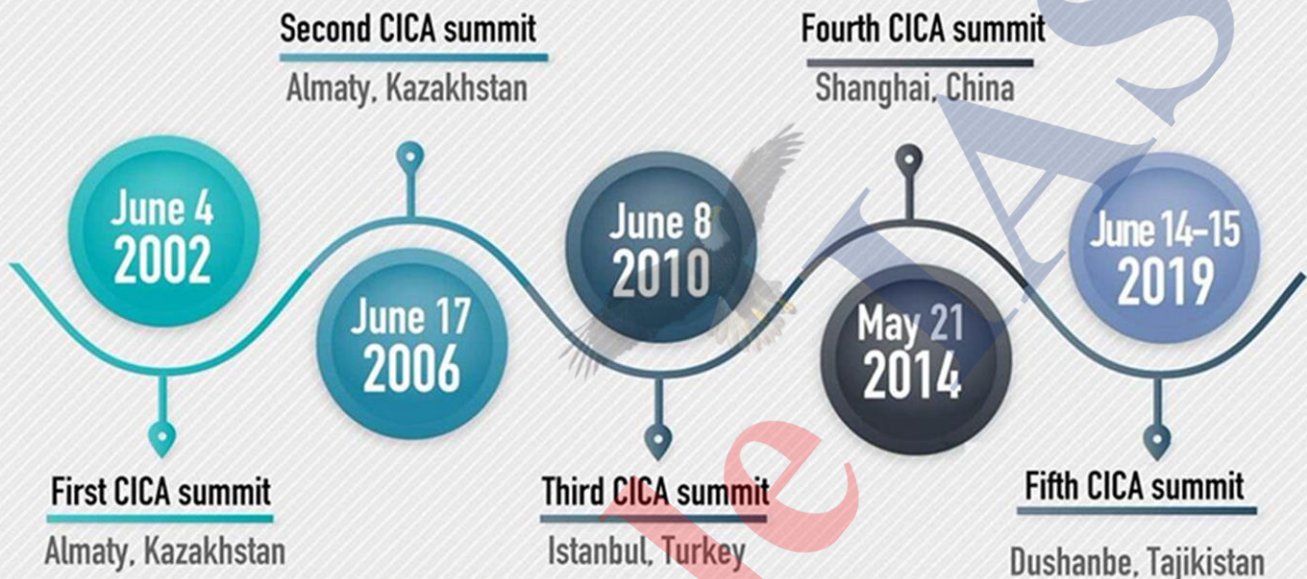
7.10 CONFERENCE OF INTERACTION & CONFIDENCE BUILDING MEASURES (CICA)

The Minister of State for External Affairs addressed the 6th Summit of Conference on Interaction and Confidence Building Measures in Asia (CICA) in Astana, Kazakhstan.

- India is one of the founding members of Conference on Interaction and Confidence Building Measures in Asia (CICA).

Summits:

- Second CICA summit — Almaty, Kazakhstan — June 17 2006
- Fourth CICA summit — Shanghai, China
- First CICA summit — Almaty, Kazakhstan — June 4 2002
- Third CICA summit — Istanbul, Turkey — June 8 2010
- May 21 2014
- Fifth CICA summit — Dushanbe, Tajikistan — June 14-15 2019

Key Points

- The CICA is an intergovernmental forum aimed at strengthening regional cooperation and ensuring peace, security, and stability in Asia.
- The idea of creating the organization was first voiced by Kazakhstan's First President Nursultan Nazarbayev in 1992.
  - This was at the 47th session of the United Nations General Assembly.
- The first CICA summit was held in June of 2002.
- The highest decision-making organ of CICA is the Meeting of the CICA Heads of State and Government (Summit).
- The CICA Summit is convened every four years in order to conduct consultations, review the progress of, and set priorities for CICA activities.
- The Meeting of the Ministers of Foreign Affairs is required to be held every two years.
- CICA members include 27 Asian countries.
- India co-chairs two CICA CBMs (Confidence Building Measures) on the following themes:
  - 'Development of Secure and Effective Systems of Transportation Corridors,' and
  - 'Energy Security'.
- The CICA Secretariat has been located in Almaty (Kazakhstan) since June 2006.

WHO
WE ARE TODAY

27 Member States

Afghanistan	India	Mongolia	Tajikistan
Azerbaijan	Iran	Pakistan	Thailand
Bahrain	Iraq	Palestine	Turkey
Bangladesh	Israel	Qatar	United Arab Emirates
Cambodia	Jordan	Republic of Korea	Uzbekistan
China	Kazakhstan	Russian Federation	Viet Nam
Egypt	Kyrgyzstan	Sri Lanka	

9 Observer States

Belarus	Philippines
Indonesia	Turkmenistan
Japan	Ukraine
Laos	USA
Malaysia	

5 Observer Organizations
United Nations (UN)
International Organization for Migration (IOM)
Organization for Security and Co-operation in Europe (OSCE)
League of Arab States (LAS)
Parliamentary Assembly of Turkic-speaking States (TurkPA)

5 Partner Organizations
Assembly of the People of Kazakhstan (APK)
Economic Cooperation Organization (ECO)
Shanghai Cooperation Organization (SCO)
SCO Regional Anti-Terrorism Structure (SCO RATS)
United Nations Office on Drugs and Crime (UNODC)

In Image: Member countries and other partners.

7.11 18TH HEADS OF ASIAN COAST GUARD AGENCIES MEETING (HACGAM)

It is an apex level forum facilitating the congregation of all the major Coast Guard Agencies of the Asian region, it was established in 2004.

- The Indian Coast Guard (ICG) is hosting the 18th HACGAM in coordination with the HACGAM Secretariat.

About HACGAM

- HACGAM aims at the construction and development of capabilities in coast guard organisations for the Asian region.
- It is of the view that cooperation fostered by the constant efforts of HACGAM member organisations is effective to promote safe and secure maritime environment and cleaner seas in the region.
- Background:
  - In 1999, the number of incidents of piracy and armed robbery against ships in Southeast Asian waters rapidly increased.
  - Against such a background, Japan proposed a meeting of the maritime security authorities concerned.
  - Subsequently, under the initiative of Japan, the Heads of Asian Coast Guard Agencies Meeting (HACGAM) was held in Japan in 2004.

Member Organisation

Participating Countries

Australia, Bangladesh, Bahrain, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Pakistan, Republic of Korea, Singapore, Sri Lanka, Thailand, Turkey and Vietnam.

Participating Region

Hong Kong

Associate Member

ReCAAP ISC

8. GOVERNMENT SCHEME

8.1 THE INDIAN-MADE LCH 'PRACHAND'

The indigenously developed Light Combat Helicopter (LCH) 'Prachand', meaning fierce was formally inducted into the Indian Air Force at the Jodhpur airbase.

- It is designed, developed and extensively test-flown for over a decade by Hindustan Aeronautics Ltd (HAL).

Key Points

- The multi-role attack helicopter has been customised as per the requirements of the Indian armed forces to operate both in desert terrains and high-altitude sectors.
- The LCH is the only attack helicopter in the world that can land and take off at an altitude of 5,000 metres.
  - This makes it ideal to operate in the high altitude areas of the Siachen glacier.
- It is also capable of firing a range of air-to-ground and air-to-air missiles and can destroy air defence operations of the enemy.

The LCH project: Background

- The LCH project can be traced to the 1999 Kargil war when the armed forces felt the need for a dedicated platform capable of operating at high altitudes.
- In October 2006, the government sanctioned the design and development of the LCH.
- The Indian Army joined the programme in December 2013.
- The HAL built four LCH prototypes — technology demonstrators or TDs — and flight-tested them with over 1,600 total flights logging 1,239 flight hours.
- The helicopter prototypes were tested for around a decade under difficult conditions.
  - This includes sea trials in Chennai, extreme cold weather in Leh, desert conditions in Jodhpur and high altitudes in Siachen.
- After extensive flight testing in diverse terrains and weather conditions, the LCH received initial operation clearance on August 26, 2017.
- It was declared ready for production in February 2020.

Main features of LCH

- It is powered by twin Shakti engines which is a collaborative effort of the HAL and France's Safran company.
- The LCH is a 5.8-tonne class combat helicopter with potent ground attack and aerial combat capability.
- The helicopter possesses modern stealth characteristics, robust armour protection and formidable night attack capability.
- The helicopter can fly at a maximum speed of 288 kmph and has a combat radius of 500 km.
- It can also go up to a service ceiling of 21,000 feet, making it ideal to operate in Siachen.
- It incorporates several stealth features like reduced radar and infra-red signatures, crashworthy features for improved survivability, armoured-protection systems and night attack capability.

8.2 RPF- VARIOUS OPERATIONS

In furtherance of the pledge of "Sewa Hi Sankalp" by RPF, a pan India month long drive under the code name SAMSAR (SAMAJIK SAROKAR) was conducted.

Key Points

- The various operations conducted by Railway Protection Force are as follows:
- Operation SEWA: Under this operation, RPF personnel assist the elderly citizens, women, physically disabled and provide amenities like wheelchairs, stretchers, medical help, ambulances, Infant food etc.
- Operation Dignity: Rescuing persons lost or having run away from their homes or disoriented due to certain reason or distressed and in need of care and protection.
  - They are vulnerable for getting exploited or trafficked and are under the risk of serious bodily harm, if not secured in time.
- Operation Nanhe Fariste: This operation undertakes the noble cause of identifying and rescuing children lost/runaway/separated from their family due to various reasons and in need of care & protection.
- Mission Jeevan Raksha: RPF personnel go beyond the call of duty risking their own lives to save other lives.
- Operation Matrishakti: RPF personnel go out of the way to help pregnant women passengers, experiencing labor pain during their train journey.

About Railway Police Service (RPF)

- The Railway Police Service (RPF) is responsible for the security of the railway tracks, personnel and equipment.
- The Director General is at the apex of the service.
- It is the only Central Armed Police Force (CAPF) with powers similar to regular state police forces.
- The Railway Protection Force has its origin since 1882 when the Railway Companies then in existence appointed their own security for each Department.
- After Independence, the Government of India, appointed a Security Adviser to the Railway Board in July, to work out the details for the reorganization of the Security department.
- This led to introduction of the R.P.F. Bill in the Parliament of India for the better protection and security of Railway property.
  - The Railway Protection Force Act was passed in 1957.

8.3 POWEREX-2022

CERT-In and Power-CSIRTs jointly conduct Cyber Security Exercise "PowerEX-2022".

- Theme: "Defending Cyber induced disruption in IT & OT Infrastructure"

Key Points

- Indian Computer Emergency Response Team (CERT-In) in collaboration with Power-CSIRTs (Computer Security Incident Response Teams in Power sector), successfully designed & conducted the Cyber Security Exercise.
- The Objective of the exercise was to "Recognize, Analyse & Respond to Cyber Incident in IT & OT Systems".
- "PowerEX" was hosted by CERT-In on its exercise simulation platform.

- Around 350+ official from various Power Sector Utilities participated in the event.

About CERT-In

- CERT-In is a functional organisation of Ministry of Electronics and Information Technology, Government of India.
- It has been tasked with the objective of securing Indian cyber space.
- CERT-In is the national nodal agency for responding to computer security incidents as and when they occur.
- CERT-In is operational since January 2004.

8.4 DEFEXPO 2022

12th edition of DefExpo-2022, on Land, Naval & Homeland Security Systems Exhibition was held from 18th to 22nd October 2022 at Gandhinagar, Gujarat.

- The Exhibition will be held at Helipad Exhibition Centre (HEC).

Key Points

- It is being held in a first ever four-venue format which promises to engage the public and inspire them to join the Aerospace and Defence manufacturing sector.
- The aim is to showcase the might of the domestic defence industry which is now powering 'Make in India, Make for the World' resolve of the Government.
- It is the first-ever edition exclusively for Indian companies.
- Theme: Path to Pride.

Note: The 11th edition of DefExpo was held at Lucknow (Uttar Pradesh) in 2020.

8.5 INDIGENOUS TRAINER AIRCRAFT HTT- 40

Prime Minister recently unveiled HTT-40, an indigenous trainer aircraft designed and developed by Hindustan Aeronautics Limited (HAL).

- The aircraft has state-of-the-art contemporary systems and has been designed with pilot-friendly features.

Key Points

- The HTT-40 would be used for basic flight training, aerobatics, instrument flying and close formation flights whereas its secondary roles would include navigation and night flying.
- The HTT-40 has completed all systems tests, all PSQR performances, hot weather, sea level and cross wind trials and user assisted technical trials.
- It demonstrated rain water resistance.
- Provisional clearance for airworthiness of the aircraft is received from Centre for Military Airworthiness and Certification (CEMILAC).
- With over 60 per cent in-house parts and collaboration of private industry, it is a shining example of the vision of 'Aatmanirbhar Bharat'.

8.6 SELF-RELIANCE IN DEFENCE PRODUCTION

- According to a study, India ranks fourth among 12 Indo-Pacific nations in self-reliant arms production capabilities.
- The report is released by the Stockholm International Peace Research Institute (SIPRI).

Key Points

- China tops the list, Japan is second, South Korea is in third place, and Pakistan is number 8.
- India is ranked as the second-largest importer of arms for its armed forces in 2016-20.
- Of India's total volume of procurement in 2016–20, 84 per cent was of foreign origin.

Note: SIPRI (est. In 1966) is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.

ARMS EXPORTS & IMPORTS; MILITARY SPENDING IN INDO-PACIFIC REGION

Country	Exporter rank*	Importer rank*	Largest supplier**	Military Spending 2021***	Spending rank****
Australia	3	2	US (69%)	31,754	5
China	1	3	Russia (77%)	293,352	1
India	4	1	Russia (54%)	76,598	2
Indonesia	5	8	US (23%)	8,259	9
Japan	14	6	US (97%)	54,124	3
South Korea	2	4	US (58%)	50,227	4
Malaysia	NA	16	Spain (32%)	3,830	13
Pakistan	13	5	China (72%)	11,305	8
Singapore	7	9	France (43%)	11,115	7
Taiwan	12	15	US (100%)	12,958	6
Thailand	15	10	South Korea (25%)	6,605	10
Vietnam	11	7	Russia (66%)	5,500*****	NA

*Regional rank, 2016-20. Regional ranking is based on 44 jurisdictions in Asia and Oceania as defined in SIPRI databases, **Share of total arms imports, ***Current US$ mn, ****Regional rank, 2021, *****In 2018 NA: Not applicable.
Sources: SIPRI Arms Transfers Database, March 2022; SIPRI Military Expenditure Database, April 2022

9.1 NATIONAL DISASTER MANAGEMENT AUTHORITY

The National Disaster Management Authority (NDMA) recently celebrated its 18th Formation Day.

- Theme 2022: Volunteerism in Disaster Management.

About National Disaster Management Authority

- The National Disaster Management Authority (NDMA) is India's apex statutory body for disaster management.
- The NDMA was formally constituted on 27th September 2006, by the Disaster Management Act, 2005.
- The Prime Minister is its chairperson and it has nine other members.
- One of the nine members is designated as Vice-Chairperson.
- The primary responsibility for the management of disaster rests with the State Government concerned.
- However, the National Policy on Disaster Management puts in place an enabling environment for all i.e., the Centre, state and district.
- The government is working on a programme to set up disaster management volunteers (Aapada Mitra) in 350 districts of the country.
- Aapada Mitra: It is a Central Sector Scheme that was launched in May 2016.
  - NDMA is the implementing agency.
  - It is a programme to identify suitable individuals in disaster-prone regions who can be trained to be first responders in times of disasters.

9.2 COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR)

Council of Scientific and Industrial Research (CSIR) recently celebrated its 81st Foundation Day.

About CSIR

- CSIR is the largest research and development (R&D) organisation in India.
- It was established in September 1942 with its headquarters at New Delhi.
- CSIR is funded by the Ministry of Science and Technology and it operates as an autonomous body through the Societies Registration Act, 1860.
- Prime Minister of India acts as the ex-officio president/chairman of the organisation.
- Union Minister of Science and Technology is the ex-officio Vice President.
- The Director-General is the head of the governing body.
- The other ex-officio member is the finance secretary (expenditures).

9.3 INDIAN AIR FORCE DAY

The President of India, Smt Droupadi Murmu, graced the 90th anniversary celebrations of the Indian Air Force at Sukhna Lake in Chandigarh.

- Indian Air Force Day is celebrated on October 8 every year.

About Indian Air Force

- Also known as 'Bharatiya Vayu Sena', the IAF was officially established on October 8, 1932, by the British Empire.
- In 1945, King George VI bestowed the prefix "Royal" in recognition of the IAF's accomplishments.

- After India became a republic in 1950, this honorary title was abolished.
- The President of India holds the rank of Supreme Commander of the air force.
- The Chief of Air Staff, an air chief marshal is responsible for the operational command of the air force.
- IAF ranks as the fourth largest operational air force in the world.
- Motto of the Indian Air Force is 'Touch the Sky with Glory' and it was taken from eleventh chapter of the Bhagavad Gita.
- The air force employs about 170,000 personnel and over 1,400 aircraft.

9.4 9TH WORLD AYURVEDA CONGRESS

Goa will host 9th World Ayurveda Congress & Arogya Expo, a biggest event in traditional wellness system from December 8 to 11.

- It is being organised by World Ayurveda Foundation, an initiative of Vijnana Bharti.

Key Points

- The expo is expected to give a transformational push to ayurveda to bring it into global focus.
- World Ayurveda Congress (WAC) will connect Ayurveda practitioners, medicine manufacturers, enthusiasts and academicians.
- WAC is known to collect feedback, monitor progress and initiate missions accordingly.
- FOCAL THEME – AYURVEDA FOR ONE HEALTH

9.5 14TH EDITION OF WORLD SPICE CONGRESS (WSC)

The world's largest exclusive business platform for the spice sector, 14th World Spice Congress (WSC) is scheduled to be held in Navi Mumbai, Maharashtra during 16-18 February 2023.

- It will be organized by Spices Board India (Ministry of Commerce and Industry, Govt. of India) in association with various trade and export forums.

Key Points

- This biennial event organized by Spices Board India remains the premier platform that brings the global spice industry together.
- This time, Spices Board is organizing the World Spice Congress as a G20 event on the sidelines of India's G20 presidency.
  - This will put more focus on further strengthening India's trade ties with the G20 countries.
- The theme chosen is ('Vision 2030: SPICES) 'Sustainability –Productivity – Innovation – Collaboration- Excellence and Safety.

9.6 DR DILIP MAHALANABIS

Dr Dilip Mahalanabis, who pioneered Oral Rehydration Solution (ORS) treatment as a simple, effective remedy for dehydration has passed away.

About Dr Mahalanabis

- Dr Mahalanabis was working in overflowing refugee camps during the 1971 Bangladesh Liberation war when he came up with ORS.
- The Lancet has called ORS as "the most important medical discovery of the 20th century".
- Born on 12th November, 1934 in West Bengal, Dr Mahalanabis studied in Kolkata and London.
- He joined the Johns Hopkins University International Centre for Medical Research and Training in Kolkata in the 1960s.
  - This is where he carried out research in oral rehydration therapy.
- From 1975 to 1979, Dr Mahalanabis worked in cholera control for WHO in Afghanistan, Egypt and Yemen.
- During the 1980s, he worked as a WHO consultant on research on the management of bacterial diseases.
- In the mid-1980s and early 1990s, he was a medical officer in the Diarrheal Disease Control Programme of the WHO.
- In 2002, Dr Dilip Mahalanabis along with Dr Nathaniel F Pierce was awarded the Pollin Prize by Columbia University (considered the equivalent of Nobel in peadiatrics).
- In 2006, he was awarded the Prince Mahidol Prize, for his role in the development and application of oral rehydration therapy.
- While initially, the medical fraternity was sceptical, the WHO eventually adopted ORS as the standard method for treating cholera and other diarrhoeal diseases.
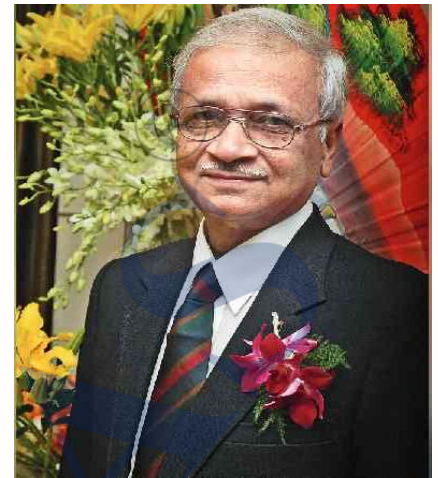
About ORS

- ORS, a combination of water, glucose, and salts, is a simple and cost-effective method of preventing dehydration.
- It is an alternative to intravenous rehydration therapy for preventing and treating dehydration from diarrhea when intravenous therapy is not available or feasible.
- Oral rehydration therapy is calculated by the World Health Organization (WHO) to have saved the lives of over 60 million persons.