



Monthly

Current Affairs

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1.

SCIENCE & TECHNOLOGY

▶ 1.1 JAMES WEBB SPACE TELESCOPE (JWST)

Why in news?

James Webb Space Telescope (JWST) delivered the deepest infrared image of universe.

What is JWST?

1. An **Infrared observatory** that will be much more powerful than the presently deployed Hubble space telescope.
2. It will observe in **near-infrared light** rather than light in the visible part of the spectrum (unlike Hubble).
3. It will have a much greater capacity to see obscure stars and galaxies. Viewing power is almost 100 times greater than all other major telescopes on and off the planet.
4. It is an international collaboration **between NASA, European Space Agency, and Canadian Space Agency**.
5. It is placed in Sun-Earth **Lagrange Point 2 (L2)**.
6. It is being considered as successor of Hubble Space Telescope (HST).

✎ **Components of JWST as compared to Hubble space telescope:**

1. It is nearly double the size of the Hubble Telescope (13m long), which is roughly half the Hubble's weight (6,500kg). Its large sun shield stand measures 22m by 12m, almost the same dimension as a tennis court.
2. James Telescope's gold-coated mirrors have a total diameter of 605cm, more than twice the diameter of Hubble (240cm). In short, JWST will roughly have a fifteen times broader view than the Hubble Space Telescope.
3. Hubble captures images from the range of **visible, ultraviolet and near-infrared** spectra. On the other hand, the James Webb Space Telescope will detect objects in the range of **long-wavelength normal red light and mid-infrared spectrum**. This will allow the detection of high-redshift celestial bodies that are too faint, distant, and old.
4. The optical telescope components of the primary mirror have eighteen six-sided mirror segments, which are made of gold-coated beryllium. This grants the JWST a light-gathering area about 5.5 times as big as Hubble's area.
5. The ideal working temperature of the Webb telescope is **below -223 °C**. By maintaining such a low temperature, it will be able to detect faint signals in the infrared spectrum without the intrusion of warmer signals of objects.
6. A five-layered windshield guards it against the Sun's direct heat waves.

▶ 1.2 CRISPR-CAS 9

Why in news?

It's been ten years since microbiologist Emmanuelle Charpentier and biochemist Jennifer Doudna published the research that paved the way for CRISPR-Cas9 gene editing.

What is Clustered Regularly Interspaced Short Palindromic Repeats

(CRISPR)?



1. CRISPR is a genetic code or sequence found in bacteria. These are formed due to the activity of the previous bacteriophages that had infected them.
2. Bacteria use CRISPR sequence to remember each specific virus that attacks them. They do this by incorporating the virus' DNA into their own bacterial genome.
3. This method then gives the bacteria protection or immunity when a specific virus tries to attack again.
4. Cas 9 are the genes that are always located nearby.
5. Once activated, these genes make special enzymes that seem to have co-evolved with CRISPR. The significance of these Cas enzymes is their ability to act as "molecular scissors" that can cut into DNA.
6. CRISPR is a dynamic, versatile tool that allows us to target nearly any genomic location and potentially repair broken genes. It can remove, add or alter specific DNA sequences in the genome of higher organisms.
7. CRISPR are sections of DNA and are sections of genetic code containing short repetitions of base sequences followed by spacer DNA segments.
8. CAS-9 (CRISPR-associated protein 9) is an enzyme. It uses a synthetic guide RNA to introduce a double strand break at a specific location within a strand of DNA. It is a system used by bacterial cells to recognize and destroy viral DNA as a form of adaptive immunity.
9. These are the 3 key elements to CRISPR-Cas9 work:
 - a) **Guide RNA:**
A piece of RNA that locates the targeted gene. This is engineered in a lab.
 - b) **CRISPR-**
Associated protein 9 (Cas9): The "scissors" that snip the undesired DNA out.
 - c) **DNA:**
The desired piece of DNA that is inserted after the break.

How does it work?

1. CRISPR scans the genome looking for the right location and then uses the Cas9 protein as molecular scissors to snip through the DNA.
2. Cas9 endonuclease – guide RNAs to direct it to a particular sequence to be edited. The genetic sequence of the RNA matches the target sequence of the DNA that has to be edited.
3. When Cas9 cuts the target sequence, the cell repairs the damage by replacing the original sequence with an altered version.
4. Unlike other gene-editing methods, it is cheap, quick, easy, safer and more accurate to use because it relies on RNA–DNA base pairing, rather than the engineering of proteins that bind particular DNA sequences.

Benefits of CRISPR:

1. **Predictive and Preventive diagnosis:**
This can help in faster and efficient diagnosis of rare genetic diseases. This will also help in determining epidemiology of genetic diseases to enable cost-effective genetic tests, enabling efficient diagnosis of heritable cancers, etc.
2. **Food security:**
It can have a major impact on addressing food insecurity around the world by producing more water efficient crops and high yielding varieties of plants and animals. As it can make farming more efficient and robust by creating resilient crops which are impervious to droughts and other environmental impacts.
3. **Pharmaceutical and Biotechnology:**
CRISPR can bring customized and individualized therapies to market more quickly than was previously dreamed.



4. The CRISPR generated knowledge base would also help in speeding up the traditional drug discovery process.
5. **To deal with climate change:**
It can play a role in limiting agricultural emissions, making crops more resilient to a more variable and extreme climate, and using crops and soil microbes to store and sequester more carbon.

⌘ Challenges:

1. **Balancing Risks and Uses:**

While we are witnessing several medical treatments which were previously only theoretically possible are now taking shape, this also cautions us about poor or non-standardized application of this technology and associated grievance redressal.

2. **Ethical Challenges:**

Engineering human embryos raises the prospect of designer babies, where embryos are altered for social rather than medical reasons. E.g. to increase height or intelligence.

3. **Broaden inequality:**

It will further widen the disparities between rich and poor since only the rich would be able to afford the editing of genes for perhaps better intelligence or a fairer complexion.

4. **Ecological impacts:**

It can cause non-reversible permanent damage to the environmental gene pool. This could propagate a set of genes with negative traits throughout a population which may lead to the disappearance of the whole targeted population with severe ecological consequences.

5. **Potential weapons:**

In the 2016, Worldwide Threat Assessment of the US Intelligence Community statement United States Director of National Intelligence, James R. Clapper, named genome editing as a potential weapon of mass destruction, stating that genome editing conducted by countries with regulatory or ethical standards “different from Western countries” probably increases the risk of the creation of harmful biological agents or products.

⌘ Scientific advancement using CRISPR-Cas9:

a) **Cancer:**

The first ever human trials of CRISPR in China focused on treating a range of cancers.

b) **HIV:**

Scientists from Kobe University in Japan used CRISPR to block HIV from spreading inside infected human cells.

c) **Parkinson:**

US-based biopharmaceutical company Seelos Therapeutics acquired the rights to SLS-004 gene editing therapy for Parkinson’s disease.

d) **Genetic manipulation:**

In 2015, Chinese scientists created super muscular beagles by disabling the myostatin gene, which directs normal muscle development.

⌘ India’s progress in CRISPR-Cas9 technology:

a) **Sickle Cell Anaemia:**

Scientists at Delhi’s institute of genomics and integrated biology are trying to find a solution to prevent genetically inherited sickle cell anaemia using the gene-editing tool.

b) **Agri-food:**

Using CRISPR CAS-9 researchers at National agri-food biotechnology edited the banana genome to improve its nutritional quality and pathogen resistance.

c) **Minimize side-effects:**



To overcome the problems of 'off-targeting', research is being conducted for deploying naturally occurring bacteria **Francisella novicida** instead of widely used streptococcus pyogenes Cas9.

Off-target effects can be defined as unintended cleavage and mutations at untargeted genomic sites showing a similar but not an identical sequence compared to the target site.

How is this technology being regulated worldwide?

1. The United States has banned federal aid from being used to support germline editing.
2. In the United Kingdom, one can apply to the regulatory body for a licence to edit the genomes of a human embryo, but only for research work. The embryos have to be destroyed within 14 days.
3. The recently held International Summit on Human Gene Editing announced that it would be irresponsible to proceed with any clinical use of germline editing until the relevant safety and efficiency issues were resolved.
4. In India, there is no law for forbidding research laboratories and private companies from using the technology to experiment on embryos. However, the Drug Controller General of India is trying to use interpretations of existing laws on drugs to clamp down on improper use.
5. The guidelines listed by the Indian Council of Medical Research state that germline editing is forbidden.

Way forward

1. Altruistic Science:

Research must be designed to increase human health and wellbeing. Early stage and uncertain application should be avoided to minimize the risk. The benefits & burdens of the research must be broadly and equitably accessible.

2. Last Resort to treatment:

All clinical trials proceeding in human germline editing should be permitted only when there is no reasonable alternative for disease prevention. Germline editing is the process by which the genome of an individual is edited in such a way that the change is heritable.

3. Consensus-based application:

Bioethicists & researchers believe that human genome editing for reproductive purposes should not be attempted until safe and effective research confirms the same and a social consensus is reached.

4. **The Drugs and Cosmetics Act, 1940** provides that all clinical trials in India should follow the guidelines prescribed in the **Belmont report** based on the basic ethical principle of respect for person, beneficence, and justice.

1.3 SPACE TOURISM

Why in news?

1. ISRO is in the stage of developing an ecosystem for space tourism.
2. It is to be done through demonstration of human space flight capability to Low Earth Orbit (LEO).

What is space tourism?

1. Space tourism is a part of space travel that permits normal people to travel to space for recreational, leisure or business purposes.
2. Space Tourism aims to make space more accessible to those people who are not astronauts and want to travel to space for non-scientific reasons.



3. Three private companies – Blue Origin, Virgin Galactic and Elon Musk’s SpaceX – are some of the companies that have entered space tourism. The progress of these companies will decide whether space travel will be accessible to all like air travel.
4. It’s divided into different types, including orbital, suborbital, and lunar (moon) tourism.

	Sub orbital tourism	Orbital tourism
Altitude	About 100 kilometres.	Over 400 kilometres.
Duration in space	Gives passengers a few minutes in space	Spend days or even more than a week in space.
Velocity	a) Requires much lower speeds (than orbital) and doesn't have the power to achieve orbit. b) Instead, it will fly up to a certain height that depends on its speed, and then come back down once its engines are shut off.	Spacecraft must achieve orbital velocity i.e. the speed that an object must maintain to remain in orbit around a planet.

Significance:

1. **Huge Market:**

There is an estimated market of 2.4 million people for such flights.

2. **Base for Testing:**

It can provide a base for testing supersonic travel between different destinations on earth, significantly compressing travel time. Besides, it heralds the entry of the private sector into this arena.

3. **Growth:**

From \$350 million in 2019, the industry is forecasted to grow to more than \$1 trillion by 2040.

▶ 1.4 DRIVERS OF SPACE TOURISM

1. **Emerging start-ups in space tourism:**

Over the past few years, numerous players have entered the sub-orbital transportation and space tourism market thereby helping in cost and technology benefits.

2. **Targeted Efforts:**

With national space agencies backing private space players, private companies developing their reusable launch vehicle system, it is expected that the industry will have significant growth in this aspect.

3. **Declining cost of space tourism**

With more advanced technology, it is expected that cost of space travel will fall within the range from \$30,000 to \$50,000 from the present range of \$200,000 to \$500,000.

4. **Development of space accommodations**

In 2019, NASA announced plans to allow private citizens to fly to the ISS with stay for short visits. Private entities are also developing hotels in space for tourists' stay.

Concerns related to space tourism:

1. **Lack of international rules on governance:**

New rules may need to be added for certification of commercial products, services, personnel and facilities, which were never considered in previous space projects.

2. **Human health hazards:**





Passengers would be in a potentially severe environment under abnormal conditions. Even during normal operations, they will experience intense accelerations and the absence of gravity.

3. **Environment damage:**

Researchers state that routine launches by the rapidly growing space tourism industry may undermine progress made by the Montreal Protocol in reversing ozone depletion.

4. **Passenger Liability:**

International treaties and conventions are aimed at regulating the signatory states and there is a lack of the provisions to handle the liability of private entities in space.

5. **Unclear definition of Space tourist:**

No international space law has defined space tourists. Existing space treaties such as Outer Space Treaty, Rescue Agreement etc. are only applicable to astronauts, envoys of mankind, or personnel of a spacecraft.

6. **High cost:**

Large leaps in cost metrics will be required to make space tourism a reality for the average person.

Way forward:

1. Need to formulate laws and legislations that will regulate issues of space tourism including the regulation of private players.
2. Peculiarities of sub-orbital flights do require the establishment of rules for the medical fitness to protect potential passengers from a medical standpoint.
3. There is an urgent need for environmental regulation to reduce the climatic damage from this fast-growing industry.
4. Enact appropriate national/global space laws and regulations which encourages and assists the private sector to grow technologically and commercially.
5. Space tourism will be a small subsector of the industry, but it will bolster the entire New Space industry.
6. Once space tourism does become mainstream, it will also positively impact many socioeconomic factors on Earth: creating jobs, educating citizens about space and fostering a new solar-based energy infrastructure.

1.5 TIHAN : FIRST AUTONOMOUS NAVIGATION FACILITY

Why in news?

Union Minister of State for Science & Technology inaugurated India's first Autonomous Navigation facility called **TIHAN** in IIT Hyderabad.

What is TIHAN?

1. **Technology Innovation Hub on Autonomous Navigation (TIHAN)** is a multidisciplinary initiative, that has been launched to make India a global player in 'smart mobility' technology for futuristic and next generation.
2. It will give a great boost to India's ambitious vision of **Atmanirbhar Bharat and Digital India**.
3. It is one of 25 technological innovation hubs under **National Mission On Interdisciplinary Cyber Physical Systems**.
4. It will be first one of kind of test bed facility in India to evaluate autonomous navigation of vehicles.
5. It will cater to a platform for research in autonomous navigation.

1.6 NATIONAL ANTI-DOPING ACT

Why in news?

Parliament has passed the National Anti- doping act in July 2022.



What is National Anti-Doping Act?

1. It is to create a statutory framework to tackling doping in sports and give greater powers to the country's doping watchdog.
2. The act will also protect the interest of sportspersons as it will provide enough space for them to put forth their versions especially when they face anti- doping charges.

Key features of the Act:

1. Prohibition of doping:

Act prohibits athletes, athlete support personnel and other persons from indulging in doping in sport. Anti-doping rule violation by an individual athlete or athlete support personnel may result in:

- a) Disqualification of results including forfeiture of medals, points, and prizes,
 - b) Ineligibility to participate in a competition or event for a prescribed period,
 - c) Financial sanctions,
 - d) Consequences for team sports which will be determined by the National Anti-Doping Disciplinary Panel after a hearing.
- #### 2. National Anti-Doping Agency (NADA):
- a) The Act provides statutory framework for the functioning of the National Anti-Doping Agency (NADA), empowering it to conduct raids and also strengthening measures to tackle drug abuse.
 - b) Its functions include Planning, implementing, and monitoring anti-doping activities, investigating anti-doping rule violations, Promoting anti-doping research.
 - c) It will be headed by a Director General appointed by the central government.
 - d) The earlier NADA established as a society under Societies Registration Act, will be dissolved and reconstituted.
- #### 3. National Board for Anti-Doping :
- It will make recommendations to the government on anti-doping regulation and compliance with international commitments on anti-doping.
- a) It will oversee the activities of the Agency and issue directions to it.
 - b) Board will constitute a National Anti-Doping Disciplinary Panel for determining consequences of anti-doping rule violations.
 - c) Board will also constitute a National Anti-Doping Appeal Panel which will consist of a chairperson (a retired High Court judge), a Vice-Chairperson (a legal expert), and 4 members (medical practitioners and retired eminent athletes).
- #### 4. Dope Testing Laboratories:
- a) The existing National Dope Testing Laboratory will be deemed to be the principal dope testing laboratory.
 - b) The central government may establish more National Dope Testing Laboratories.

What is National Dope Testing Laboratory (NDTL)?

1. NDTL was established with an aim to get permanently accredited by International Olympic Committee (IOC) and WADA to do the testing for the banned drugs in human sports.
2. NDTL has regained WADA accreditation which was suspended in 2019.
3. The restoration of accreditation is a boost to India's efforts to achieve the highest global standards of excellence in sport.

Concerns with the Act:

1. Independence of Director General of NADA:



As per WADA, such organisations must be independent to make operational decisions. Provisions of Act may not completely ensure that NADA is independent of the central government.

2. Autonomy of Disciplinary and Hearing Panels:

As grounds of removal have not been specified in the Act giving the Board the discretion to decide the grounds of removal through Regulations.

3. Prior experience of members of the Disciplinary and Hearing Panels:

WADA guidelines require that the members of the hearing panel must have anti-doping experience, this particular provision is absent in the Act.

4. Also, there is no requirement to give these panels opportunity of being heard. This may affect the independent functioning of these panels.

What is Doping?

1. Doping is any substance of natural or synthetic origin the use of which leads to improvement of results in sports.
2. Such substances can raise sharply for a short time the activity of nervous and endocrine systems and also increase muscular force.
3. Although they enhance performance, there are health risks involved in taking them and they're banned by sports' governing bodies.
4. Doping threatens to undermine the spirit of fairness that characterizes sports.

What are the substances used in doping?

Following are the Substances/Methods used or performed in doping and their respective provided advantages:

1. **Androgenic agents like anabolic steroids:**
Allow athletes to train harder and build more muscle.
2. **Stimulants:**
Make athletes more alert and can hide fatigue by increasing heart rate and blood flow.
3. **Diuretics and masking agents:**
To remove fluid from the body, which can hide other drug use or in sports like boxing and horse racing, can help competitors "make the weight".
4. **Narcotic analgesics and cannabinoids:**
To mask pain caused by injury or fatigue.
5. **Peptide hormones**
Substances like EPO (Erythropoietin) which increase bulk, strength and red blood cells giving athletes more energy and HGH (Human Growth Hormone) which builds muscle.
6. **Others:**
 - a) **Gene doping:** Body cells or genes are manipulated by use of substances that improve performance.
 - b) **Blood doping,** where blood is removed from the body and injected back in to boost oxygen levels.
 - c) Glucocorticoids mask serious injury because they're anti-inflammatories and affect the metabolism and regulate glycogen and blood pressure levels.
 - d) Things like beta blockers are banned in sports like archery and shooting because they keep the heart rate low and reduce tremble in the hands.

Monitoring of doping in Sports:

1. **World Anti-Doping Agency (WADA):**
 - a) It monitors doping in all kinds of competitive sports.



- b) WADA was established in 1999 as an international independent agency composed and funded equally by the sport movement and governments of the world.
 - c) WADA is recognized by the UNESCO International Convention against Doping in Sport (2005).
 - d) WADA periodically updates its list of Prohibited Substances and Methods. This includes steroids, anabolic agents, stimulants, and gene doping.
 - e) Use of prohibited substances is exempted if needed for therapeutic use, as specified.
 - f) WADA monitors doping in sport on the basis of **World Anti-Doping Code**.
 - i. The Code provides a framework for anti-doping policies, rules, and regulations for sport organizations and public authorities.
 - ii. Any sportsperson competing in national or international events can be asked to give his/her blood and/or urine samples at any point of time by anti-doping agency or sports events committee during the event.
 - iii. Testing can be conducted in-competition and out-of-competition.
 - g) WADA **doesn't directly conduct tests** rather it gives accreditation to laboratories.
2. **National Anti-Doping Agency (NADA)**, at national level there is an independent body under Union Ministry of Sports.

➤ Suggestions to prevent doping in sports in India:

Parliamentary Standing Committee on Education, Women, Children, Youth and Sports recommended following measures to improve and strengthen the anti-doping ecosystem in the country:

1. Boosting education, regular counselling and awareness-raising measures from grass root level and improving resulting awareness amongst elite athletes.
2. Starting more sports science and sports medicine courses in various medical colleges/Universities to address the lack of qualified personnel in these fields.
3. **“Dope-free” certification** by independent bodies should be made mandatory for supplements which are regularly consumed by athletes.
4. A distinction for minor athletes should be made while formulating the rules so that a protective mechanism is available to them.
5. Early detection mechanism and mandatory provision for having at least one certified sports medicine doctor at all sports camps which are organized for training of athletes.
6. Enforcing athletes' responsibility towards protection of the integrity of sports.

▶ 1.7 FIRST MALARIA VACCINE IN AFRICA

Why in news?

1. WHO announced the rollout of the world's first authorized malaria vaccine in three African countries.
2. The **global vaccine alliance (GAVI)**, announced \$160 million in international support for the rollout of the vaccine.
3. The rollout will first extend to countries **Ghana, Kenya, Malawi** and the gradually to other endemic countries.

About Malaria:

1. It is a life-threatening disease **caused by parasites** that are transmitted to people **through the bites of infected female Anopheles mosquitoes**.
2. It is preventable and curable.
3. According to **WHO's World Malaria Report (WMR) 2021**, there were an estimated 241 million malaria cases and 627,000 deaths worldwide due to Malaria in 2020.



India and Malaria:

1. In India, there are 83% of estimated cases and about 82% of all malaria deaths of total count of South East Asia Region (**WMR 2021**).
2. **National Framework For Malarial Elimination (2016-30)** is India's ambitious program to eliminate malaria in a phased manner.
3. India aims to achieve zero indigenous cases till 2027 and elimination by 2030.

GAVI- Global vaccine alliance:

GAVI, the Vaccine Alliance (previously the GAVI Alliance, and before that the Global Alliance for Vaccines and Immunization) is a public-private global health partnership with the goal of increasing access to immunization in poor countries.

1.8 PENTAQUARKS AND TETRAQUARKS

Why in news?

1. The **Large Hadron Collider Beauty experiment (LHCb)** has observed three never seen particles as announced by CERN.
2. LHCb is investigating the slight differences between matter and antimatter by studying a particle named '**beauty quark**'.
3. The three additions – a new kind of pentaquark and first ever pair of tetra quark will guide physicists better understand how quarks bind together into these composite particles.

What are quarks?

1. Elementary particles that usually combine into group of twos and threes to form hadrons such as protons and neutrons that make up atomic nuclei.
2. They can also combine into **four quark and five quark** particles called as **tetraquark** and **pentaquark** respectively.

What is the Large Hadron Collider?

1. The Large Hadron Collider (LHC) was constructed to figure out what the Higgs field is, how it works, etc.
2. It is the world's largest and most powerful particle accelerator.
3. It was constructed by the European Organization for Nuclear Research (CERN).
4. One of the chief objectives of this big machine was to find out more about the existence of the Higgs Boson particle.
5. It was constructed to do much more than discovering the Higgs Boson. The objective of the LHC was to help physicists test predictions of various theories of particle physics.

What is large hadron collider beauty experiment?

The LHCb (Large Hadron Collider beauty) experiment is one of eight particle physics detector experiments collecting data at the Large Hadron Collider at CERN.

1.9 LUX-ZEPLIN (LZ): DARK MATTER DETECTOR

Why in news?

A highly sensitive experiment named LUX-ZEPLIN (LZ) has been used to detect dark matter in the universe in the U.S.

What is dark matter?



1. Dark matter is made up of particles that do not have a charge.
2. These particles are “dark”, namely because **they do not emit light**, which is an electromagnetic phenomenon, and “matter” because they possess mass like normal matter and interact through gravity.
3. The **visible universe** we see is the result of various **interactions among the four Fundamental forces** acting upon the particles, as following
 - **Strong nuclear force**
 - **Weak nuclear force**
 - **Electromagnetic force**
 - **Gravitation**
4. Only 5% of the entire visible universe is made up of all matter and the rest of **95% is dark matter and dark energy**.

Importance of dark matter study:

1. It is significant to understand the evolution of the universe.
2. It will help to observe if universe is expanding or expands upto a certain point and then collapses or is flat.
3. It will explain the motion of stars in galaxies.

What is the LUX-ZEPLIN (LZ) detector?

1. It is designed (underground) to capture dark matter in the form of weakly interacting massive particles (WIMPs).
2. It consists of a huge titanium tank filled with extremely pure liquid xenon.
3. Centre of LZ is one of the purest places on Earth (free of radiation and dust).
4. Collaboration of scientists/institutions from U.S., U.K., Portugal, and Korea

▶ 1.10 BIOPLASTICS

Why in news?

A British Firm claimed that it has produced the world's first **bioplastic vinyl record**, which it hopes will reduce the need for highly toxic **Polyvinyl Chloride (PVC)**.

What are bioplastics?

1. Bioplastics are those which possess the characteristics of biodegradability and composability.
2. Bio-based plastics means they are developed from sugars and starches like sugarcane and corn and not from oils or gas.
3. They can be converted into natural substances like water, carbon dioxide, and compost by the action of micro-organisms in the environment.
4. As an alternative to plastic, the use of bioplastics is being promoted, it is already used in agriculture, textile industry, medicine, in the container, packaging market etc.

▶ 1.11 CRYPTOJACKING

Why in news?

Crypto-jacking attacks on computer systems have gone up by 30% to 66.7 million in the first half of 2022 compared to the first half of last year.

What is crypto-jacking?



1. A cyberattack where in a computer device is hijacked and controlled by the attacker.
2. Mostly its resources are used to illicitly mine cryptocurrencies.
3. In most cases, the malicious programme is installed when the user clicks on an unsafe link, or visits an infected website – and unknowingly provides access to their Internet-connected device.

Why is crypto-jacking done?

1. Coin mining is a legitimate, competitive process used to release new crypto coins into circulation or to verify new transactions.
2. First miner who successfully manages to update crypto ledger gets rewarded with crypto coins.

1.12 REPORT ON ACCELERATING ACCESS TO GENOMICS

Why in news?

WHO's Science Council (SC) released its first report on accelerating access to genomics for global health.

What is the major highlight of the report?

1. It stated that it is not justifiable ethically or scientifically for less-resourced countries to gain access to such technologies long after rich countries do.
2. The report largely focusses on four themes:
 - a) Advocacy to promote genomics.
 - b) Implementation of genomic methodologies.
 - c) Collaboration among entities engaged in genomics.
 - d) Attention to the ethical, legal, and social issues (ELSI) raised by genomics.

What is WHO's science Council?

It was established in 2021 by Director General of WHO to provide guidance on the science and research strategy of the organization.

What is Genomics?

1. Genomics is the study of a person's genes, and its interaction with each other and the environment.
2. Applications and uses of genomics:
 - a) Human genomics for medical purposes:
To prevent, diagnose, predict, manage, monitor, and treat genetic disorders.
 - b) Microbial genomics for medical purposes:
Like identification of infectious agents, vaccine design etc.
 - c) Agriculture and aquaculture genomics:
It involves identification of new traits and disease susceptibility.
 - d) Biological and medical research (drug development, discovery of genes influencing disease etc.)
 - e) Others like forensic science, assessment of ancestry etc.

1.13 DISEASES IN NEWS

African swine flu:

Why in news?

Bihar State government has imposed a 30-day ban on the transportation of pigs, pork and pork products and pig manure after cases of African swine fever emerged in the state.



What is African swine flu?

1. First reported in November-December, 2019 from the **areas of China bordering Arunachal Pradesh.**
2. It is a highly contagious and fatal animal disease that infects and leads to an acute form of hemorrhagic fever in domestic and wild pigs.
3. Other symptoms of the disease include high fever, depression, anorexia, loss of appetite, haemorrhages in the skin, vomiting and diarrhoea among others.
4. Mortality is 100 % and there is no cure of the disease yet.
5. Only way to stop the spread is by culling the animals.
6. It is not a threat to humans since it cannot be transmitted to humans from pigs.

1.14 KALA AZAR

Why in news?

A team of researchers from the **National Centre for Cell Science (NCCS), Pune** have found new biomolecules to fight drug resistance in Kala-azar (visceral leishmaniasis).

What is kala azar?

1. A **neglected tropical disease** affecting almost 100 countries including India.
2. It is caused by a **parasite called Leishmania.**
3. It is transmitted through **the bite of sand flies.**
4. In India, it is endemic in the state of Bihar, West Bengal, Jharkhand and Uttar Pradesh.
5. Malnutrition, Population, Weak immune system, Poor housing and sanitation are the reasons for the spread of the disease.

1.15 POP FAME

Why in news?

Recently, scientists from the US have developed a fuel names POP-FAME from bacteria.

It has more energy than even the rocket fuels have.

What is POP-FAME?

1. POP-FAME fuel name stands for **"Polycyclopropanated Fatty Acid Methyl Ester"**.
2. It is a new fuel molecule made up of seven sets of cyclopropane rings.
3. As per simulation data, POP-FAME fuel has energy density values more than 50 megajoules per litre, against 32 MJ for petrol and 35 MJ for RP-1, which is a rocket fuel based on kerosene.

1.16 MONKEYPOX TASK FORCE RECOMMENDS TO INCREASE UP RESEARCH INFRASTRUCTURE FOR DEVELOPING INDIGENOUS VACCINE

Why in News ?

Till 5th August 2022, almost 8 cases of the Monkeypox virus has been reported in India.

1. A task force of the experts formed by the central govt. has laid out plans to fund research in developing the infrastructure needed for preparing an Indian made vaccine.
2. **The World Health organization (WHO) has declared the outbreak of Monkey Pox as a public health emergency but few experts are of the view that immediately there is no need for mass vaccination.**

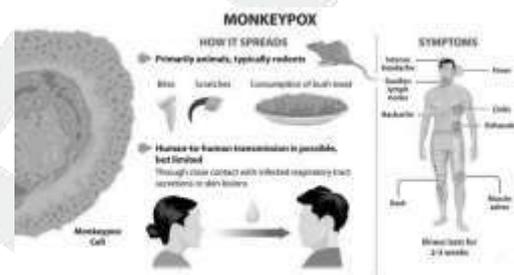
About Monkeypox Disease:



1. It's a **viral (caused by virus) zoonotic disease**.
2. **Zoonotic Diseases** are those which spreads from animals to humans. Eg: Rabbits, West Nile Virus etc.
3. Monkeypox **occurs primarily in tropical rainforest areas of Central and West Africa** and is occasionally spread to other regions of the world.
4. It has been found in **Squirrels, Gambian pouched rats, Dormice, and some species of Monkeys**.
5. This virus is a **member of the Orthopox virus genus in the family Poxviridae**.
6. The symptoms of it lasts from **2 to 4 weeks**. Severe cases can occur. In recent times, the **case fatality ratio (death ratio) has been around 3–6%**.
7. It is transmitted to humans through close contact with an **infected person or animal or with material contaminated with the virus**.

Issues in Developing Monkeypox Vaccine are:

1. A company of Denmark named **Bavarian Nordic** has developed a **smallpox vaccine** called **JYNNEOS**, that has been tested for safety in people and effectiveness against monkeypox in the laboratory, and has been approved by the United States Food and Drug Administration but it is **not yet approved by WHO for Monkeypox**.
2. In the case of **COVID 19**, the genome (it's a complete set of genes of an organism) of the virus was rapidly analysed from which the scientists understand the role played by the **spike protein** in infecting healthy lung cells and this served as the basis for vaccine development but this level of specific knowledge is not yet available in case of monkeypox.
3. The **old smallpox vaccines has some risks in it** and that can't be acceptable as per modern standards.
4. Experts said that the genomic sequence of the **Indian strain has a 99.85% match with the West African strain circulating globally**.





2.

POLITY AND GOVERNANCE

▶ 2.1 COOPERATIVE SOCIETIES

Why in news?

In July 2022, Govt of India celebrated 100th International Day of Cooperatives in New Delhi.

1. The celebrations were **organized** by the **Ministry of Cooperation and the National Cooperative Union of India (NCUI)**.
2. NCUI is the top most organisation which is **representing the entire cooperative movement** in India.
3. It was established in **1929** as **All India Cooperative Institutes Association** but was **reorganized in 1961**.
4. **Theme** of the event was **“Building a Self-Reliant (Aatamnirbhar) India and a Better World through Co-operatives”**.

✎ What are Cooperative Societies?

1. They are the **voluntary (made by choice) organisations of individuals having common needs** who come together for the achievement of some common interest.
2. **Aim** of any cooperative society can be to **provide support to its members**, with a special focus on the poorer sections of society, through the principle of mutual help (helping each other).
3. In a cooperative society, people can enter as per their wish and can leave it as per their wish, but they cannot transfer their share to anyone.
4. Almost **12%** of the **world's population is associated with some or the other cooperative society**.
5. Presently, there are more than **30 lakh cooperative societies** working in the world.
6. There are **many types of cooperative societies** working in India today and some of these are: **Consumers cooperative societies, Producers cooperative societies, Cooperative credit societies, Cooperative Farming Societies, Housing Cooperative societies, Marketing Cooperative Societies** etc.
7. Among the **300 largest cooperative societies of the world**, **3 societies of India** are there and these are: **1) Amul 2) IFFCO (Indian Farmers Fertilizer Cooperative Limited) 3) KRIBHCO (Krishak Bharati Cooperative Limited)**.

✎ What are the challenges faced by the cooperative societies in India?

1. **High interference by governments:** Govt is the major source of finance for many cooperative societies and also govt has the power to regulate the functioning of the cooperatives through various rules and regulations.
2. **Politicisation:** Many cooperative societies are dominated by locally powerful members of the society with having strong political connections. This results in internal politics and rivalries that defeats the objective of such societies.
3. **Regional imbalance in growth:** The cooperatives in northeastern parts of India and in areas like West Bengal, Bihar, Odisha etc are not well developed as the ones in Maharashtra and Gujarat.
4. **Very Limited area of operation:** In India, most of the cooperatives are having very few members and their area of work is limited to only 1 or 2 villages. As a result, their resources remains limited.



5. **Lacks skilled workforce:** Shortage of skilled workforce and inability of cooperative societies to attract efficient workers is one of the biggest challenge it is facing. As a result of this, Cooperative societies are also suffering from lack of professionalism.

What are the challenges faced by Cooperative banks?

1. **Dual regulation:** In India, cooperative banks are regulated by 2 Authorities: **a) state registrar of societies b) RBI**. This dual regulation has led to confusions and lack of accountability (fixing responsibility).
2. **Bad condition of balance sheet:** Many of the cooperative banks have higher Non Performing Assets (NPAs) than that of commercial banks. For Eg: NPAs of Co-operative banks in Kerala has crossed 38% whereas that of commercial banks is just 4% as of December 2021.
3. **Governance issue:** Lack of modern banking practices, corporate governance standards, political influence etc are another big issues in front of cooperative banks. For Eg: Recently, poor governance and high political influence has resulted in the failure of Punjab and Maharashtra Co-operative Bank (PMC).

What are the steps taken by Govt to strengthen the cooperative societies in India ?

1. **Ministry of Cooperation:** This ministry has been established by the Govt to focus separately on issues related to cooperative societies.
2. **Amended The Banking Regulation Act in 2020:** By this amendment, RBI got the powers to supersede(override) boards of the Cooperative banks and allows Cooperative banks to raise money through issuing shares in public.
3. **The National Agricultural Co-operative Marketing Federation (NAFED):** It was formed to help the Co-operatives societies in the marketing of their products and businesses.
4. **The National Co-operative Development Corporation (NCDC):** It was set up in 1963 to provide assistance to the schemes related to marketing, processing, storage related to cooperative societies.
5. **97th Constitutional Amendment Act of 2011:** This act amended Article 19(1)(c) to give protection to the cooperative societies and inserted Article 43 B and Part IX B related to cooperative societies. Part IXB of the Constitution is related to rules and regulations for running co-operative societies.

What can be the Way forward?

1. **Promote democratic values in cooperative societies:** It is needed to reduce the political influence and will make them more Inclusive and representative.
2. **Bring under RTI Act, 2005:** Bringing Cooperative societies under the Right to Information Act (RTI), 2005 will make them more transparent and responsible.
3. **Declaration of Assets:** Directors of the cooperative societies can be mandated to declare their assets every year.
4. **Creating awareness:** Awareness can be created among the members regarding their rights as well as the purpose of cooperative societies.
5. **Promoting Multipurpose societies:** Multipurpose societies can have a balanced and overall view about the needs of its members and can meet them accordingly. To do this, weaker and inefficient cooperative societies should be closed or merged with the strong and efficient societies.
6. **Infrastructure development:** Digitisation especially in governance, banking and businesses can ensure a transparent(open), accountable and efficient system.
7. **Skilled employees:** Proper training should be given to the employees of the cooperative societies.



2.2 RIGHT TO BE FORGOTTEN

Why in news?

Recently, Supreme Court(SC) ordered to remove the details of a couple from search engines and Internet.

1. Petitioner (who has filed the case) said in the court that her **name in the public domain causes embarrassment and disturbs her privacy.**
2. Petitioner had raised the issue of '**Right to be forgotten (RTBF)**' and '**Right of eraser**' under the **Right to Privacy.**
3. This order by the SC will increase the scope of Right to Privacy and RTBF.

About Right to be Forgotten(RTBF)

1. It's the **right to have publicly available personal information removed from the internet**, once the personal information that is available on the internet is no longer necessary.
2. RTBF has its origin in the '**Right to oblivion**' which is mentioned in the **French constitution.**
3. It is a right which is seen **necessary to provide for easier social integration of former offenders** (who had committed a crime). However, RTBF cannot be an absolute right and will always be subject to reasonable restrictions.

Right to be forgotten (RTF) in India:

1. In **India**, there is **no law** that specifically talks about RTBF. However, the **Personal Data Protection Bill (PDPB), 2019** contained provisions related to RTBF.
2. **Information Technology Rules, 2011** also **does not** have any provisions relating to the RTBF.

Supreme Court on Right to be Forgotten (RTBF):

1. In case of **K.S. Puttaswamy v. Union of India**, SC recognised RTBF as part of the right to life under **Article 21.**
2. SC has also said that the **RTBF is subject to certain restrictions** and this right could not be used if the material or information in question was required for the:
 - i) Exercise of right to freedom of expression and information by public.
 - ii) Fulfilment of legal responsibilities.
 - iii) Performing of a duty in the public interest or public health.
 - iv) Protection of information in public interest.
 - v) For purpose of scientific or historical study, or for statistical purposes.

Status of RTBF in other countries:

1. It has been recognised as a **statutory right**(given by law) in the **European Union(EU) under the General Data Protection Regulation (GDPR).**
2. It was recognized as a right for the **1st time** by **EU Directive on Data Protection in 1995.**
3. In **2015**, Russia made a law that **allows users to force a search engine** (like google) to remove links of personal information on grounds of irrelevancy, inaccuracy and violation of law.
4. In **USA**, there is wide support for RTBF in the public but **there is no law on it.**

What are the Issues in implementing Right to be Forgotten ?

1. **Scattered Data:** Data of an individual is spreaded across multiple platforms which makes it difficult to completely delete all the data as requested by a person.
2. **Implementation:** The success rate of governments in restricting and removing pornographic material has been low. So, success rate of implementing RTBF is debatable.



3. **Re-emergence:** RTBF cannot ensure complete removal of personal data as there is a probability of data being uploaded again.
4. **Freedom of speech and expression:** A highly broad RTBF will focus on Internet monitoring and will force web search tools or sites to remove specific material and it can restrict the Freedom of speech and expression of public.

➤ So, what can be the Way forward ?

1. **Balancing rights:** The Parliament and the Supreme Court should conduct a proper study of the RTBF and then come out with a method to have a balance between the right to privacy and the freedom of speech and expression.
2. **Data Protection:** The government should come out with a strong Data Protection Policy to prevent misuse and leakage of data.
3. **Destroy data:** Online search engines can change their principles and can destroy the information after a specific time frame.
4. **Public Interest:** If the information is useful for larger public interest, then the right to information of the public should prevail over the RTBF.

▶ 2.3 FOREIGN CONTRIBUTION REGULATION ACT (FCRA)

Why in News?

In July 2022, the Central Government notified(declared) the Foreign Contribution (Regulation) Amendment Rules, 2022 under Foreign Contribution Regulation Act, 2020.

➤ What is Foreign Contribution Regulation Act (FCRA) ?

1. Foreign contribution means the **donation, delivery or transfer of any article or currency by anyone sitting in any foreign country.**
2. To regulate the funds coming from foreign sources, an act on it was passed in 1976 for the 1st time but 1976 act was repealed in 2010 and a new FCRA was passed by Parliament in 2010.
3. **FCRA, 2010 was again amended in 2020.**
4. FCRA is implemented by the **Ministry of Home Affairs (MHA).**
5. The government orders under this act **can be challenged in the High Court.**

➤ Major Provisions of the FCRA,2010

1. It is **applicable across India on all associations, groups and NGOs and also on Indian citizens living outside India.**
2. Before 2020 amendment, it prohibits or restricts from accepting foreign funds by **candidates for elections, journalists, media broadcast companies, public servants, Judges, Government servants, members of legislatures and political parties etc.**
3. This act made **prior permission necessary** to receive funds from foreign sources. It also made **registration compulsory** in case of an organisation wants to receive funds from foreign sources.
4. A **separate FCRA account** should be maintained in the **State Bank of India, New Delhi branch** to receive funds from foreign sources.
5. No funds other than the foreign contributions can be received or deposited in it and it can't be transferred to any other person or NGOs from there.
6. **Validity of FCRA registration is 5 years** and NGOs are expected to apply for renewal within 6 months of the date of expiry of their registration.
7. Use of funds is limited to the purpose for which it was received with a maximum limit of **20%** (earlier it was 50%) **to meet administrative expenses.**
8. All such organisations should **compulsorily fill annual returns to the Income Tax department.**



What are the new additions in the Foreign Contribution (Regulation) Amendment Rules, 2022 ?

1. Now, the individuals can send up to ₹10 lakh without informing the government. If the amount exceeds ₹10 lakh, the individuals will have 3 months to inform the government.
2. The entities that can receive the foreign funds includes political parties, legislative members(MPs/MLAs), election candidates, government servants, judges, journalists and media houses- who were all restricted from receiving foreign contributions as per the earlier rules.
3. The time limit of informing the central government regarding application of obtaining 'registration' or 'prior permission' under the FCRA has been increased from 15 days to 45 days.
4. The list of offences under the new FCRA rules is increased from 7 to 12.

Why is it Important to have an FCRA ?

1. **To maintain Economic Growth and Development:** There have been allegations that some foreign-funded NGOs are willingly protesting against the developmental projects (mining, power projects etc.) so that it can hurt India's growth.
2. **To protect the Indian Society and Culture:** Foreign contributions are often used for socio-cultural (like religious conversions) activities which creates threat to Indian diversity and internal security. For E.g. Government restricted an organisation named **Compassion International** in 2016 from funding NGOs in India over allegations of religious conversion on him.
3. **Political Independence:** Global ideological organisations uses foreign contributions to promote their own political ideology. Some NGOs also misuse it for political purposes too.
4. **Sovereignty and Friendly-foreign Relations:** FCRA helps in avoiding foreign influence over government decision-making and its relations with other countries. For Eg: Few years ago some Foreign-funded NGOs were protesting against the **Kudankulam Nuclear Power Plant Project (KKNPP)** of India and Russia.
5. **To maintain Transparency and Accountability in NGOs:** Regulations under FCRA helps in making NGOs transparent(open) and accountable in their functioning.

Few Concerns over FCRA are:

In the last few years, due to financial irregularities or other reasons, many NGOs registrations have either been cancelled or not renewed. This includes many global NGOs leading to various concerns such as:

1. **Targeting of NGOs due to political or ideological differences** through misuse of FCRA as a tool.
2. Hurt NGOs Functioning due to **limitations on administrative expenses (20%)**.
3. **Violation of Right to Equality, Right to Privacy, Freedom of Association and independent functioning** through limitations on bank accounts, mandatory Aadhaar submission of every office-bearer, prohibitions on transfer etc. E.g: No transfer of funds to other NGOs limit collaboration among NGOs.
4. It's **against the democratic values of India** which has multiple interest groups and NGOs having a important role in creating awareness among the public.

So, what can be the Way Forward?

1. The **Supreme Court has accepted the constitutional validity of FCRA** as receiving of foreign donations cannot be an absolute right(without any restrictions) and parliament can regulate it.
2. Also, it is a **moral duty of NGOs to follow rules and regulations**. But these regulations should always be used in the larger public interest while protecting individual rights also.
3. To ensure this few things can be done:



- i) A **fully transparent process** with proper database on NGOs should be made.
- ii) **Use of technology** on every level.
- iii) **Reasonable opportunities should be provided** to individuals or NGOs before taking any decision on them.

2.4 MODEL TENANCY ACT, 2021

Why in News?

In July 2022, 4 States (Andhra Pradesh, Tamil Nadu, Uttar Pradesh and Assam) have revised their tenancy laws so that they can be in line with the Model Tenancy Act (MTA), 2021 of the Parliament.

What is Tenancy ?

It's a legal arrangement in which someone gets the right to use the property owned by someone else in exchange for paying **rent** to the owner.

About Model Tenancy Act (MTA), 2021

1. **Ministry of Housing and Urban Affairs (MoHUA)** is the ministry in-charge of this act.
2. As 'Housing' is a part of the **State List** under the **7th Schedule** of the constitution, so **this act is only a suggestive law** (not binding) for states to follow while regulating rental housing and agreements in their states.
3. **Objective** of the act is to **make all laws almost similar regarding the renting of property in all States and Union Territories (UTs) of India.**
4. In 2021, **Jammu and Kashmir** has become the first Union Territory to adopt the MTA.
5. This law replaces the existing tenancy law called **East Punjab Urban Rent Restriction Act, 1949.**
6. As per **2011 census**, nearly **1.1 crore houses were lying vacant in country** and making these houses available on rent will help in fulfilling the vision of '**Housing for All**' by 2022.

What are the Key highlights of MTA, 2021:

1. **Law Applicability:** It covers all the properties given on rent for residential, commercial or educational use, but not for industrial use. It also won't cover hotels, lodging houses etc.
2. **Tenancy agreement:** All properties (residential as well as commercial) shall be rented only after a written agreement on mutually agreed terms and it is compulsory to inform the rent authority within 2 months from date of tenancy agreement.
3. **Tenancy Period:** Tenant may request the landlord for renewal or extension(increase) of tenancy period. If tenant fails to vacate the property at the end of tenancy agreement then he will be liable to pay: a) Twice of the monthly rent for first 2 months b) 4 times of the monthly rent after 2 months period till he occupies that property.
4. **Security Deposit:** It has been fixed to a maximum of 2 months rent for residential properties and a minimum of 6 months rent for non-residential property.
5. **Digital platform:** This platform will be in local language of the State for submitting tenancy agreements and other documents.
6. **Changes in the property:** It can only be done with the prior consent of landlord and no structural change in property can be done by tenant without written consent of landlord.
7. **3-tier redressal system:** This Model Act establishes 3 tier dispute solving platforms which comprises of **Rent Authority, Rent Court and Rent Tribunal** to provide fast-track resolution of disputes and reduce burden of tenancy disputes on civil courts.
 - a) Disposal of complaint by Rent Court and Rent Tribunal shall be done within 60 days after filing.
 - b) Rent Authorities and Rent Courts will be appointed by District Collector with approval of state governments.



- c) States may establish Rent Tribunal in each district after consulting with the High Court of the state concerned.
 - d) No civil court will have any power over matters related to provisions under Model Tenancy Act.
8. **Vacating the property:** To evict (vacating the property) a tenant, landlord must apply to the Rent Authority asking for such eviction. Conditions for eviction of tenant include:
- a) refusal to pay rent which was agreed.
 - b) failure to pay rent for more than 2 months continuously.
 - c) occupying the part or whole of property without written consent.
 - d) misuse of property even after a written notice.

What are the issues with the Model Tenancy Act ?

1. **Contains very specific details too:** This act talks about even the minute details of a rental agreement like landlord should carry whitewashing of walls and door, tenants responsible for drain cleaning, geyser repairs etc. So, such small details restrict the changes that 2 parties may want to make in a contract based on their specific situations.
2. **No single institutional framework:** It does not establish a clear institutional framework (to deal with the matters related to the act) and made the entire process even more confusing. It is unclear why the MTA creates a new process and separate rent authority instead of amending the existing one.
3. **Government control:** Appointment and superintendence of rent authority, court, tribunal is left to the district administration instead of concerned urban local body.
4. **Digital Literacy:** Introduction of a mandatory “digital platform in the local language” may help in increasing registrations, but is not able to overcome the gaps coming because of digital literacy.
5. **Discriminations:** It fails to protect tenants from certain discriminations, which are commonly experienced by various groups including bachelors, unmarried couples, non-vegetarians, Dalits, religious minorities, transgender persons etc.
6. **Non-binding nature:** It is not binding on the states as “land and urban development” comes under state list. It is still the choice for states and UTs to repeal or amend their existing acts on tenancy.

Few other Initiatives taken for affordable housing by Govt of India are:

1. **Affordable Rental Housing Complexes (ARHCs):** Ministry of Housing and Urban Affairs (MoHUA) has initiated this. It is a subscheme under **Pradhan Mantri Awas Yojana (PMAY-Urban)**. It aims to fulfill the vision of 'AtmaNirbhar Bharat'.
2. **PMAY-U:** Implemented by **MoHUA**, it **addresses urban housing shortage** among Low Income Group and Middle income group categories including slum dwellers **by ensuring a pucca house to all eligible urban households by 2022.**

So, what can be the Way Forward?

1. **Little balanced approach:** Govt needs to come with a way to balance the social welfare of tenants and the economic interests of landlords.
2. **Promote Private participation:** Try to engage private sectors into affordable rental housing through models like “Build to Rent” and “Rent to Own”.
3. **Needs to work towards quality:** There is need for a separate mechanism beyond the Model Tenancy Act that ensures the provision of safe and good quality of rental units for tenants, while ensuring a fair economic return for homeowners.
4. **Keep eye on market:** Govt should keep a regular eye on market and issues like rising rental prices.



5. **Increase Cooperative federalism:** Land and provisions of housing being the state subjects, so there is need to promote cooperative federalism (where all states and centre works in cooperation with each other).

2.4 NATIONAL STANDARDS FOR CIVIL SERVICE TRAINING INSTITUTIONS (NSCSTI)

Why in News?

In July 2022, Ministry of Personnel, Public Grievances & Pensions has launched the National standards for civil service training institutions (NSCSTI).

About NSCSTI

1. They are developed by Capacity Building Commission (CBC).
2. Now, India became the 1st country in the world which has created standards for civil service training institutions at the national level.
3. India already has standards regarding the issues of higher education, healthcare and environment.
4. These standards will act as guidelines for Central Training Institutions (CTIs) and will also help civil servants in facing emerging challenges of 21st century.
5. Objective of NSCSTI is to increase the quality and capacity of Central Training Institutions (CTIs).
6. These standards will set goals for training institutions to work towards excellence.

About Capacity Building Commission (CBC)

1. It was formed in 2021.
2. The core purpose of the Commission is to provide ways for capacity building.
3. It was established as an independent body.
4. CBC has a total of 3 Members and also has an internal Secretariat. Secretariat is headed by an officer of the grade of Joint Secretary to Govt of India.
5. Functions of CBC are:
 - a) It helps in preparation of Annual Capacity Building Plans for Govt departments, ministries and agencies.
 - b) Prepares an Annual State of Civil Services Report.

What are the current issues associated with Central Training Institutions?

1. **Lack of training:** Too much focus is given on training of the higher civil servants like the officers of All India Services (IAS, IPS and IFS), Central and State Class I Services. So, the training needs of the middle and lower-level employees are neglected.
2. **Lack of coordination:** Contents of the training programmes are not always relevant and meaningful for the trainees. There is no relationship between the training contents and the actual placement of the trainees. Many training agencies do not have co-ordination between the training programmes.
3. **Way of Training:** In most cases, the training institutes follow traditional lecture method of training. Updated and modern methods of training are not easily adopted. Lecture method occupies almost 80% of the training way in most institutions.
4. **Poor evaluation:** Evaluation methods in many institutions has become outdated and unscientific.

Way forward

1. Focus should be laid on developing overall personality of the trainee.



2. Civil servants who are found to be **non-performing should be dismissed or can be given premature retirement.**
3. **Mid-career training** should be provided to civil servants so, that their skills can get updated.
4. A **monitoring mechanism** should be made for overseeing the **implementation of the National Training Policy.**

✎ **Some initiatives taken by the Govts to improve functioning of civil servants:**

1. **Mission Karmayogi:** It is a dedicated **Government Online Training (iGOT) Platform** which allows all government servants irrespective of their rank to undergo continuous training. It aims at building a civil service with the **right attitude, skills and knowledge which can work for the vision of 'New India'**.
2. **Aarambh:** Launched by Government of India, it is a **common foundation course for civil servants training.**
3. **National Training Policy:** It was adopted in 1996 and reviewed in 2012. It aims to **develop professional, impartial and efficient civil servants that are responsible to the needs of the citizens.**
4. **Lateral entry:** Direct recruitment of experts at the middle or senior levels of administration.

▶ **2.5 REGISTRATION OF PRESS AND PERIODICALS BILL**

Why in news?

Recently, the Government decided to introduce a bill in the Parliament with the aim of revising the Press and registration of book act 1867.

✎ **History of restrictions on Press in India:**

1. It was started with the restrictions under the **Press Act, 1799** which was imposed by Lord Wellesley (Governor-General) to control the press in India.
2. This act was **taken back in 1818** by Lord Hastings.
3. Acting governor-general John Adams passed the **Licensing Regulations (ordinance), 1823.**
4. Governor General Metcalfe abolished the ordinance to replace it with the **Press Act of 1835.**
5. The **Licensing Act of 1857** brought newspapers, printed matters and all books under the purview of the law.
6. The current **Press and Registration of Books (PRB) Act 1867** was also aimed at restricting the press because the British Government thought that the press was having a big in the "revolt of 1857".

✎ **About Press and Registration of Book Act, 1867**

1. This act helps the governments in controlling the press and regulating the book publishing.
2. As per the act, the **printer of every newspaper had to deliver 2 copies** of such newspaper free of cost to the government.
3. Under the act, the **Central Government may appoint a Registrar of newspapers for India.**
4. The Press Registrar shall maintain a register of newspapers in the prescribed format.
5. **Every book or paper shall have the name of the printer and the place of printing, name of the publisher and the place of publication on it.**

✎ **Salient features of the Draft Bill:**

1. **Control on Digital Media :** The objective is to bring digital media under the scanner of the Ministry of Information and Broadcasting.
2. **Registration:** Once the Bill is passed the Digital News media Publications will have to register with the Press Registrar General within 90 days.



3. **Power of the agencies:** The government agencies will have the power to act against digital publications for violations and can suspend or cancel their registrations and can impose penalties.
4. **Simple system:** It lays down a "Simple System" for registration of E-papers and aims to remove certain existing provisions regarding the registration of books.
5. **Rule-making Authority:** The Bill enables the central government and the state governments to make appropriate rules/regulations to regulate the criteria for issuing government advertisements in newspapers.
6. **Appellate Board:** There shall be an Appellate Board (appeals can be made here against the govt decisions) to be called the **Press and Registration Appellate Board** consisting of the Chairman, Press Council of India and 1 other member to be nominated by the Press Council of India.

🔗 What are the issues with the Bill ?

1. The provisions of the bill says that **rules of registration of "news on Digital Media" will be prescribed later so this has created confusions.**
2. It **prohibits people from publishing if they have been convicted under the Unlawful Activities (Prevention) Act, 1967.**
3. There is a **lack of autonomy** for the appointed Press General.
4. Requiring the **mandatory registration of all news** before putting on digital mediums **restricts the freedom of publication.**

Way Forward

The need is to balance the constitutional values like the **freedom of speech and expression and also protecting the collective well-being of people** from issues such disturbance of law and order, hate speech etc

▶ 2.6 INCREASING TENURE OF HOUSE COMMITTEES

Why in News?

Recently, In a 1st ever study of the Rajya Sabha (RS) Secretariat, a panel has submitted its recommendations to the RS Chairman.

🔗 What are Parliamentary Committees (PCs) ?

1. **Ministers and other Members of Parliament can not do their entire parliamentary work by themselves** due to lack of time and expertise so, they require PCs which can simplify their work.
2. PC is a committee **which is elected by the House or nominated by the Speaker/ Chairman** and which works under their direction and control.
3. PCs got their authority from **Article 105 and Article 118** of the constitution.
4. **Parliament is not bound by the recommendations of the PCs.**

🔗 There are 2 types of PCs:

1. **Standing Committees:** These are permanent committees which are formed by the parliament each year. Few of these are: Financial Committees, Departmental Related Standing Committees etc
2. **Ad hoc Committees:** These are temporary committees which are formed for a specific purpose and once the purpose is fulfilled, they ceases to exist.



Key recommendations of the panel are:

1. **Increase in tenure of Parliamentary Standing Committees (PSCs)** from 1 year to 2 years to ensure stability and continuity in its working.
2. **'Committee Hour'** can be introduced in Parliament to discuss major reports of the committees.
3. **Merging existing committees on Industry and Commerce** into 1 and setting up a **new committee on tourism and culture**.
4. To work for organising **virtual meetings** (online meetings) of Departmental related Standing Committees (DRSCs).
5. **Fill up all the vacancies in the RS Secretariat** as soon as possible.

About RS secretariat:

1. It was set up under the provisions of the **Article 98** of the constitution, which provides for a separate secretarial staff for each House of Parliament.
2. It **functions under the guidance and control of the RS Chairman**.
3. Main functions of RS secretariat are:
 - a) providing secretarial assistance and support to RS.
 - b) Helps the Parliamentary Committees.
 - c) publishing records of day-to-day proceedings of RS etc.

2.7 ELECTION OF THE PRESIDENT OF INDIA

Why in News ?

In July 2022, Smt. Draupadi Murmu has been Elected as the 15th President of India.

Constitutional provisions regarding President:

1. *Part 5 of the Constitution deals with 'The Union'*. In this, **chapter I (The Executive)** talks about the **qualification, election and impeachment(removal) process of the President of India**.
2. The **President of India is the head of state of India**.
3. The President is the **nominal head of the Executive and is also a part of Parliament**. He is the *supreme commander-in-chief of the Indian armed forces*.

Some Articles in the Constitution related to the President of India are:

1. **Article 54:** election of president
2. **Article 55:** manner of the election of President
3. **Article 56:** term of office of President
4. **Article 57:** eligibility for re-election
5. **Article 58:** qualifications for election as President

How is the President of India Elected?

1. The Indian president is elected through the **system of proportional representation** (an electoral system in which parties gain seats in proportion to the number of votes cast for them) **by means of single transferable vote. Voting is done through secret ballot**.
2. The elections are conducted by the **Election Commission (EC) of India**.
3. People who participates in the election of president are:
 - All the *elected members* of the **rajya sabha and lok sabha** (MPs).
 - *elected members* of the legislative assemblies of states and union territories.



4. Anti-defection law is not applicable in the presidential election. So, electors are not bound to vote as per their party directions.

Procedure of the Presidential Election:

1. 1st stage is the **Nomination stage**, in which the candidate files the nomination along with a signed list of **50 proposers and 50 seconders**.
2. The rule for securing 50 proposers and 50 seconders **was implemented when the Election Commission noticed in 1974**, that several candidates, many without even a single chance of winning, are filing their nominations to contest the Elections.
3. These proposers and seconders can be anyone from the total members of the **Electoral college** (who have the voting right in the presidential election) .
4. **1 elector cannot propose the nomination of more than 1 candidate.**

Value of each vote and how is it calculated?

1. The value of **vote of an MP is not equal to that of an MLA.**
2. The fixed value of vote of an **MP of the Rajya Sabha and the Lok Sabha is 708.**
3. while, the vote value of each **MLA differs from State to State based on some factors like its Population, the number of members in its legislative Assembly.**
4. The **value of each MLAs vote is calculated by dividing the population of the State by the number of MLAs in its legislative Assembly, and the quotient achieved is further divided by 1000.**
5. **Uttar Pradesh has the highest vote value for each of its MLAs which is at 208.**
6. The value of 1 **MLAs vote in Maharashtra is 175**, while that in **Arunachal Pradesh is just 8.**

Requirements to secure a victory in Presidential election:

1. A candidate does not secure victory based on a simple majority (by getting more votes than the other candidate) but through a **system of specific quota of votes.**
2. Unlike Elections to the Lok Sabha and State Legislatures, where electors vote for a single party candidate but in case of presidential elections the voters of the electoral college write the names of candidates on the **ballot paper in the order of preference.**
3. While counting, the EC totals up all the valid votes cast by the electoral college through paper ballots and to win, the candidate **must secure 50% of the total valid votes cast + 1 more vote.**

2.8 DISTRICT LEGAL SERVICES AUTHORITIES (DLSAS)

Why in News?

In July 2022, PM addressed the starting session of the 1st District Legal Services Authorities (DLSA) meet.

Note: Article 39A of the Indian constitution talks regarding free legal aid to the poor and weaker sections of the society and to ensure justice for all.

Legal services authorities have been set up at 3 levels by the Govt. of India under the Legal Services Authorities Act,1987 and these are:

1. At national level, its **National Legal Service Authority (NALSA)**: Its to provide **free legal services to the weaker sections of the society** and to **organize Lok Adalat's** (it works to solve cases through compromises if both the parties agree for it). **Chief Justice of India (CJI) is the Chief of NALSA.**



- At state level, its **State Legal Service Authority (SLSA)** which is headed by the **Chief Justice of High Court of the state concerned**. It has been formed to implement the plans and policies of NALSA at the state level.
- At district Level, its **District Legal Service Authority (DLSA)** which is headed by the **District Judge of the District concerned**. Its work is to implement Legal services Programmes in the Districts. Presently, there are **676 DLSAs in India**.

Who are Eligible for the Benefits under the Legal Services Authorities Act, 1987 ?

- Schedule Castes (SCs) and Schedule Tribes (STs)
- Victim of trafficking and Begging.
- Women and Children.
- Persons with disabilities.
- Victims of Mass Disaster / Ethnic Violence / Caste Atrocity / Flood / Earthquake or Industrial disaster
- Industrial Workmen.
- In Custody / Protective Home / Juvenile Home / Psychiatric Hospital / Psychiatric Nursing Home.
- Persons having annual income less than **Rs. 3 Lacs**
- Senior Citizens having annual income less than **Rs. 4 Lacs**
- Transgenders with annual income less than **Rs. 4 Lacs**
- Acid Attack Victim
- Person's infected and affected with HIV AIDS

In 2022, Govt of India has combined all the justice programmes under a new scheme named **DISHA (Designing Innovative Solutions for Holistic Access to Justice)**.



2.9 PLACES OF WORSHIP ACT, 1991

Why in News?

Recently, Supreme Court (SC) has refused a petition which was filed by the Jain community under Article 32 of Constitution to enforce Places of Worship (Special Provisions) Act 1991 against conversion of its religious places by another community.



Note: Article 32 of the Indian Constitution talks regarding “Right to Constitutional Remedies”. It means that a person can go directly to the supreme court in case of violation of his fundamental rights.

✎ About Places of Worship (Special Provisions) Act 1991:

1. This act **prohibits conversion of a place of worship of any religious community into a place of worship of another religious community.**
2. It also says that the religious character of any place of worship will remain same as it was on **15 August, 1947.**
3. Any legal case related to conversion of religious character of any place of worship **existing on August 15, 1947**, pending before any court **shall be removed from the list of cases** and no fresh case can be filed on this issue.

✎ Significance of the act:

1. Through it, the parliament has tried to **enforce the constitutional commitment of equality of all religions and secularism.**
2. It helps in **promoting the peace and harmony** in the society.

▶ 2.10 TELE-LAW SERVICE TO BE MADE FREE OF COST FOR CITIZENS BY THE END OF 2022

Why in News?

Recently, **an agreement has been signed between the Department of Justice and National Legal Services Authority (NALSA) on delivery of Tele-Law Service.**

✎ What is Tele Law Service ?

1. It means *the use of communications and information technology for the delivery of legal information and advice.*
2. Tele-Law Initiative was **launched by Department of Justice (Ministry of Law & Justice) in 2017.**
3. This initiative **will help in providing free legal aid to poorer and vulnerable groups of the society** by connecting them with the panel lawyers through the tele/video-conferencing infrastructure available at **Common Service Centres (CSCs) across 1 lakh gram panchayats.**

✎ About the Agreement:

1. **NALSA will provide a team of 700 lawyers in each district** of the country exclusively for Tele-Law program.
2. These lawyers **will also assist in strengthening the mechanism for dispute avoidance and dispute resolution** at the pre-litigation stage (before filing the case in the court).

▶ 2.11 THE FAMILY COURTS (AMENDMENT) ACT, 2022

Why in News?

In July 2022, this act was passed by Parliament to give statutory status (made under a law) to already established family courts in Himachal Pradesh and Nagaland.

✎ What is Family Courts Act, 1984 ?

1. This act **provided for the establishment of family courts by states to deal with the disputes related to family and marriage.**



2. **The state governments with the approval of the High Court** can appoint 1 or more persons to be the **judge or judges of a family court**.
3. The governments of Himachal Pradesh and Nagaland have set up family courts in their states under the Family Courts Act, 1984 only but till now the central government has not extended the application of this act to these states.

2.12 CENTRAL CONSUMER PROTECTION AUTHORITY (CCPA)

Why in News ?

Recently, CCPA has completed 2 years of its establishment.

About CCPA

1. CCPA was formed to promote, protect and enforce the rights of consumers under the Consumer Protection Act (CPA), 2019.
2. CPA 2019 replaced the CPA 1986.
3. Aim of CCPA was to **restrict unfair trade practices, false and misleading advertisements** that are bad for the interests of the public.
4. It is **empowered to**:
 - a) to conduct investigations into violation of consumer rights.
 - b) can order the producer to take back the unsafe goods and services from the market.
 - c) can order for the discontinuation of unfair trade practices and misleading advertisements.
 - d) Can impose penalties on manufacturers/publishers of misleading advertisements.
5. It **can initiate action by itself** to protect the rights of even those consumers who are unaware of their rights.
6. Appeal against any order of the CCPA may be filed before the **National Consumer Disputes Redressal Commission within a period of 30 days** from the date of getting such order.
7. Recently, Supreme Court(SC) has **directed the states to start process for filling vacancies in State Consumer Disputes Redressal Commission (SCDRC)** 6 months before vacancy actually arises as it is mentioned in the Consumer Protection Rules, 2020.
8. SCDRCs are the state level appellate bodies under the CPA 2019.

2.13 REGISTRATION OF ELECTORS

Why in News ?

In July 2022, Election Commission of India (ECI) has initiated few changes and these are:

1. Now, those above 17 years of age can apply in advance for getting registered in voters list.
2. Electoral roll(voting list) will be updated every 3 months and eligible youngsters can be registered in next quarter of year in which they have attained the age of 18 years.
3. Optional provision to link Aadhaar details with the form has been added.



3.

INTERNATIONAL RELATIONS

3.1 INDIA-ISRAEL-UNITED ARAB EMIRATES-USA (I2U2) SUMMIT

Why in News?

In July 2022, the 1st Leaders summit of I2U2 (India, Israel, United Arab Emirates and United States) was held virtually (online).

About I2U2 Group

- 1) It was 1st mentioned in October 2021, after the Abraham Accords between Israel and UAE.
- 2) Abraham Accords are the series of peace agreements between Israel and several Arab countries. In 2020, it was signed with the help of USA between the UAE, Bahrain and Israel.
- 3) The name "Abraham" refers to the common prophet (messenger of god) of the 3 Abrahamic religions named Judaism, Christianity and Islam.
- 4) I2U2 was established as an international group to discuss common areas of mutual interest and to strengthen economic partnerships in trade and investment.
- 5) I2U2 is also referred to as the 'West Asian QUAD'.
- 6) I2U2 lacks a military angle and focuses on the economy.
- 7) It has identified 6 areas of cooperation and these are: 1) Water 2) Energy 3) Transportation 4) Space 5) Health 6) Food security.

Key Highlights of the 1st I2U2 Summit:

1. UAE will invest almost \$2 billions to develop a series of food parks across India and it will use climate smart technologies to reduce food wastage and conserve fresh water.
2. Establishment of a hybrid renewable energy project in Gujarat consisting of 300 megawatts (MW) of wind and solar capacity. This will contribute to India's goal of achieving 500 GW of non-fossil energy capacity by 2030.
3. Leaders welcomed India's interest in joining US, UAE and Israel led Agriculture Innovation Mission for Climate initiative (AIM for Climate). It aims to help the agriculture industry in meeting the targets set out in the Paris Agreement to limit global warming to 1.5°C above the pre-industrial levels.

What is the significance of I2U2 for India ?

1. Cooperation in Indian Ocean: It will led to greater cooperation across western Indian ocean which lies between India, Suez Canal (Egypt) and South Africa. Almost 12% of world trade passes through the Suez Canal that links the Indian Ocean to the Mediterranean sea through the Red Sea.
2. Access to market: It will help in increasing trade between these 4 countries. It will open more doors for India to enter into the markets of West Asia and can lead to more job creation in India.
3. Will improve overall relations with the Middle East Countries: It will help India to deepen its ties with the Middle East. India has a large diaspora (people of Indian origin) presence in this area.
4. Will strengthen global position: After QUAD, India's inclusion in I2U2 will strengthen its global position.
5. Security: It can help in minimising the threats like piracy, illegal smuggling of drugs and weapons and terrorism.



What are the issues associated with I2U2 ?

1. **Lack of clarity:** Goals of I2U2 are not clear as many scholars see I2U2 as an organisation created to **counter Iran**, which can further disrupt relations between India and Iran.
2. **Lack of similarity among members:** The member nations have a **lot of power differences** as the USA and Israel are militarily more stronger as compared to India and UAE.
3. **Cooperation:** Countries in the I2U2 group have **different views on how to deal with China and Russia** and that may affect the future of the group. For Eg: India maintains absence from voting on Russia- Ukraine war.
4. **Internal conflicts in west Asia:** The internal conflicts in the Arab world are not easy to understand. It will be difficult for India to choose between the sides.

What can be the Way Forward ?

1. **Cooperation among the 4 countries** is necessary as there are difficulties in managing the complex situations of the West Asian region.
2. Cooperation can be expanded in new areas in the coming future **by adding more countries in it.**
3. Serious efforts to **strengthen infrastructure, public health, education can help in development of west Asian region.**
4. I2U2 should **aim to handle issues like energy, food security and economic growth** in the west asia as well as south asia along with the **step towards maintaining peace in the region.**

3.2 CHINA PAKISTAN ECONOMIC CORRIDOR (CPEC)

Why in News?

Recently, China and Pakistan have decided to invite interested countries to join the CPEC project. Both are also planning to expand CPEC project to Afghanistan.

About CPEC Project:

1. It's a 3,000 km long route of infrastructure projects connecting Pakistan's Gwadar port in Balochistan province to China's North-Western Xinjiang region.
2. CPEC is the part of China's 'Belt and Road Initiative' (BRI).
3. **India has repeatedly registered its protests over the CPEC.**

About BRI (Belt and Road Initiative):

1. It is a **transcontinental (passes through many continents) policy and investment program which aims for infrastructure development** and increase in the economic connection of the countries along the route of the historic **Silk Route**.
2. **Silk route was an ancient land route that used to connect Europe with the inner parts of Asia like China, India etc. Silk was the most traded commodity** along this route that's why got the name Silk Route.
3. It was **launched in 2013 by China** and **until 2016**, was known as **OBOR (One Belt One Road)**.
4. According to the Belt and Road Portal, currently **71 countries are taking part in this Initiative**, which together represents more than 1/3 of the world's GDP and almost 2/3 of the world's population.
5. BRI includes **2 components: 1) The Silk Road Economic Belt (its land based route) 2) 21st Century Maritime Silk Road (its water based route).**



What are the India's objections over the CPEC ?

1. **Violating India's Sovereignty and Territorial Integrity:** CPEC passes through the parts of the Union Territories of Jammu & Kashmir and Ladakh which are under illegal occupation of Pakistan.
2. **Encircling India:** Many experts believes that the aim of China and Pakistan through the CPEC is to encircle India.
3. **Lack of transparency:** There are also the fears that the inability to repay loans will provide the way for Chinese interference in the internal affairs of defaulting countries as it has done in Sri Lanka.
4. **Possible security threats:** Those parts of the roads built within the project can work as a safe corridor for the Terrorists.

What is India's overall approach to the China's BRI ?

1. **Active cooperation with other international partners** to develop an alternative to BRI. For Eg: Through Asia-Africa Growth Corridor (AAGC), India and Japan is offering rules based alternative to the BRI.
2. India is **cooperating with the US, Japan and Australia** through the **Quadrilateral Security Dialogue (Quad)** to counter China's rise in the region.
3. India is **increasing the regional cooperation** with countries such as the **Bangladesh, Bhutan, Nepal** etc and promoting its 'Neighbourhood First' Policy.

Why India's stand on BRI projects matters to China?

1. India as an **immediate neighbour** and an important player in the region remains very relevant to Chinese neighbourhood policy.
2. To **make BRI more popular**, China needs India with him on this project.
3. There are **5 priority areas of the BRI** namely: 1) Policy coordination 2) Increasing connectivity 3) Unrestricted trade 4) Financial connection 5) People-to-people connection and **all these can be better achieved at various levels with the Indian cooperation only.**
4. **Indian market is attracting China more than ever.** So, involving India in the BRI can give him more access to the Indian market.

Conclusion

1. India is of the view that **connectivity projects must be based on international laws.**
2. These projects **must follow the principles of transparency(openness) and financial responsibility** and must be done in a manner that **respects sovereignty, equality and territorial integrity of other nations.**

3.3 FORMER JAPANESE PM SHINZO ABE WAS SHOT DEAD

Shinzo Abe was the **Japan's longest-serving PM** who has contributed in developing Japan economically and has done few reforms too.

Note: India finds a special mention in his book **Utsukushii Kuni E (towards a beautiful country).**

Shinzo Abe's contributions to India-Japan relationship:

1. He has **made efforts in finalising special strategic and global Partnership** between India and Japan for peace and security in the Asia-Pacific region.
2. During Abe's tenure, Japan has **signed major projects with India including the Mumbai-Ahmedabad High-speed rail corridor.**



3. He supported India's entry into 4 international export control organisations named: 1) Nuclear Suppliers Group (NSG) 2) The Australian Group (AG) 3) Missile Technology Control Regime (MTCR) 4) Wassenaar Arrangement (WA)
4. For his contributions towards India-Japan relations, Indian government gave him Padma Vibhushan award in 2021.

▶ 3.3 1 COUNTRY AND 2 SYSTEMS

Why in News?

In July 2022, China celebrated the 25th anniversary of the Hong Kong's return to him.

Background of 1 Country and 2 systems

1. It was originally proposed to unify China and Taiwan but rejected by Taiwan.
2. The idea again came on surface when China started talks with Britain and Portugal as Britain was having control on Hong Kong and Portugal was having on Macau.

🔗 About Hongkong and Macau:

1. Britishers had taken control of Hong Kong from the china in 1842 after the 1st Opium War.
2. In 1898, Britain and China signed an agreement, which allowed the Britain to take control of the Hong Kong on lease for 99 years.
3. Macau was under the control of the Portuguese from 1557.
4. In the 1980s, China started the talks with both Britain and Portugal for the transfer of these 2 territories.
5. Hong Kong returned to Chinese control in 1997 and Macau was transferred to china in 1999.

🔗 About 1 Country and 2 Systems:

1. Under this, China proposed that both Hong Kong and Macau can have different economic and political systems from that of mainland China, while being part of China.
2. Both regions became the Special Administrative Regions (SARs) of China with their own currencies, economic and legal systems. However, defence and foreign affairs is decided by China.
3. Hong Kong has freedom of assembly and speech and some other democratic rights too which are not available in mainland China.
4. These freedoms are protected by the Basic Law (it's a mini constitution that guides relationship between Hong Kong and China) . Basic law is valid for 50 years that is till the year 2047 for Hong Kong and 2049 for Macau. But it is unclear that what will happen after the expiry of this period.

▶ 3.4 RUSSIA AND UKRAINE SIGNED A DEAL TO RESTART GRAIN EXPORTS

Why in News ?

Recently, Russia and Ukraine agreed to restart grain exports from the Black Sea ports (Odessa, Chernomorsk and Yuzhny). The deal has provisions for the safe passage of ships.

🔗 Where is Black sea located ?

It is located at the southeastern border of Europe. It is bordered by Ukraine to the north, Russia to the northeast, Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west.



Importance of this deal:

1. It will enable Ukraine to export almost 22 million tonnes of grains and other essential goods such as sunflower oil which are stuck(blocked) on the Black Sea ports due to Ukraine-Russia war.
2. It will make possible for the Russia to export its fertilisers. Russia accounts for 13% of world output of fertilisers.

What is the importance of Russia and Ukraine for global food security ?

1. Both countries accounts for more than 25% of the world's wheat supplies (Russia- 20%; Ukraine 8%).
2. Ukraine is the world's 4 largest exporter of corn (16% of global exports).
3. Ukraine is the world's largest exporter of sunflower oil.

3.4 S-400 MISSILE SYSTEM HAS BEEN KEPT OUTSIDE THE LIST OF SANCTIONS BY USA

Why in News ?

Recently, US passed a law that exempts India from economic sanctions(trade restrictions) under the Countering America's Adversaries Through Sanctions Act (CAATSA) for purchasing the S400 missile defence system from Russia.

What is CAATSA ?

1. It's a law that was passed in the US in 2017.
2. It was meant to punish those countries that is having deep relations with Russia, North Korea and Iran using economic sanctions.

Why the US has exempted India from CAATSA ?

1. The US sees India as an important partner in its fight against China.
2. If sanctioned, then the Quad grouping (it includes India, USA, Japan and Australia) will be badly impacted.
3. Growing status of India in the last few years.

What is S-400 Missile System ?

1. In 2018, India signed a deal with Russia to buy 5 units of S-400 missile system.
2. It's a long-range surface-to-air missile (LRSAM) system.
3. It has the capability to protect against almost all kinds of aerial attacks including drones, missiles, rockets and even fighter jets.

3.5 SUPPLY CHAIN MINISTERIAL FORUM 2022

Why in News ?

In July 2022, US hosted the Supply Chain Ministerial Forum, 2022 to maintain cooperation in global supply chains.

What is Supply Chain ?

It's the network of all the individuals, organizations, resources, activities and technologies involved in the creation and sale of a product.



📌 About Supply Chain Ministerial Forum:

1. Its a **partnership of 18 countries** and these are: 1) Australia 2) Brazil 3) Canada 4) Democratic Republic of the Congo 5) European Union 6) France 7) Germany 8) India 9) Indonesia 10) Italy 11) Japan 12) Mexico 13) Netherlands 14) Republic of Korea 15) Singapore 16) Spain 17) United Kingdom 18) United States.
2. Its objective is to **build collective, long-term supply chains** to counter risks arising from supply dependencies.
3. Importance of the forum has increased in the recent times because of the **shocks to global supply chains** from COVID 19, wars, conflicts, extreme weather events and natural disasters.
4. Currently, the **global supply chain is dominated by China**.
5. Aim of this form is to **reduce the dependence of these 18 countries on Chinese supply chains**.
6. **India, Japan and Australia** have also launched **Supply Chain Resilience Initiative (SCRI)** in 2021 to counter **China's dominance over supply chain in the Indo-Pacific region**.

▶ 3.6 ASIA ENERGY TRANSITION INITIATIVE (AETI)

Why in News?

Recently, Japan announced to **provide support to India to move towards clean energy** under its 'Asia Energy Transition Initiative'.

📌 About AETI:

1. Its aim is to achieve both '**sustainable growth**' and '**zero emissions**' in Asia region.
2. Under this initiative, Japan also supported **Association of South East Asian Nations (ASEAN)** countries to help them move towards net-zero carbon emissions.
3. Under it, almost **US\$10 billion financial support will be provided for renewable energy, energy efficiency** etc.



4. SOCIAL ISSUES

4.1 NATIONAL EDUCATION POLICY (NEP), 2020

Why in news?

In celebration of the National Education Policy (NEP) 2020's 2nd anniversary, the Union Minister of Home Affairs announced a number of initiatives.

📌 Launch of significant projects:

1. The Ministry of Education Innovation Cell and the Indian Knowledge Systems (IKS) Division collaborated to create the IKS-MIC technology demonstration programme in order to promote the development of products and practises that are based on and developed from India's traditional knowledge systems.
2. The national innovation and entrepreneurship policy supports the Ideation, Innovation, and Entrepreneurship (IIE) culture in schools.
3. Under the **Pradhan Mantri Kaushal Vikas Yojana, Skill India offers a three-year degree programme in collaboration with IGNOU and Skill Hubs.**
4. In 2022-23, 750 virtual labs in science and mathematics will be established, along with **75 skilling e-labs** for virtual learning environments.
5. More than 100 National Skills Qualifications Framework (NSQF)-aligned future skill qualifications will be developed across multiple domains.
6. National Initiative for School Heads and Teachers Holistic Advancement (**NISHTHA Early Childhood Care and Education (ECCE)**), to train an initial cadre of high-quality Anganwadi ECCE teachers.
7. Introduce **75 Bharateeya games in schools**, each month, PT teachers will introduce a seasonally appropriate Bharateeya game in schools.
8. National Curriculum Framework (NCF) Public Consultation Survey to conduct a public consultation survey in **23 languages** to collect input and suggestions for the development of the NCF, with a target of 1 million respondents/citizens.
9. The Kothari Commission was established in 1964 to develop a national and coordinated education policy. Parliament passed the **1st NEP in 1968** based on the recommendations of this Commission.
10. **NEPs continue to be used today - Indira Gandhi was Prime Minister when the 1st NEP was established in 1968.**
11. Rajiv Gandhi initiated the **2nd NEP in 1986**. (Revised in 1992).
12. The **3rd initiative is Narendra Modi's NEP 2020.**

📌 National Education Policy:

The policy is a comprehensive framework for elementary, secondary, and postsecondary education, as well as vocational training in both rural and urban India.

📌 Objective of NEP:

1. The goal of a NEP is to provide a comprehensive framework for guiding the development of education in the country.



2. Recognizing, identifying, and developing each student's unique abilities
3. All students must achieve foundational literacy and numeracy by grade three.
4. Complete valuations and participation, as well as extensive use of technology for creativity and critical thinking
5. The focus is on conceptual learning.

📌 What is the key NEP 2020 takeaways?

1. **School education** - The new NEP prioritises curriculum reform and simplified Board exams.
2. It also highlighted syllabus reduction to retain core essentials and a focus on experiential learning and critical thinking.
3. It promotes for a "5+3+3+4" school education design rather than a "10+2" structure.
4. This design will be appropriate for the age groups **3-8 years (foundational stage), 8-11 years (preparatory), 11-14 years (middle), and 14-18 years (secondary)**.
5. Early childhood education (pre-school education for children ages 3 to 5) is now included in the scope of formal schooling.
6. Preschool children will be included in the midday meal programme.
7. According to the NEP, students should be taught in their mother tongue or regional language until the fifth grade.
8. Higher education - The NEP proposes that Indian higher education be opened up to foreign universities.
9. It intends to abolish the UGC and the **All-India Council for Technical Education (AICTE)**.
10. It proposes a 4-year multidisciplinary UG programme with multiple exit options and the abolition of the M Phil programme.
11. It also proposes that all institutions that offer single streams be phased out.
12. **It states that by 2040**, all universities and colleges must strive to become multidisciplinary.

📌 How will these reforms be implemented?

1. The NEP only provides broad guidelines and is not mandatory.
2. Because education is a concurrent subject, the proposed reforms can only be implemented in collaboration between the Centre and the states.
3. **The government intends to implement the policy by 2040.**
4. The government intends to form subject-specific committees comprised of representatives from relevant federal and state ministries.
5. These committees will help to create implementation plans for each component of the NEP.
6. Following planning, a yearly joint review of progress against set targets will be conducted.

📌 Why is the emphasis on mother tongues and regional languages important?

1. The majority of the government-run schools in the nation already practise this kind of focus.
2. It is unlikely that private schools will be forced to switch their medium of instruction.
3. States were not required to teach in their citizens' mother tongues.



4. The policy categorically states that children will be taught in their mother tongue or regional language whenever possible because education is a concurrent subject.

What about multilingual parents' children?

1. According to the NEP, teachers will be encouraged to use a bilingual approach.
2. This approach will benefit students whose first language is not the medium of instruction.

How will higher education be made accessible to international students?

1. According to the document, top 100 universities in the world will be able to establish campuses in India.
2. The top 100 criteria aren't elaborated in the document, though.
3. The "QS World University Rankings" may be consulted by the government.
4. However, a new law that specifies how foreign universities will function in India must be introduced by the HRD Ministry.
5. Whether a new law would inspire the top universities abroad to open campuses in India is unclear.

What is the structure of the four-year multidisciplinary bachelor's programme?

1. The proposed 4-year programme would allow students to graduate with a certificate after one year, a diploma after two years, and a bachelor's degree after three years.
2. A certain amount of research work is typically included in four-year bachelor's programmes.
3. As a result, the student will learn more about the subject of his or her choice for a major.
4. Depending on how well they have performed, UG students may be able to enter a research degree programme right away after four years.
5. However, master's degree programmes will continue to run as usual, with students then having the option to pursue a PhD.

What effects will the M Phil program's elimination have?

1. The path of higher education would not be impacted at all by this.
2. In the normal course of things, a student can enrol in a PhD programme after earning a master's degree.
3. This is practically universally accepted practise right now.
4. M Phil was typically considered a research degree that fell somewhere between a master's and a PhD.
5. MPhil degrees have gradually been replaced by direct PhD programmes.

Challenges to the Effective Implementation of the NEP

1. India's educational system is diverse. India has the largest democratic educational ecosystem in the world, with up to 34 crore students enrolled. This makes it challenging to implement the NEP nationally.
2. **Federalism:** Several states, including Tamil Nadu, have strongly objected to several crucial NEP provisions and how they are being implemented.



3. **Legacy problems:** India's education system is overly bureaucratized and unable to innovate or expand. Experiential learning would also require a shift away from a strict content-driven rote learning system, which would the attitudes of stakeholders, such as the bureaucracy, teachers, and parents, have undergone a revolutionary change.
4. **Although mother-tongue instruction** improves students' learning abilities, finding trained teachers to manage such multilingual teaching would be challenging.
5. Although the NEP affirms the current commitment to maintain education budgets at 6% of GDP, it makes no mention of how to increase that percentage from its current 3.5% level.
6. **Learning loss:** In India, the percentage of children who cannot read and comprehend a brief, age-appropriate text by the age of 10 has increased from **54% to 70% according to World Bank**. It makes it extremely difficult to learn creatively.

Way Forward:

1. **Collaborative approach:** Instituting shared accountability and ownership for NEP implementation among important stakeholders, including the private sector, at the state, district, sub-district, and block levels is a
2. **Financial resources:** Businesses should be encouraged to invest in the education sector using CSR funds. Private donors should be free of taxes. India's higher education institutions should be permitted to create "scholarship funds" and own shares in multinational corporations, just like Harvard and MIT.
3. **Private sector:** It is important that the government and regulatory organisations design practical institutional frameworks that would harness the private sector's contribution and recognise it as an equal partner in the NEP process.
4. **The Higher Education Commission of India (HECI)** has been suggested as the new regulatory body in NEP to update the current framework. It is important to establish the body as soon as possible.
5. **Cooperative federalism:** a National Education Ministers' Council that is comparable to the GST Council must be established. The Council might act as a forum for talking about and solving implementation problems.
6. **Closing the Post-Pandemic Learning Gap:** Children, especially schoolchildren who are falling behind in their learning, should receive special attention.

▶ 4.2 CHILD LABOUR

Why is this in the news:

1. The Labour Committee of Parliament was recently informed that the centre has no new data on child labour.
2. A Parliamentary commission is thoroughly reviewing the **National Child Labour Project (NCLP)** programme for the first time.
3. The lack of current data is primarily due to the budgetary funds allocated for the NCLP project losing value after its merger with **Samagra Shiksha Abhiyaan**.

Child Labour:



The International Labour Organization (ILO) defines "child labour" as work that harms a child's physical and mental development, robbing them of their youth, potential, and dignity. It refers to labour that is extremely hazardous to children on a mental, physical, social, or moral level.

Child Labour in India:

1. According to the 2011 Census, there are 10.1 million working children in India between the ages of 5 and 14.
2. **causes: forced labour**, consumerism, military conflict, debt servitude, etc.

Some other key points:

1. According to UNICEF, one out of every ten Indian employees, or **13% of our workforce, is involved in child labour.**
2. Children from low-income families are forced to work in India's firework industry, bangle manufacturing, roadside restaurants, construction sites, and even as domestic help.
3. Recent research on "**Child Artists in India**" by a non-governmental organisation revealed that youngsters under the age of 15 who work in India's entertainment industry put in more than 12 hours of work per day.

Constitutional and Other Measures:

1. Constitutional:

- a. **Article 21:**A of the Indian Constitution (Right to Education) states that the state shall provide free and compulsory education to all children aged 6 to 14 years in such manner as the state may determine by law.
- b. **Article 23:**All forms of forced labour are prohibited.
- c. **Article 24** states that no child under the age of 14 may be employed to perform hazardous work in a factory or mine.
- d. **Article 39** states that "the health and strength of workers, men and women, and children's tender age are not abused."

2. **The Child Labour Act (Prohibition and Regulation) of 1986** makes it illegal for children under the age of 14 to work in hazardous industries or processes.

3. **National Child Labour Project (NCLP) (1987)**

- a. The government started it in 1988 to recover working children in the country's 12 working child endemic districts, and it grew over time.
- b. This is the major Central Sector Scheme for the child labour recovery process.

4. **Child and Adolescent Labour (Prohibition and Regulation) Act:**

- a. CALPRA states that no child may work more than five hours per day, and no more than three hours without rest.
- b. It also requires that at least 20% of the child's earnings from the production or event be deposited directly into a fixed deposit account in a nationalized bank in the child's name, to be credited to her/him upon attaining majority.



5. **The Platform for Effective Enforcement of No Child Labour (PENCIL)** is an electronic platform that aims to involve the Centre, States, Districts, Governments, Civil Society, and the General Public in achieving the goal of a child labour-free society.

International Initiatives:

1. The United Nations declared 2021 the International Year for the Abolition of Child Labour, urging immediate action to **achieve abolition by 2025**.
2. The Sustainable Development Goals (SDGs), which world leaders adopted in 2015, include a renewed global commitment to ending child labour.
3. It is an all-inclusive global partnership committed to achieving SDG Target 8.7 by 2030. (SDGs).
4. It works to eradicate forced labour, modern slavery, human trafficking, and child labour throughout the world.
5. The Alliance 8.7 Secretariat is currently hosted by the International Labour Organization (ILO).

Way Forward

1. **Eliminate Discrimination:** By addressing gender norms and discrimination that increase the risks of child labour, especially for girls, in domestic work and unpaid household chores.
2. Ensuring that the necessary laws and regulations to protect children are in place, supported by regulation machinery and child protection systems
3. **Good-quality schooling:** ensuring free and high-quality education at least until the minimum age for entering the labour force in order to provide a viable alternative to child labour and give children a better future.
4. Guardians are responsible for ensuring the basic education of their children, regardless of whether or not the child artists are employed.
5. **It is the responsibility of media organization to ensure that the child artist receives adequate rest and study time between work shifts.** Assuring that families of child artists deposit 20% of the child's earnings in a fixed deposit.
6. **Promoting Decent Work:** It would provide a fair wage for people (of legal working age) and adults, with a focus on workers in the informal economy, allowing families to avoid poverty-driven child labour.

▶ 4.3 REPLACEMENT LEVEL FERTILITY (RLF)

Why in the news?

1. At the National Family Planning Summit 2022, Union Minister of State for Health and Family stated that India has reached replacement level fertility, with 31 states or union territories having a total fertility rate of **2.1 or less**.
2. Between 2012 and 2020, India increased its use of contraceptives significantly, adding over 1.5 crore new users.

What is replacement level fertility?



It is the fertility rate at which a population precisely replaces itself from one generation to the next. On average, replacement level fertility necessitates 2.1 children on average.

Highlights of the National Family Planning Summit in 2022

1. The Union Minister highlighted that the National Family Planning Program has benefited from **Mission Parivar Vikas (MPV) 2016**.
2. Innovative programme methods, such as the distribution of **Nayi Pehel kits, Saas Bahu Sammelan, and Saarthi vans**, help in engaging the community and initiating conversations about family planning, healthy birth spacing, and the importance of small families.
3. Under the banner of Digital Intervention, the Minister also launched the **Medical Eligibility Criteria (MEC) Wheel Application**, the E-Module of the Family Planning Logistics Management System (FPLMIS), and the Family Planning Digital Archive.
4. The Minister also introduced the Indian Family Planning 2030 Vision document.

What steps is the government taking to control population growth?

1. The government has launched **Mission Parivar Vikas** to significantly increase access to contraception and family planning services in 146 high-fertility districts in seven high-priority states with a Total Fertility Rate (TFR) of 3 or higher.
2. These districts are spread across the states of **Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, and Assam**, which together account for **44% of the country's population**.
3. **Post-partum IUCD (PPIUCD)**, a new technique for inserting IUCDs immediately after delivery, and injectable contraception (Antara program), have been introduced.
4. Sterilization acceptors' compensation plan: The MoHFW compensates both the beneficiary and the service provider (and team) for wages lost while performing sterilizations.
5. **The Clinical Outreach Teams (COT) scheme** has been implemented in 146 Mission Parivar Vikas districts to provide family planning services in remote, underserved, and difficult-to-reach areas through mobile teams from recognize organizations.
6. **The Family Planning Logistic Management and Information System (FP-LMIS)** is a specialised programme that enables healthcare facilities of all levels to efficiently forecast, purchase, and distribute family planning supplies.
7. In the event of death, complications, or failure following sterilization, clients are covered by the National Family Planning Indemnity Scheme (NFPIS).

Way Forward

1. Even if India's fertility has reached replacement levels, our intervention efforts must continue to focus on the large population of reproductive age.
2. It is time for India to shift its focus from the supply side (families, communities, and society) to the demand side (providers and delivery systems). This emphasis allows for rapid, rather than gradual, progress.



4.4 GLOBAL GENDER EQUALITY INDEX 2022

1. **World Economic Forum (WEF)** released Global Gender Gap (GGG) Index for 2022.
2. **The GGG index** was introduced in **2006** with the goal of assisting in the identification of the most effective policies for closing gender gaps.

Objective:

1. It is the longest-standing index which tracks progress towards closing these gaps over time since its inception in 2006
2. The index benchmarks the current state and evolution of gender parity across **4 key dimensions-**
 - a. Economic Participation and Opportunity,
 - b. Educational Attainment,
 - c. Health and Survival, and
 - d. Political Empowerment

Scoring:

1. The Index measures scores on a 0 to 100 scale
2. India's ranking: India has been ranked at 135 out of 146 countries.

The Global Gender Gap Index Framework:

1. Economic Participation and Opportunity
2. Educational Attainment
3. Health and Survival
4. Political Empowerment

Global Key findings:

1. The gender gap will have reduced by 68.1% globally by 2022. Full equality will take 132 years if progress continues at the current pace.
2. The gender gap in economic participation and opportunity has decreased by 60.3%, the gender gap in health and survival has decreased by 95.8% across the 146 countries, and the gender gap in political empowerment has decreased by 22%.
3. The top ten economies have closed at least 80% of their gender gaps, with **Iceland leading the global ranking (90.8%)**, even though no country has attained full gender parity.
4. Finland (86%, second), Norway (84.5%, third), and Sweden (82.2%, fifth) are the other Scandinavian nations in the top five.

Performance of South Asia in the Index:

1. South Asia ranks last among the eight regions covered in the report, with only 62.4% of the gender gap closed based on no constant sample.
2. Bangladesh and Nepal lead the region in gender equality, with over 69% of gender gaps closed.



3. With a score of 43.5%, Afghanistan has the region's and the world's lowest level of overall gender parity.
4. South Asia has the greatest gender disparity in economic participation and opportunity.
5. South Asia ranks second lowest on the Educational Attainment subindex, trailing only Sub-Saharan Africa.

📌 Key findings about India:

1. India's global gender gap score has changed between 0.593 and 0.683 since the index's founding.
2. India receives 0.629 in 2022, which ranks seventh out of 16 countries.

📌 Economic Participation and Opportunity-

1. Despite an increase in the proportion of women in professional and technical roles, India ranked 143 in this subindex.
2. Although the gender parity score for estimated earned income improved, values for both men and women fell more for men.
3. India and Sri Lanka have made strides toward closing the gender gap in the proportion of women in senior positions.

📌 Health and Survival-

1. India ranks last (146th) among all countries.
2. This sub-index includes both the gender ratio at birth and the Healthy Life Expectancy.
3. The five countries with gender gaps greater than 5% in this sub-index are Qatar, Pakistan, Azerbaijan, China, and India.
4. The sex ratio at birth remains relatively low in large, populated countries such as India and Pakistan, whereas Bangladesh, Bhutan, Iran, and Sri Lanka have achieved parity.

📌 Political Empowerment:

1. This sub-index includes data such as the percentage of women in ministerial and parliamentary positions.
2. India has the highest ranking in this sub-index among all countries (48th out of 146).
3. Despite the fact that its score is only 0.267.
4. Women have held the highest office in both India and Nepal, as well as more important government positions.

📌 Educational attainment.

1. With a score of 0.961, India was ranked 107th in this sub-index.
2. Enrolment in primary, secondary, and tertiary education, as well as the literacy rate (%), are all included in this section.

📌 About WEF:

It was founded in 1971 and is an international non-governmental and pressure groups organisation.



📌 Reports published by WEF-

1. Global Gender Gap Report
2. Global Competitiveness Report.
3. Global Travel and Tourism Report
4. Energy Transition Index.
5. Global Risks Report

▶ 4.5 THE STATE OF FOOD SECURITY AND NUTRITION IN THE WORLD (SOFI) 2022

Why the news?

1. The United Nations World Food Programme, **FAO**, the **International Fund for Agricultural Development**, **UNICEF**, and **WHO** worked together to publish SOFI 2022.
2. It is an annual report that examines global hunger levels and provides data on global dietary standards.

📌 What are the report's findings?

Global level:

1. **Hunger has increased**; the world is moving away from its 2030 goal of ending hunger, food insecurity, and malnutrition in all its forms (SDG 2: No Hunger). **(Over 800 million people will be hungry by 2021.)**
2. Even with global economic recovery, more than 8% of the world's population will be hungry by 2030.
3. **Food insecurity widens the gender divide.** In 2021, 31.9% of women worldwide were moderately or severely food insecure, as compared to 27.6% of men.
4. The main causes are conflict, supply chain disruption, climate disasters, extreme weather, rising inequality, and slow economic recovery after the pandemic.

📌 India:

India has a high rate of undernourishment (about 16% of the population), wasting (17%), stunting (31%), and a low rate of exclusive breastfeeding (only 58%).

1. **Undernourishment** is defined as consuming insufficient food to meet minimum dietary energy requirements.
2. **Severe undernutrition** is another term for wasting. It indicates that a child has experienced long periods of malnutrition, resulting in significant muscle and fat tissue wastage. This means their weight is very low for their height.
3. **Stunting** occurs when a child is short for their age, usually as a result of malnutrition, repeated infections, and/or a lack of social sensory input.

📌 Recommendations:



1. The report proposed modifying food and agricultural support to target nutritious foods in order to make **healthy diets more affordable, accessible, and equitable for all**.
2. Governments could do more to lower trade barriers for nutritious foods like **fruits, vegetables, and pulses**.
3. Collaboration with the government and **civil society** to eliminate unequal power dynamics in agricultural and food systems.

▶ 4.5 PRIME MINISTER STREET VENDOR'S ATMANIRBHAR NIDHI (PM SVANIDHI)

What's news?

The government organised the "SVANidhi Mahotsav"—a cultural festival—to commemorate the PM SVANidhi Scheme's successes.

📌 Street Vendors and their importance in India:

1. The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 defines a street vendor as: "o Any person engaged in vending articles, goods, wares, food items, or merchandise of daily use or offering services to the public in a street, footpath, pavement, etc., from a temporary built-up structure or by moving from place to place."
2. With links to the formal economy, they have been an important part of India's economic growth.
3. **They are estimated at 1 crore** and account for approximately **11% of urban workers**.
4. The vending economy generates around **Rs 80 crore per day**, and each street entrepreneur or trader supports three others on average.

📌 SVANidhi:

1. PM SVANidhi's microcredit programme offers a \$10,000 working capital loan, as well as \$20,000 and \$50,000 loans with low interest rates.
2. The Ministry of Housing and Urban Affairs has assigned it as a Central Sector Scheme.
3. Its original start date of July 2020 to March 2022 has now been extended until December 2024 to assist street vendors affected by the COVID-19 pandemic.

📌 Objectives:

1. Providing a working capital loan to street vendors
2. enabling timely repayment, facilitating a working capital loan to street vendors, and rewarding digital purchases with a cash-back facility.

📌 Eligibility:

1. open to all urban street vendors operating as of March 24, 2020, or earlier.
2. To be eligible to participate in the scheme, street vendors must be from states or UTs that have notified rules and schemes under the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014.



📌 Features of the Scheme

1. There will be no collateral required for the loan.
2. Vendors will be qualified for the following cycle of working capital loans with a higher limit if they make on-time or early repayments.
3. Interest rates will be determined by the current interest rate and, in the case of NBFCs, by RBI guidelines for the applicable lender category.
4. Street Vendors can receive cashback and interest subsidies if they pay their loan EMIs on time and complete the necessary number of digital transactions.
5. The partner in charge of implementation is the **Small Industries Development Bank of India (SIDBI)**.

📌 Challenges in the implementation of the scheme:

1. Inconsistent application The Street Vendors Act of 2014 was enacted at random across the country, requiring a vendor survey before issuing a vending certificate.
2. Only one-quarter of India's estimated 1 crore street vendors, or 50 lakh, are covered by the scheme.
3. **Almost 85% of SVANidhi loan applicants** lacked a municipal **letter of recommendation (LoR)**.
4. Bank Unwillingness: Banks are hesitant to provide credit to poor vendors.
5. Furthermore, it can take months for some municipalities to issue LORs, leaving hundreds of vendors in the dark.
6. Many vendors' mobile numbers are not linked to their Aadhar cards, which is a systemic limitation.
7. Many vendors are subjected to bureaucratic and police indifference, with cops harassing and ordering them to close their businesses under the guise of COVID-related restrictions.
8. Differences at the state level continue to exist in terms of implementation. Additionally, funding restrictions continue to be in place in some areas.

Way Forward

1. The continuous scheme, introduced as a quick response measure, should be proposed as a long-term development strategy for "**ultra-micro industries**" (street vendors). This would give them ongoing credit.
2. **The 2014 Act mandates** the establishment of Town Vending Committees to ensure that all street vendors identified by the government are accommodated in retail zones that meet standards.
3. The scheme excludes **vendors in categories "C" and "D,"** who are less likely to be surveyed, lack an urban local government vending certificate, and require a letter of recommendation.
4. While private banks **currently contribute only about 2%** of total loan payments, they have the potential to play a larger role in the process.



5.

ECONOMY

▶ 5.1 5 YEARS OF GOODS AND SERVICES TAX

Why in News?

01 July 2022, marked the 5TH anniversary of the Goods and Services Tax (GST).

Goods and Services Tax (GST):

1. GST is a **comprehensive, multi-stage, destination based domestic tax.**
2. It **applies on the consumption of goods and services.**
3. It was **introduced through the Constitution (101st Amendment) Act, 2016** for the 'One Nation, One Tax, One Market' regime.
4. It gets **levied (applied) at every value addition point in Goods and Services.**
5. **several indirect Central and State/UT level taxes on Goods& Services gets merged under GST.**
6. **Some taxes are still out of its ambit such as:**
Excise Duty on Alcohol, Property Tax; Stamp Duty, Petroleum crude, Diesel, Petrol, Aviation Turbine Fuel, Natural Gas, Electricity Duty, Basic Custom Duty, etc.
7. **Based on inter-state and intra-state, it has 4 components:**
 - **Central GST (CGST)**
 - **State GST (SGST)**
 - **Union Territory GST (UTGST)**
 - **Integrated GST (IGST)**
8. **IGST is applicable on inter-state supply of goods and services while others are intra-state. It is governed by the Centre and divided between respective states.**

GST Significance and Achievements:

1. GST has **promoted economic federalism through GST Council.**
2. It has **encouraged Ease of Doing Business through simplification of business processes and electronic tax fillings.**
3. **Real-time data reporting** has become easy as GST allows tax administrators to **monitor tax compliances and potential revenue leakages.**
4. GST helps in exploring the **unexplored areas of data analytics and audit through easy integration with other departments, regulators etc.**
5. **Increase in tax base from 63.9 lakh taxpayers in 2017 to 1.38 crore in 2022.**
6. **Increased collection with GST is top contributor in central government revenues (₹5.9 lakh crore).**

Challenges in way of GST:

1. **Impact of GST on GDP is limited due to economic issues such as trade wars, pandemic, Russia-Ukraine war etc.**
2. **GST structure has 5 slabs with some items (mainly sin goods and services) having an additional cess. Also, tax slabs of items are changed frequently and not stable.**
3. **In the GST Council, there are federal disputes also where the centre-state often argue over GST rates, GST Compensation cess payments etc.**



4. **Due to additional revenue shortage after Covid-19** there is **lack of clarity on future of GST Compensation regime** to states is another major issue.
5. GST Council has an **unequal voting structure** with 1/3rd weightage of total votes **while the remaining 2/3rd is with state govts.**
6. **Exclusion of products and sectors from the GST regime** such as (petroleum products and power) **resulting in cascading taxes.**
7. **GST filling is not an easy process** and it **requires technical and tax related knowledge** to accurately fill it.
8. There are **several other issues** such as **fake billing, technical glitches** on tax portal etc makes it more complicated.

Way Forward:

1. Govt. should do **simplification of tax structure by reduction of number of tax slabs.**
2. **Digital resources should be easy to use** to accelerate the process of **claiming input tax credit.**
3. There is need to **increase the capacity of the portal to handle larger numbers via faster data processing.**
4. **Intelligent systems updated with latest technology** is very important to catch the tax avoiders.
5. **GST Council should be reformed to promote Cooperative federalism** and **consensus-based decisions**, helping to overcome issues like GST compensation.
6. Govt. should **establish GST Appellate Tribunal to fast-track settlement (Judicial) process.**
7. There are **other products including petroleum products** that should be brought under the **purview of GST to streamline the input tax credit.**

▶ 5.2 DISTRICT MINERAL FOUNDATION (DMFS)

Why in news?

In July 2022, Centre has released the guidelines to tighten the criteria for the use of DMF fund.

This was done to ensure that the are used for the specified purpose, i.e., redevelopment of areas and people affected by mining activities.

Key guidelines

1. DMFs will have to prepare a 5-year plan to ensure systematic development of the area affected by mining-related activities
2. DMFs will conduct a baseline survey through universities or organisations to formulate the perspective plan.
3. Gram Sabha or local bodies will help in preparation of needs assessment reports.
4. Based on the findings and gaps should be considered while forming the perspective plan.

About DMFs:

1. It is a special fund that is not tied to any particular scheme.
2. DMF is created in each district that has mining.
3. The unused funds get collected over the years.
4. These are established Under the Mines and Minerals (Development and Regulation) Amendment Act 2015.



5. According to MMDR (Mines and Minerals Development and Regulations) Amendment Act 2021, **central government is authorised to give direction regarding the composition and utilization of the fund** to state govts. As:
 - In 2021, government issued order that **no sanction or approval of any expenditure out of the DMF fund shall be done at the state level by the state government or any state-level agency.**
 - In March 2020, government issued guidelines suggesting that **up to 30% of the funds could be used towards expenditure related to COVID-19.**
6. **The funds collected are to be managed by non-profit trusts.**

Issues with DMF

1. There are **only few states** which have **provided updated district-level data on their DMF funds, despite PMKKKY guidelines.** Hence there is **lack of record maintenance.**
2. There is **lack of uniformity in fund collection across the states.**
 - As, **Until September 2021, Odisha, Chhattisgarh, Jharkhand, Rajasthan, Madhya Pradesh and Telangana, accounted for 80% of the total DMF collections.**
3. DMF also faces **federal disputes** as its **administration comes under the districts and states,** but the **new 2021 MMDR amendments have given greater power to the central government** regarding the **composition and utilisation of the funds.**
4. There is a **problem of poor planning and irregular investments especially in the areas with high tribal population.**
5. Practically there is a **lack of scope of representation of Gram Sabha members in the DMF body of any state** although **state DMF Rules and PMKKKY clearly mentions power and role of Gram Sabha** in mining-affected areas for identification of beneficiaries, DMF planning, and review of works and schemes.

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY):

1. PMKKKY was **launched by Ministry of mines under Mines and Minerals (Development and Regulation) Amendment Act, 2015.**
2. It **aims towards the welfare of areas and people affected by mining related operations,** using the funds generated by DMF.
3. The scheme **aims to reduce the adverse impacts, during and after mining, on the environment, health and socio-economics** of people and land mining districts.
4. The **scheme gives 60% share of the fund to high priority areas** like drinking water, health care, sanitation, education, skill development, welfare measures, skill development and environment conservation.
5. It **amends the Mines and Minerals (Development and Regulation) Act, 1957 as it regulates the mining sector in India.**
6. Under PMKKKY, **District Mineral Foundation (DMF by the state government) and a National Mineral Exploration Trust (NMET by the central government) were established.**
7. It **creates a new category of mining license** which is a 2 stage-concession for the **purpose of undertaking prospecting operations, followed by mining operations.** For example, **not even a single district has made the required investments for improving child nutrition and under five mortality rates (U5MR).**

Way Forward



1. There should be proper records and updated data about the beneficiaries for better service delivery.
2. People from mining-affected areas should be included in DMF body so that more effective usage of fund can be made.
3. An 'output and outcome' oriented approach shall be there while planning and making strategies about investments.
4. Transparency and public accountability should be maintained by sharing all DMF related information in public domain through a DMF website.
5. Community participation should be encouraged through decentralization and ensuring proper role of Gram Sabha.

5.3 FINANCIAL SERVICES INSTITUTION BUREAU (FSIB)

Why in News?

In July 2022, a govt. resolution was approved by Appointments Committee of the Cabinet (ACC) for establishing the Financial Services Institutions Bureau (FSIB) in place of the Banks Board Bureau (BBB).

About BBB:

1. BBB was formed in 2016.
2. It is an autonomous recommendatory body.
3. It was recommended by P.J. Nayak committee set up to prescribe ways to resolve the issues related to public banking sector.
4. It was established with a view to improve the Governance of Public Sector Banks (PSBs) by recommending for selection of heads of PSBs and help Banks in developing strategies and capital raising plans.
5. BBB was a part of the 7-point strategy of the Indradhanush Mission aimed at revamping PSBs.

Why there was need for replacing Banks Board Bureau (BBB)?

1. **Slow appointment process:** The average time taken for recommending the positions in PSBs was 76 days, in FIs (189 days) which is expected to be fasten now.
2. **Related Legal hurdles:** Different high courts have different thought on the powers and authority related to BBB.
3. **Lack of autonomy:** Government continued to exercise its authority over PSBs and it led to less scope for BBB to function.

About Financial Services Institutions Bureau (FSIB):

1. It is established under the Department of Financial Services (DFS), Ministry of Finance.
2. It Recommends persons for appointment as whole-time directors and non-executive chairpersons on the Boards of financial services institutions (including public sector banks (PSBs), public sector insurers (PSIs) and financial institutions (FIs).
3. FSIB also advise on certain other matters relating to personnel management in these institutions.
4. It works to promote good governance in PSBs.

Other major functions of FSIB:

1. It advises the Government on matters relating to appointments, transfer or extension of offices and etc. of said directors. O



2. FSIB advises Government on the desired management structure at the Board level for PSBs, FIs and PSIs.
3. To build a databank containing data related to the performance of PSBs, FIs and PSIs.
4. Formulation and enforcement of a code of conduct and ethics for directors in PSBs, FIs and PSIs.
5. It works to help PSBs, FIs and PSIs in terms of developing business strategies and capital raising plan etc.

Composition of FSIB:

1. Central govt. has given the authority to nominate the Chairperson of FSIB who shall be anyone of the following:
 - a retired official from the banking sector or a regulatory institution.
 - a business person of repute with sufficient knowledge of the financial sector.
 - a person with at least 25 years of experience in public administration with experience in banking and the financial sector.
2. There will be 6 part time members:
 - 3 persons with subject matter knowledge relating to PSBs and FIs.
 - 3 persons with subject matter knowledge relating to PSIs (to be nominated by the Central Government).

Significance of FSIB:

1. Due to improvement in operational processes, there will be **reduction in time taken for appointments in PSBs, FIs and PSIs.**
2. FSIB will help to develop better governance by critical positions (posts) that is important for better functioning of these institutions.
3. The FSIB, aims to **prevent red-tape (partiality) and promote people based on merit.**

▶ 5.4 INFLATION TARGETING

Why in News?

In July 2022, if average headline consumer price inflation (CPI) in India stays above 6%, RBI will have to explain for the first time, why the Inflation Target was not maintained.

More on News:

1. Inflation is at its peak globally due to various reasons such as covid-19 effect, Ukraine-Russia war, etc.
 - For advanced economies like the USA, it is at its 41-year high.
2. Even in India, the CPI inflation has remained above the upper limit of its tolerance band (over 6%).

What is Inflation?

In simple terms a general rise in prices of commodities (goods and services) in an economy is termed as Inflation.

What is Inflation Targeting?



1. Inflation targeting is basically a **monetary policy system**.
2. In this System the **central bank of a country (RBI in India) sets some target inflation rate for the medium-term and make policy to achieve the same.**
3. Currently, we are having **+/-4% Inflation Targeting in India.**

➤ About Inflation Targeting Framework:

1. **Price stability is a necessary condition for macroeconomic and financial stability. Hence, it remains the dominant objective of the monetary policy.**
2. The central bank (RBI) specifies an inflation rate as a goal and adjusts its monetary policy to achieve the annual inflation rate.



➤ Limitations of Inflation Targeting:

1. Though the MPC has controlled inflation under tolerable limits but still the framework has shown certain limitations such as:
2. As it is a medium-term framework but due to various lags in monetary policy transmission, it leads to a complex view among the policy makers.
3. It becomes even more challenging due to limited data on limited indicators.
4. Inflation Targeting can't control all parts of inflation with same effectiveness as it is designed to control inflation due to demand factors rather than supply factors.
5. It carries risk of hurting poor more as in low-income societies with high inequities, an inflation rate of 4% (+/- 2%) seem uncaring.
6. **Persistent low inflation increases the risk of deflation.**
[Deflation is fall in prices of goods and services due to lower growth rate and higher unemployment. It has a negative impact on the Financial System due to reduced savings and in turn lower profitability of the financial sector.]
7. **Higher inflation increases the risk of stagflation.**
[Stagflation is a condition of rising prices with high unemployment and slow economic growth.]

Way Forward

1. **Improved quality and frequency of data collection** should be encouraged for better policy framework.
2. **Both Monetary and Fiscal policy should be better coordinated** to tackle the global supply shocks.
For Example, helping kharif harvest can help ease supply side problems, particularly of oilseeds, cotton, pulses and cereals to reduce inflation.
3. There should be **different inflation targets to serve different classes.**
For Example: Lower inflation (3-4%) tolerance on food items consumed by the poor.

5.5 REVAMPED DISTRIBUTION CENTRE SCHEME (RDSS) FOR DISCOMS:

Why in News?

➤ In July 2022, Ministry of Power launched RDSS:

About RDSS



1. Scheme aims to improve the efficiency and financial sustainability of all DISCOMs/ Power Departments excluding Private Sector DISCOMs.
2. It will give financial assistance to DISCOMs for strengthening of supply infrastructure based on achieving basic minimum benchmarks (basically maintaining some minimum standards).
3. Existing schemes will be merged including Integrated Power Development Scheme (IPDS), Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) along with Prime Minister's Development Program (PMDP)- 2015 for the Union Territories of Jammu & Kashmir (J&K) and Ladakh.
4. Rural Electrification Corporation (REC) and Power Finance Corporation (PFC) have been nominated as nodal agencies.

Objectives of Scheme:

1. Reduction of Technical & Commercial losses to pan-India levels of 12-15% by 2024-25.
2. Reduction of gap between Average Cost of supply and Average Revenue to zero by 2024-25.
3. Developing Institutional Capabilities for Modern DISCOMs.
4. Improvement in the quality, reliability, and affordability of power supply.

About Electricity Sector in India:

1. There are 3 primary segments in the electricity sector:
 - Generation
 - Transmission
 - Distribution
2. Generation is the process of power production using different fuels and is carried out in generating stations (generation plants).
3. Transmission entities carry bulk power from the generation plants to the distribution substations through a grid and at high voltages.
4. Distribution entities supply electricity from the substations to individual consumers through a distribution network. These are what commonly known as DISCOMs (Distribution Companies).
5. DISCOMs in UTs are administered directly by the central government while in states these are governed by state govts.
6. Private DISCOMs are also operational in India but are limited to a few cities.
7. Under the Indian Constitution, power is a Concurrent subject and the responsibility for distribution and supply of power to rural and urban consumers rests with the states.
8. One of the key issues with the power sector currently is the poor financial situation of state DISCOMS.
9. This has been affecting their ability to buy power for supply, and the ability to invest in improving the distribution infrastructure.

Present status of DISCOMS:

1. State-owned discoms across the country are financially and operationally stressed despite 4 reform schemes in the past 15 years.



2. According to Niti Aayog's report of August 2021, most power DISCOMs are under losses every year.
3. The total loss estimated to be ₹90,000 crore in the financial year 2021.

Challenges faced by DISCOMs:

1. Due to bad technology and poor infrastructure, there is high level of technical and commercial losses.
2. According to Ujwal Discom Assurance Yojana (UDAY) dashboard data, AT&C losses currently stand at 21.7% whereas in UK and US, it is about 6-7%.
3. The Covid-19 pandemic time further distressed DISCOMs because of low demand from high paying Corporates & Industries as they get closed.
4. There has been delays in tariff (prices and subsidies) determination by the states despite centre's advice of periodical revisions.
5. DISCOMs are trapped in expensive and long-term thermal Power Purchase Agreements (PPAs) based on incorrect estimates of power demand.
6. Many loss-making DISCOMs are unable to invest in the upgradation and maintenance of their equipment due to lack of resources which decreases their productivity.
7. The government, under various regimes, has tried to improve the condition of DISCOMs in India through relief packages.
 - For Example: under UDAY programme through which state governments took over 75% of DISCOMs' debt and issued low-interest bonds to service the rest of the debt.

Way Forward

1. Regulatory functions should be insulated from political pressures by creating regional electricity regulatory commissions with participation of central government, which may reduce the cases of corruption.
2. Private participation should be encouraged to increase the efficiency.
 - For example: Franchise models implemented in Odisha and Maharashtra.
3. PPP model can be useful in loss-making areas, where commercial operation might not be practical.
4. Govt should address the states' concerns about insufficient resources and help in resolving these problems.
5. Central/state committees and agencies need to work together with greater cooperation so that projects and initiatives can be implemented with greater efficiency.
6. India should adopt a systemic strategy for smart metering infrastructure so that electricity theft can be reduced.

▶ 5.6 INDIA AND ITS BIO-ECONOMY

Why in news?

In July 2022, The Biotechnology Industry Research Assistance Council (BIRAC) released India's Bio-economy Report 2022.

More about the news:



1. The **Special Biotech Ignition Grant Call for Northeast Region (BIG-NER)** under BIRAC was also **launched**.
2. **Financial support of Rs 50 lakhs each to 25 start-ups** and entrepreneurs from the **Northeast Region** to develop biotech solutions was **announced**.

📌 About BIRAC:

1. BIRAC is a **not-for-profit Public Sector Enterprise** (Govt. body).
2. It was set up **by the Department of Biotechnology (DBT)** of the Ministry of Science and technology.
3. BIRAC works as an **Interface Agency to strengthen and empower emerging Biotech companies** to do research and innovation.

📌 What is Bio-Economics?

1. United Nations Food and Agriculture Organisation (FAO) has defined **bio-economy** as the **production, utilization, conservation, and regeneration of biological resources**.
2. It also includes related knowledge of **S&T, and innovation**, to provide **sustainable solutions across all relevant sectors** for a sustainable economy.

📌 What are the major areas of Bio-economics?

1. **Food systems** are the largest component in the bio-economy which includes **sustainable agriculture, sustainable fishing, forestry, and aquaculture**.
2. **Bio-based products** include **bioplastics, biodegradable clothing**, and other products with eco-friendly designs.
3. **Bioenergy** improves the security of energy supply and reduces energy dependence like biomass.

📌 India and its Bio-economy status:

1. **Bio-economy Market** made **2.6% share of India's GDP in 2021**.
2. The sector registered **14% growth over 2020 (Covid-19 effect)** as nearly a **5th of the Bio-economy** has been due to the **Covid-19 vaccination and testing drive**.
3. **Bio-Pharma** holds the largest share of the Bio-economy (**49 %**).
4. The **Bio-industrial segment's contribution to the Bio-economy** witnessed **202% growth in 2021**.
5. At least **3 biotech start-ups** came every day in 2021.
6. Foreign direct investment (FDI) in **biotech** is estimated to have touched **\$830 million in 2021**.

Challenges associated with Bio-economy:

1. **Large-scale implementation** of bio-economy will **put pressure and could create competition for limited agricultural land and water resources**.
2. **Big investment** is required for developing **infrastructure capacity** to exploit bio-economy resources
3. A **shift towards a bio-economy** can be harmful to the environment as it could release **additional carbon emissions**.
4. There is **absence of proper regulatory body** as The **Biotechnology Regulatory Authority of India Bill** which was to create a Regulatory body is still pending.



5. There is a **lack of clarity, awareness, and consensus on Intellectual Property Rights (IPR)**.
6. The **marketization of new products and processes** is extremely important, there is a **huge gap in demand and supply** which impacts the **commercialization of innovative ideas**.

Government initiatives to promote bio-economy:

1) National Mission on Bio-economics

- It was **launched by the Institute of Bio-resources and Sustainable Development (IBSD) under the Ministry of Science and Technology (MoST)**.
- The aim of the mission was **to develop the rural economy by using bio-resources**.

2) National Mission on biofuels

- It was **launched by the Ministry of New and Renewable Energy in 2009**.
- The aim was **to promote the use of biofuels in the country**.

3) Production-linked incentives (PLI)

- **PLI scheme for biopharma** has introduced various incentives to **promote self-reliance in local manufacturing of bulk drugs and to strengthen the value chain**.

4) National Biotechnology Development Strategy 2015-2020 (NBDS):

- **NBDS was launched in 2015**
- It was **launched as a successor to National Biotechnology Development Strategy (2007)**
- The main aim is **to establish India as a world-class bio-manufacturing hub**.

5) Promotion of Biotechnology in the North-eastern Region (NER) of India:

- It was **set up by the Department of Biotechnology (DBT) in 2009-10**.
- It was **launched to coordinate and promote biotechnological activities in the NER** with an annual investment of 180 crores.

Way forward

1. **Govt. should involve local government, state governments, as well as other market players for better functioning of the bio-economy.**
2. **Research on bio-economy issues should be increased for better application and solutions.**
3. **Public-private partnerships should be promoted to increase investment in the bio-economy sectors.**
4. It is **extremely important to Strengthen coordination between ministries and agencies** working on bio-economy-related policies, initiatives, and economic sectors.
5. There is a **need for the development of specialized and skilled human resources (workforce)** along with increasing the number and quality of jobs offered by this sector.
6. **Govt. should encourage Universities to grow an ecosystem in which scientists, innovators, and future entrepreneurs can be produced.**

▶ 5.7 DRAFT COFFEE PROMOTION BILL

Why in news?



Government is going to introduce a coffee promotion bill to modernize the functioning of the Coffee Board, promote exports, and support the development of the domestic market.

What is coffee Board of India?

1. It is a **statutory organization** constituted **under the coffee Act, 1942**
2. It works under the administrative **control of Ministry of Commerce and Industry, Government of India.**
3. The Board consists **33 members including Chairperson.**
4. It is **headquartered in Bengaluru.**

What is the New Bill About?

1. It aims to **modernize the functioning of the Coffee Board of India.**
2. It would address several functional areas of the Coffee Board, such as **support for production, research, extension and quality improvement, promotion of coffee, and skill development of growers.**
3. These things were originally not included in the mandate of the Coffee Board but now need to be incorporated into its functions and powers.

Potential Significance of new Bill:

1. It will help in **job creation as the coffee industry and associated industries of coffee supply chain grow.**
2. It will help in **improving quality of coffee** comparable to those of other countries.
3. New bill will also **protect the interests of the labour in plantations and processing units.**
4. It will promote **ease of doing business** by simplifying documentation as it there will be a **time-bound procedure** in the Bill for issuing the Registration Certificate.

What was the need to replace the old law?

1. The **older act has become obsolete in today's time**, as it was designed according to the need of that time.
2. There is **need to review the rules and regulations related to marketing of coffee to promote its export and growth.**
3. In the last decade **there has been a shift in methods of coffee cultivation and its processing**, due to mechanisation and industrialisation, which **demand a different policy framework** for the **coffee industry.**
4. The **social security and working conditions of the labour working in coffee plants and units was ignored** in the earlier act, which is being considered now.

India and its Coffee Production:

1. India is **among the top 10 coffee-producing countries.**
2. India has **produced 3% of the coffee production globally** in 2020.
3. According to The Food and Agriculture Organization (FAO) statistics, **India is the eighth largest exporter of coffee by volume.**
4. India **produces two types of coffee: Arabica and Robusta.**



☞ Climatic conditions for Growth of Coffee:

1. Coffee is largely produced in the southern part of India mainly in Karnataka, Kerala, Tamil Nadu, Andhra Pradesh and Odisha.
2. Coffee plants require hot and humid climate with temperature varying between 15°C and 28 °C and rainfall from 150 to 250 cm.
3. It does not tolerate frost, snowfall, high temperatures above 30°C and strong sunshine and is generally grown under shady trees.
4. Karnataka accounting for 71% (Kodagu alone produces 33%) of India's coffee production.

▶ 5.8 DIGITAL INDIA

Why in News?

In July 2022, India celebrated Digital India Week from 4 July to 9 July at Gandhinagar, Gujarat. PM said there that Digital technologies and Direct Benefit Transfer schemes have helped in saving 2.23 lakh crore from middlemen.

☞ The theme of the Digital India Week 2022:

'Catalyzing New India's Techade'

What is Digital India?

1. It is a flagship program launched by the Ministry of electronics and information technology (Meity) in 2015.
2. It aims to transform India into a digitally empowered society and knowledge economy.
3. Digital India is an umbrella program that covers multiple projects of various ministries and departments.

What is the vision of Digital India?

1. Digital infrastructure as a utility to every citizen.
2. Governance and Services on demand.
3. Digital empowerment of citizens.

☞ Key initiatives under Digital India and their significance:

1. For e-Governance

- Common Service Centres (CSS) were established to ensure a socially, financially, and digitally inclusive society by providing them services easily.
- Direct Benefit Transfer (DBT) schemes have helped in the speedy flow of funds, accurate targeting of beneficiaries, and reduction of fraud.

2. For Agriculture

- e-NAM (National Agriculture Market) helps in Ensuring remunerative prices of crops to farmers.

3. Health



- **e-Sanjeevani portal** has reduced the digital health divide existing between urban and rural areas.
- **CowIN (Covid Vaccine Intelligent Network) app** has helped India achieve 200 crore vaccine doses within 18 months.

4. Education

- **SWAYAM Portal** reduces the digital divide for students in remote and backward areas.

5. Finance

- **PM Jan-Dhan Yojana** has helped in achieving financial inclusion by providing access to banking facilities, financial literacy, access to credit, insurance, and pension facility.

6. Skills

- **PMGDISHA** Bridges the digital divide, specifically targeting the rural population.

Issues and challenges associated with Digital India:

1. There is a major problem with the **Rural-Urban Digital divide due to poor electricity, unaffordability, topographical challenges, etc.** in rural areas.
2. **Overall Digital literacy** (urban and rural combined) is **very low** in India, as according to government data, **only 20%** of Indians know how to use digital services.
3. **Language is also becoming a barrier** to digital inclusion. There is **not sufficient content present on digital apps in the local language** as a major population does not know English well.
4. **Due to patriarchy** (male dominant society) present in society there is **Digital Gender inequality** in India and it **can be seen through** various studies and observations:
 - **National Family Health Survey Report-5**: - Only **33.3% of the female have ever used the internet** as compared to **57.1% of the male population**.
 - During Covid-19 times also, **female students had lesser access to online learning**.
5. India's **digital infrastructure is insufficient to tackle the growing burden of digital transactions**.
6. There is a **lack of trained cyber security professionals** in India which gives rise to cyber threats and discourage people for using digital services.
7. India still **does not have a comprehensive data protection law** and data security and protection are still low.
8. **Private participation** in government digital projects is **poor** because of long and complex regulatory processes.

Way Forward:

1. There **should be enough awareness programs, especially in rural areas** to educate and inform the citizens about the benefits of digital services.
2. Initiatives like **National Digital Literacy Mission and PMGDISHA need to implement properly to achieve digital inclusion**.
3. **Private sector should be encouraged** through incentives to take part in the development of digital infrastructure.



4. India should have its own '**comprehensive legal framework**' including separate laws on data privacy, cybersecurity, etc.
5. **There should be proper skilling, re-skilling, and up-skilling** according to modern technologies (AI, big data, blockchain etc.)

5.9 EASE OF DOING BUSINESS (EODB) AND INDIA

Why in News?

In July 2022, Finance Ministry released the 5th assessment report of States/UTs under the Business Reforms Action Plan (BRAP) 2020.

What is BRAP?

1. BRAP is prepared by the **Department for Promotion of Industry and Internal Trade (DPIIT)** in 2014.
2. The plan was formed to implement **Ease of Doing Business reforms** across the country.
3. It has categorized States/UTs into 4 types
 - **Top Achievers**
 - **Achievers**
 - **Aspirers**
 - **Emerging Business Ecosystems**
4. It is **done based on 301 reform points** covering **15 business regulatory areas**.
5. This includes areas such as **access to information, single-window system, labour, sectoral reforms, reforms spanning across the lifecycle of a business, etc.**

The objective of BRAP:

To Boost investor confidence, establish a business-friendly climate, and enhance the Ease of Doing Business across the country by introducing an element of healthy competition among states.

✎ About Ease of Doing Business (EoDB)

1. It indicates, **how easy it is to do business in a particular country**.
2. It is **based on** the belief that there is a **positive correlation between the regulatory environment and economic outcomes**.
3. **India** ranked 63rd in EoDB Rankings 2020.
4. It seeks to **simplify the existing regulations by simplifying the life cycle of a business and create an investor-friendly ecosystem**.

✎ Challenges in EoDB Reforms:

1. **India is still behind in important parameters** of the business cycle like implementing contracts with less delays.
2. There is no clear **Policy Environment** leading to **frequent policy changes** including the use of tariffs and other measures.
3. **Infrastructure is not sufficient due to low capital expenditure** which discourages investors from set-up up new businesses.
4. There is a major concern about **poor governance and increased corruption**, which **impacts the overall business ecosystem** of a country.



5. **Excessive focus on EoDB ignores other important structural, social, or political issues, and this negligence can cause unrest in the nation.**
6. **A one-size-fits-all approach is not suitable for a country like India with so many types of varieties.**

Significance of EoDB:

1. **Boost economic growth through improved market efficiency and reduced regulatory burden.**
2. **Attract Foreign Investment** by convincing the mindset of investors through an easy and transparent policy framework.
3. **EoDB positively impacts exports and increases there (exports) by lowering the cost of business and improving competitiveness.**
4. **A low regulatory burden helps entrepreneurs to devote time on productive activities.**

Way Forward

1. **Improving the Governance business related ministries and agencies** becomes very important for **efficient and transparent business clearances.**
2. **Number of Dedicated commercial courts** should be increased in all high courts for faster resolution of **commercial disputes.**
3. **States should be encouraged to enact Comprehensive Uniform Building Code/building by-law** applicable to the entire
4. **State.**
5. **Digitization of all land records with unique ID and publicly available Records of Rights** should be there so that **better policy can be frame with updated data.**
6. There should be a **stable, clear and Comprehensive** (inclusive of all components) **Policy, considering EoDB requirements in account.**
7. **Along with clear policy its implementation and proper follow-ups to remove bureaucratic hurdles and other related issues** is also important.
8. **Govt should Understand the dynamics of each business and balance different socio-economic needs.**
For Example: balancing business interests and labour interests.
9. **To establish a culture of learning among states/UTs from each other's best practices** will be a significant step towards a **reliable business ecosystem.**

5.10 Energy Poverty

Why in News?

In July 2022, **G-7 Summit** was held in **Germany**, where the Indian PM highlighted the issue of **energy poverty** and the need for **equal energy access** for the **poor global south** and the **rich global north.**

What is Energy Poverty?

1. Energy poverty is also known as **fuel poverty.**
2. It can be defined in **2 ways** as:
 - **Energy Accessibility**, i.e., lack of access to electricity.
 - **Energy Affordability**, i.e., household dependence on inefficient and polluting energy sources such as burning of solid biomass.



3. Nearly **3 billion** people are energy-poor people in **Latin America, Asia, and Africa** alone.
4. The risk of energy poverty in Europe and other parts have also increased due to rising energy prices.

What are the reasons for Energy Poverty?

1. Country with **low income** have less nation building capacity as they have lesser funds to develop its Energy Economy.
2. **Country with low natural resources such as coal, fossil fuels more dependent on imports for Energy and mostly remains Energy poor.**
3. **Poor governance and weak planning** in power sector impact badly the developmental projects in power sector.
4. **Lack of technology or older technology is also one of the major reasons behind the less efficiency** of power sector, as it led to poor utility of available resources.
for example: Transmission and distribution losses.
5. **Sudden rise in the prices of energy fuels due to wars and other geopolitical tensions cause shock to the domestic and regional economies, which affects power security of the countries.**

Impact of Energy Poverty:

1. It Reduces the of **standard of living** and **productivity of people** due to lack of access to energy.
2. It also **traps poor people in a vicious cycle of poverty** due to increased spending of money and time on energy resources, especially in rural and remote areas.
 - For Example: in Africa nearly **30%** of the population lack access to electricity.
3. Energy Poverty **impacts the human health badly as it increases the Infant Mortality Rate** and other parameters due to indoor pollution, lack of access to clean water etc.
4. **WHO says, indoor pollution is the reason** for an estimated **1.3 million deaths per annum in low-income countries due to use of biomass.**
 - Similarly, in cold countries it leads to **winter deaths and other health concerns.**
5. Energy poverty also **affects the affordability of various means of technology to reduce energy use and carbon emissions which impacts the environmental health.**
6. **Autonomous development** of a nation also **gets affected in long run due to unemployment, poverty etc. with risk of social unrest.**
 - **Yellow vest movement in France** was primarily motivated by rising fuel prices.

Challenges in addressing Energy Poverty

1. **Atlantic countries dominate** in global energy through institutions like **International Energy Agency (IEA)** giving **less space to other countries in the energy market.**
2. **Individual interests** become reason for high fuel prices of energy making it less affordable.

For Example:

- **OPEC's interest** in high fuel prices
- **NATO's sanctions on Russia** have increased the energy deficit.



- **Russia with 12.6% of the world's oil production** (high in resources).
- 3. Climate Change has also led to **significant decline in global exploration** (search and mining activities) & **production activities, leading to energy poverty**.
- 4. **Tightened Environmental Regulations** is a major roadblock as it **increases household energy poverty due to affordability issues** for households using nonclean energy.
- 5. Climate related targets put developing countries like India at a disadvantage with the Developed countries as they both have to limit their developmental activities including power sector.
- 6. Developing countries have had a negligible part in the **historical emissions** and require more energy to **bridge the developmental gap**.

Way Forward

1. Platforms like **G-20 and BRICS** should be used properly to improve governance in **power sector** with major focus on **energy access, poverty and security**.
2. **To find solutions for Economic Inequalities** is extremely important as **energy poverty is directly linked to purchasing power, influencing our choices of energy**. (Clean or non-clean energy)
3. There should be **better policies and planning to improve efficiency of power sector from local to national level**.
4. **New and cheaper energy resources should be tested through research and innovation**, for **cost-effective electricity access to all**.
For Example: **Use of smart appliances** that adjust their consumption.
5. Technologies like **Geospatial mapping** should be better used to **plan electricity distribution**.
6. **Vulnerable (poor) Sections should be protected in cases of price rise with access to clean energy sources**, that will help to **lessen the adverse effect of environmental regulations and maintain human health as well**.
For Example: Assistance measures such as **improved cooking stoves or biogas** can help in giving access to clean cooking fuel.
7. **Increase awareness and social partnership on clean fuels while Increasing employment generation** for better affordability is **most practical solution**.

Initiatives in India to tackle the Energy Poverty:

1. **Bachat Lamp Yojana**
2. **One Sun One World Grid Declaration**
3. **International Solar Alliance**
4. **PM Kusum Yojana, etc.**

5.11 DEPRECIATION (FALL) OF INDIAN RUPEE (INR)

Why in News?

In July 2022, the **RBI (Reserve Bank of India)** relaxed norms for **foreign investment in debt, external commercial borrowing (ECB), and Non-Resident Indian (NRI) deposits**, to control the side down of the Indian rupee (INR) and boost forex inflows.

- In fact, the **other currencies including strong currencies like Euro and the British pound have also been affected**.



For Example, For the first time in 20 years, the euro-dollar exchange rate became equal in July 2022.

➤ About Exchange Rate and its Influencing Factors:

1. The exchange rate is the **price of one currency in terms of another currency**.
2. It **can be fixed** (exchange rate decided by central banks) or **floating** (decided by demand and supply).
3. The **floating (flexible) exchange rate is determined by the foreign exchange market or forex based on various factors**.
4. In India, the **exchange rate management has evolved from the fixed exchange rate regime** (in line with the prevalent Bretton Woods System) to a market-determined exchange rate since March 1993.
5. **Both RBI and the central government have a limited role to ensure proper functioning of forex ecosystem.**

➤ Reasons for the recent fall of INR:

1. **India imports around 85% of its crude oil demand**, so the **recent increase in its prices** due to Russia-Ukraine War, demand-supply, and other geopolitical reasons **has increased its trade deficit which has decreased rupee value**.
2. **Global Monetary Policy Tightening has badly impacted the Indian Rupee value**.
3. By mid-July, **FPIs (Foreign portfolio investments) had pulled out around \$29.6 billion from the Indian market**, which has led to **increase in demand for the US dollar**.
4. **Domestic factors** such as high inflation, widening Current Account Deficit (CAD) due to rising trade deficit **have also contributed to rupee fall**.
[CAD stands for computer-aided design and is a way to digitally create 2D drawings and 3D models of real-world products before they're ever manufactured.]

➤ How does Rupee Depreciation Impact Indian Economy?

1. **India is a net importer** hence **any fall in Indian currency will increase the variables like Current Account Deficit (CAD) and Balance of Payments (BOP)**.
2. As the INR falls, we have to give more rupees to get the required imports that **Increases our Import Bill for raw materials, equipment or other supplies**.
3. **Devalued currency will impact the Inflation because of supply shocks** in key import commodities such as coal, crude oil, edible oil, etc.
4. **Indian Import Cover will decrease due to increased import prices**.
For Example: The import cover of India is now at 10 months of import, down from 15 months of import cover in September 2021.
[**Import Cover measures the number of months of imports that can be covered with foreign exchange reserves available with the central bank of the country. 8 to 10 months of import cover is essential for the stability of a currency.**]
5. A **continuous fall of INR discourages foreign investors from making fresh investments**, causing further loss of value in dollar terms.

Way Forward:

1. India should try to **control the continuous changes in the exchange rate through inflation control as it will improve FPI's confidence in the Indian market which will increase rupee value**.
2. **Limiting Imported Inflation** by the collective action of **fiscal and monetary policy**.



3. India should use its Forex Reserves carefully so that no slowdown in exports and imports can put additional pressure on it.
4. Big private Companies should be encouraged to become part of major global indices such as MSCI and FTSE and hence competitiveness can be increased.

To increase forex inflows, boosting forex reserves, India should accelerate its entry into Global Bond I

5.12 INDIA'S FOREIGN DIRECT INVESTMENT (FDI) TEND

Why in news?

According to Ministry of Commerce data, India received the highest annual FDI inflows of USD 84.835 billion in FY 21-22, overtaking the previous year's FDI inflows by USD 2.87 billion.

What is FDI?

1. It is an investment made in one country by a company or an individual into business interests in another.
2. It is a significant driver of economic growth.
3. Here, a company takes control of a business entity in another country.
4. With FDI, foreign companies are directly involved with day-to-day operations in the other country. This means they aren't just bringing money with them, but also knowledge, skills, and technology.
5. It is commonly made in open economies that have a skilled workforce and growth prospects.

Top 5 sourcing nations for FDI equity flows into India in FY 2021-22 are -

1. Singapore (27.01%)
2. USA (17.94%)
3. Mauritius (15.98%)
4. Netherland (7.86%)
5. Switzerland (7.31%)

Top 5 sectors receiving the highest FDI equity inflow during FY 2021-22 are-

1. Computer Software & Hardware (24.60%),
2. Services Sector (Finance, Banking, Insurance, Non-Fin/Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis, Other) (12.13%).
3. Automobile Industry (11.89%),
4. Trading 7.72% and
5. Construction (Infrastructure) Activities (5.52%)

Top 5 States receiving the highest FDI Equity Inflow during FY 2021-22 are -

1. Karnataka (37.55%)
2. Maharashtra (26.26%)
3. Delhi (13.93%)
4. Tamil Nadu (5.10%)
5. Haryana (4.76%)



📌 FDI in Manufacturing Sectors in India:

1. It is rapidly becoming a preferred country for FDI in the manufacturing sector.
2. FDI equity inflows into the manufacturing sector increased by 76% in FY 2021-22 compared to FY 2020-21.
3. According to the UNCTAD World Investment Report (WIR) 2022, India moved up 1 place to take the 7th place among the top 20 host economies for 2021 in its analysis of global trends in FDI inflows.

📌 FDI Advantages:

1. Economic growth accelerates
2. Human capital development
3. improved technology, tools, and abilities.
4. increase in exports.
5. supports the stability of the exchange rate.
6. Making a Competitive Market
7. contributes to the fight against climate change

📌 FDI challenges:

1. Access to local markets is unethical.
2. Domestic investment is also being impacted.
3. not suitable for industries with strategic significance.
4. Investors have a lower level of moral attachment.
5. Policy changes pose a threat.

📌 Government initiatives to encourage foreign direct investment:

1. Manufacturing, civil aviation, retail trading, financial services, insurance, and telecommunications have all seen transformative reforms implemented by the government.
2. Regulations are being loosened as the government works to promote international relations, lower regulatory issues, and improve the business culture.
3. The apex industry chambers, associations, representatives of various industries/groups, and other organisations are consulted before any changes to the FDI policy are made.
4. Production Linked Incentive (PLI) Scheme for a number of sectors to promote FDI inflow.

▶ 5.13 OFF-BUDGET BORROWINGS (OBBS)

Why in news?

1. The Union Government has revised the rules for adjusting state off-budget loans, stating that debts from the previous fiscal year can now be charged from borrowing ceilings for the next 4 years, till March 2026.



2. The main drivers of state O-BB increases are the slowing of revenue growth caused by disease outbreaks and higher revenue expenditures, as well as the GST's breakdown of independent financial support.

Key features of the new rules:

1. The Union Government declared that off-budget borrowings by states should be treated as their own debt in order to increase transparency in state finances.
2. By taking this action, states have more money available to pay for capital projects during the current fiscal year.

What are 'Off-Budget Borrowings'?

1. OBBs are loans taken not by the Centre directly, but by another public institution that borrows on the central government's instructions.
2. Such borrowings are used to meet the government's expenditure requirements.
3. However, because the loan's liability is not formally on the Centre, it is not included in the national fiscal deficit.
4. {The fiscal deficit is the difference between the government's total revenue and total expenditure.}
5. This contributes to keeping the country's fiscal deficit within acceptable bounds.
6. Previous provision:
 - (a) O-BBs are loans made by state government institutions for special purpose vehicles and so on that are expected to be serviced by the state government's own budget rather than the revenues of the borrowing institution.
 - (b) Such borrowings avoid the state's fixed net borrowing limit for the fiscal year by transferring loans outside of the state budget.
 - (c) As a result of the impact on revenue and fiscal deficits, these borrowings have exceeded the state FRBM Act's fiscal indicator targets.
 - (d) The ceiling has been set at 3.5% of GSDP for 2022-23, with an additional 0.5% tied to power sector reforms.
{Gross State Domestic Product (GSDP) is a budgetary measure that accounts for the total volume of all finished goods and services produced within the geographical boundaries of the State during a specific time period, usually 1 year.}
 - (e) Article 293 (3) requires state governments to seek permission from the Centre for new borrowing if they are indebted to the Government of India.

Off-budget borrowings in India:

1. The Union government planned to borrow Rs 5.36 lakh crore in the current fiscal year, according to the Budget documents.



2. This figure, however, did not include the loans that public sector enterprises were supposed to take on their behalf, as well as the Centre's deferred bill and loan payments.
3. These loans and payments are classified as "off-budget borrowings" because they are not included in the fiscal deficit calculation.
4. According to the Comptroller and Auditor General's 2019 report, this method of financing places major sources of funds outside of Parliament's control.

☞ To raise funds, off-budget borrowings are used:

1. The government can direct any implementing agency to borrow or issue bonds in the market to raise the necessary funds.
2. The government only paid half of the Food Corporation of India's food subsidy bill in the Budget 2020-21.
3. Similarly, public sector oil marketing companies have previously been asked to pay for subsidised gas cylinders for Pradhan Mantri Ujjwala Yojana beneficiaries.
4. Similarly, PSU bank loans were used to compensate for the shortfall in fertiliser subsidy release.

▶ 5.14 SCHEMES TO STRENGTHEN MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES)

Why in news?

PM participated in the 'Udyami Bharat' programme and launched several key initiatives for MSMEs.

1. 'Udyami Bharat' reflects the government's ongoing commitment to working towards the empowerment of MSMEs.
2. To provide necessary and timely support to the MSME sector, the government has launched several initiatives such as MUDRA Yojana, Emergency Credit Line Guarantee Scheme (ECLGS), Scheme of Fund for Regeneration of Traditional Industries (SFURTI), and others which have benefited crores of people across the country.

About MSME:

The MSME sector accounts roughly 30% of India's GDP, 48% of exports, and 45% of manufacturing output, while also employing 11.1 million people through 6.34 million businesses.

Raising and Accelerating MSME Performance (RAMP) scheme:

- a. To improve the impact of existing MSME schemes by increasing MSMEs' application capacity and coverage.
- b. It will support the Aatmanirbhar Bharat Abhiyan by encouraging innovation, ideation, new business incubation, and entrepreneurship.

☞ Capacity Building for First-Time MSME Exporters (CBFTE) scheme:

- a. To encourage MSMEs to offer products and services of international standard.



- b. This will increase the participation of Indian MSMEs in the global value chain and help them in realising their export potential.

Prime Minister's Employment Generation Programme (PMEGP):

- a. It is a credit-linked subsidy programme that was approved in 2008 by combining the Prime Minister's Rojgar Yojana (PMRY) and the Rural Employment Generation Programme (REGP).
- b. It is a government-run programme overseen by the Ministry of Micro, Small, and Medium Enterprises.
- c. The Khadi and Village Industries Commission (KVIC) is in charge of implementing the Scheme at the national level.
- d. The Scheme will be implemented at the state level through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs), District Industries Centres (DICs), and banks.

New Features:

1. Increase in the maximum project cost to Rs 50 lakhs (from Rs 25 lakhs) for manufacturing sector and Rs 20 lakhs (from Rs 10 lakhs) in service sector.
2. Inclusion of applicants from Aspirational districts & Transgenders in Special Category applicants for availing higher subsidies.
3. PMEGP (KVIC is the nodal agency) provides employment opportunities to unemployed youth by assisting setting up of micro-enterprises in non-farm sector.

Furthermore, under the 'Strengthening Pharmaceuticals Industry Scheme,' the Ministry of Chemicals and Fertilizers launched 3 initiatives. Initiatives are being launched to help Indian pharmaceutical MSMEs in becoming a part of the global supply chain by offering incentives to obtain WHO Schedule M or Good Manufacturing Practice (GMP) certification.

{GMP certification is a WHO standard that ensures the manufacture and control of high-quality products.}

1. PTUAS (Pharmaceutical Technology Upgradation Assistance Scheme):
 - a. This programme would make it easier for pharmaceutical MSMEs with a track record of success to upgrade their technology.
 - b. It provides a 10% capital subsidy on loans up to Rs 10 crore with a 3-year minimum repayment period, as well as an interest subsidy of up to 5% (6% in the case of SC/ST units).
2. API-CF (Assistance to Pharma Industries for Common Facilities Scheme):
 - a. This scheme would boost the long-term capacity of existing pharmaceutical clusters.
 - b. It allows for up to 70% of the approved project cost (or Rs 20 crore in the Himalayan and north-eastern regions, whichever is less) to be spent.
3. PMPDS (Promotion and Development Scheme for Pharmaceutical and Medical Devices):
 - a. The scheme's aim is to expand a database of pharmaceutical and medical device companies.
 - b. It would involve compiling research reports on subjects important to the Indian pharmaceutical and medical device industries.



📌 Related News:

1. The Rural Tribal Technical Training programme, also known as Grameen Udyami, awarded skill certificates to about 140 tribal youth who later became village engineers.
2. Sansadiya Sankul Pariyojana's pilot project was launched in a number of states, including MP, Chhattisgarh, Odisha, etc.

▶ 5.15 NATIONAL APPRENTICESHIP PROMOTION SCHEME (NAPS)

1. According to the Ministry of Skill Development and Entrepreneurship, NAPS will be included in the Direct Beneficiary Transfer (DBT) scheme.
{DBT is an attempt by the Government of India to change the mechanism of transferring subsidies that was launched on January 1, 2013. This scheme aims to establish a zero-sum system for transferring subsidies directly to people's linked bank accounts.}
2. Through the NSDC the government will now directly transfer 25% of the allowance payable up to Rs. 1500/- per month to apprentices' bank accounts.
3. It aims to encourage employers to hire trainees and help them in discovering right job roles while maximising their potential through in-depth skill development.
4. NAPS has replaced Apprentice Pratsahan Yojna (APY) from 2016

📌 National Apprenticeship Promotion Scheme (NAPS):

In order to promote traineeship across the country, the Indian government launched NAPS in August 2016. It does this by providing financial incentives, technology, and advocacy support.

The 2 components of the plan are as follows:

1. Sharing with the employers up to Rs. 1500 per trainee per month of 25% of the suggested compensation.
2. The cost of the foundational training will be divided up to a maximum of Rs. 7,500 per trainee.

▶ 5.16 RANKING OF STATES' EXERCISE 2021 ON SUPPORT TO START-UP ECOSYSTEMS DECLARED

About: The States' Startup Ranking exercise, which was launched in 2018, ranks states and UTs in terms of providing a simple regulatory environment to strengthen the Startup ecosystem for aspiring entrepreneurs.

Mandate: Its aims to encourage states and union territories to work towards easing regulations for the growth of startups and strengthening support for the startup ecosystem.

The releasing ministry: states' startup ranking is released by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

Significance: The States' Startup Ranking helps in promoting India's vision of competitive and cooperative federalism.



Participants were evaluated across 7 broad Reform Areas, which included 26 Action Points such as Institutional Support, Fostering Innovation and Entrepreneurship, Access to Market, Incubation Support, Funding Support, Mentorship Support, and Capacity Building of Enablers.

Categorization: States and Union Territories are divided into five categories for the purposes of the States' Startup Ranking: Best Performers, Top Performers, Leaders, Aspiring Leaders, and Emerging Start-up Ecosystems.

States' Startup Ranking 2021 Results

1. Gujarat, Karnataka, and Meghalaya came out on top in their respective categories.
2. After the United States and China, India has the world's 3rd largest startup ecosystem.

Initiatives Taken:

1. Together with the Startup India Seed Fund, the Startup India Initiative
2. SAMRIDH, or Start-up Accelerators of MeitY for Product Innovation, Development and Growth.
3. Startups benefit from IPR protection and tax breaks.
4. National Startup Awards to honour and reward exceptional startups and ecosystem enablers.

Department for Promotion of Industry and Internal Trade

1. It was established in 1995, is in charge of overall industrial policy formulation and implementation, whereas individual ministries are in charge of specific industries' production, distribution, development, and planning.
2. The Department's role has evolved from industrial regulation and administration to enabling technology and investment flows and monitoring industrial development in an open economic environment.

5.17 GLOBAL FINDEX DATABASE 2021

1. The World Bank has released "The Global Findex Report 2021".
2. The Global Findex surveys over 125,000 adults in 123 economies during COVID-19 to better understand how people use formal and informal financial services and digital payment systems.

The Report's Findings:

1. Account Ownership
 - a. It has increased by 50% globally, reaching 76% of the global adult population.
 - b. Recent growth in account ownership has been widespread across dozens of developing economies, with the majority of new accounts opened in India and China.
2. Access to Formal Banking:
 - a. India and China do not have formal banking because of their population size (130 million and 230 million, respectively).



- b. Because they lack official forms of identification, do not own a mobile phone or other forms of technology, and have fewer financial means, women are frequently denied access to formal banking services.
- c. Men hold 74% of all accounts in developing countries, while women hold 68%.
- 3. Unbanking:
 - a. Globally, 24% of adults are unbanked. One of the primary reasons is a lack of funds, and distance is a barrier for 31% of unbanked adults.
 - i. {Unbanked people are those who do not have an account with a financial institution or a mobile money service provider.}
 - b. 64% of unbanked adults worldwide have a primary education or less.
 - c. Financial services are too expensive and complicated for 36% of the world's unbanked adults.
- 4. "Covid-19 and Digital Payments:
 - a. The COVID-19 pandemic increased the use of digital payments.
 - b. In 2021, 18% of adults in developing countries paid utility bills directly from their accounts. One-third of these bills were paid online for the first time.
- 5. Mobile Money:
 - a. Mobile money has supported financial inclusion in Sub-Saharan Africa, particularly among women.
 - b. Sub-Saharan Africa is home to all 11 economies, with a higher proportion of adults with mobile money accounts than traditional bank accounts.

📌 Financial providers helped expand financial access:

- a. Since the COVID-19 pandemic, financial inclusion has become an important factor in both short-term relief and long-term recovery efforts, thanks to the government, private players, and financial institutions lowering barriers and improving infrastructure.

📌 Financial Worries:

1. Adults in developing countries are more likely to be concerned about finances than adults in high-income countries.
2. Concerns about medical expenses are highest in Sub-Saharan Africa and South Asia, where 64% of adults are very concerned, and lowest in East Asia and the Pacific, where 38% of adults are very concerned.

📌 India's Specific Findings

1. India is 1 of seven countries in which half of the world's 1.4 billion adults lack formal banking access.
2. The Aadhar system has significantly increased financial inclusion, with account ownership increasing from 35% in 2011 to 80% of adults in 2017.
3. After the country switched from cash to biometric smart cards, internal fraud and leakage from pension payments decreased by 47%.
4. Inactivity in bank accounts is caused by a lack of areas close to financial institutions, a lack of trust, and a lack of need.

Recommendations



1. Policies must include safeguards for society's most vulnerable members, such as women, the poor, and those with limited educational attainment or financial literacy, in order to exit the pandemic, strengthen momentum, and expand access to digital banking services.
2. The gender gap in mobile access must be addressed to ensure equitable progress toward financial inclusion.
3. The gender gap in mobile access must be addressed to ensure equitable progress toward financial inclusion.
4. Financial regulators and supervisory agencies should improve supervisory monitoring systems to identify various types of market financial risks.
5. To ensure compliance, develop clear disclosure and transparency guidelines for financial institutions, as well as sound enforcement practices.

📌 About Financial Inclusion:

1. It ensures that individuals and businesses have access to useful and affordable financial products and services that meet their needs, such as transactions, payments, savings, credit, and insurance, and that they are delivered in a responsible and sustainable manner.
2. it is linked to several of the United Nation's 17 Sustainable Development Goals.

▶ **5.14 RESERVE BANK OF INDIA – DIGITAL PAYMENTS INDEX (RBI-DPI)**

1. It has increased significantly (between March 2021 and March 2022), indicating the fast development and entry of digital payments throughout the country.
2. It was launched on January 1, 2021, with a base period of March 2018.

📌 What is the Digital Payments Index?

1. It is a semi-annual (published twice a year) index published by the RBI to measure the extent of payment digitization across the country.
2. The index is comprised of 5 broad parameters, each with sub-parameters comprised of various measurable indicators.

📌 The following are the major 5 broad parameters:

1. Payment Enablers- 25%
2. Payment Infrastructure: Demand-side factors (10%)
3. Payment Infrastructure: Supply-side factors (15%)
4. Payment Performance- (45%)
5. Consumer Centricity- (5%)

📌 Payments: Vision 2025:

1. It expands on the Payments Vision 2019–21 goals.
2. It has provided detailed instructions and a plan for the development of India's payment and settlement systems.



3. Every user should have access to secure, quick, convenient, affordable, and fast e-payment options.
4. Theme: E-Payments for Everyone, Everywhere, Every time (4Es).

5.15 3RD EDITION OF INDIA INNOVATION INDEX (III) 2021

Why in news?

NITI Aayog has released the **India Innovation index** for the year **2022**.

📌 About India Innovation Index:

1. It is a comprehensive tool for the evaluation and development of the country's innovation ecosystem.
2. It ranks the states and the union territories on their innovation performance to build healthy competition amongst them.
3. It is prepared by NITI Aayog and the Institute for Competitiveness.
4. This is the third edition which highlights the scope of innovation analysis in the country by drawing on the framework of the Global Innovation Index.
5. The number of indicators has increased from 36 (in the India Innovation Index 2020) to 66 (in the India Innovation Index 2021).
6. The indicators are now distributed across 16 sub-pillars, which, in turn, form seven key pillars.
7. The current edition uses the Global Innovation Index (GII) framework, which consists of 7 pillars.
8. Five "Enabler" pillars measure the inputs (factors that are essential for promoting innovation), and 2 "Performance" pillars measure the output (represent a country's advantages in knowledge creation and competitiveness).
9. According to the World Intellectual Property Organization's (WIPO) GII 2021, India was ranked 46th

📌 About WIPO:

1. It is one of the United Nations' oldest specialised agencies (UN).
2. It was established in 1967 "to encourage creative activity and to promote intellectual property protection throughout the world".
3. It currently oversees the administration of 26 international treaties.
4. It is based in Geneva, Switzerland.
5. Every year on April 26th, "World Intellectual Property Day" is observed.

📌 Key Highlights

1. Karnataka followed by Telangana, Haryana, Maharashtra and Tamil Nadu has topped the rank in NITI Aayog's India Innovation Index for the third time under the 'Major States category'.
2. Manipur secured the lead in the Northeast and Hill States category,



3. While Chandigarh was the top performer in the Union Territories and City States category.
4. Chhattisgarh, Odisha, Bihar and Gujarat were at the bottom of the index.
5. Low private participation in R&D, with Investment in the nation falling from 0.8% of GDP in 2008-09 to 0.7% in 2017-18.

📌 Suggestions by NITI Aayog

1. India's average innovation score is low, despite the country's ambitious goal of ranking among the top 25 nations in the Global Innovation Index.
2. The report recommended actions such as increasing.
 - a. It is encouraging private sector participation in R&D and closing the gap between industry demand and production through its education systems.
 - b. Countries that spend less on GDERD (Gross Domestic Expenditure on Research and Development) fail to retain their human capital in the long run, according to the report, and the ability to innovate is dependent on human capital quality and India's GDERD as a percentage of GDP is around 0.7%.

📌 Significance of the Index:

1. The India Innovation Index contributes to the Government's effort to monitor select global indices through the Global Indices to drive Reform and Growth (GIRG) mechanism.
2. Provide policymakers and other key stakeholders with a comprehensive assessment of India's innovation ecosystem's research is exploratory.
3. Identify and address the challenges that economies face in maximising their innovative capacities.

▶ 5.16 TECHNICAL RECESSION

Why in news?

1. There are signs of economic weakness and inflation emerging in markets such as the United States, raising the possibility of a recession.
2. The United States is expected to avoid a technical recession.

📌 What is a Technical Recession?

When the overall output of goods and services, as measured by GDP, falls from 1 quarter to the next, the economy is said to be in a technical recession. Cessions

Technical Recession in India

1. The Indian economy was in a technical recession during the 1st and 2nd quarters of 2020-21, as a result of the spread and effects of the Coronavirus pandemic. However, by the October-December 2020-21 quarter, the economy had begun to recover and India had exited the technical recession phase.



2. In the April-June and July-September quarters, GDP fell by 24.4% and 7.3%, respectively, indicating a technical recession in the aftermath of the Covid-19 pandemic.
3. GDP increased by 0.4% in the third quarter, supporting the Indian economy to exit the technical recession. Electricity, agriculture, crude oil, natural gas, refinery products, and other major sectors all contributed to the increased GDP.
4. The unemployment ratio reached an all-time high in 2020, affecting the stock market as well.
5. Mining, trade, hotels, transportation, communication and broadcasting services, and public administration services were among the sectors that continued to experience GDP declines in the 3rd quarter of FY 2020-21.
6. Prime Minister Narendra Modi's launch of the Atmanirbhar Bharat Campaign in 2020 provided a significant boost to the Indian economy.
7. The Production-Linked Incentive (PLI) scheme will also help the economy recover quickly.

✎ Difference between Recession and Technical Recession:

Recession	Technical Recession
1. If the recessionary phase lasts for an extended period of time, the economy is said to be in recession.	1.If the GDP declines for two successive quarters, the economy is said to be in a technical recession.
2. It lasts for a longer time period.	2.It only lasts for a short time.
3. To reach the state of recession, all aspects of the economy, including GDP, employment, and so on, are measured.	3.Only GDP is used to assess technical recession.

✎ Important Economic Concepts Regarding Technical Recession:

1. GDP (Gross Domestic Product) is the sum of an economy's final prices for goods and services produced during a specific time period. It is evaluated on a regular basis to account for changes in production structure, relative prices, and better economic activity recording.
2. Expansion and Recession Phases - When GDP increases from one quarter to the next, the economy is said to be in an expansionary phase. When GDP falls from 1 phase to the next, the economy is said to be in a recessionary phase.
3. Depression - An economic depression is a major and long-lasting period of negative economic growth.

▶ 5.16 WINDFALL TAX

Why in News?

In July 2022, Central govt. has cut Windfall tax on crude oil producers and removed petrol exports levy.



What is a Windfall tax ?

1. Its a tax imposed by the government on a company.
2. It is levied(charged) on an unexpectedly high profit of a company.
3. It is only levied in public interest.

Why the government has reduced the windfall tax recently on crude oil producers?

1. It was reduced to control rising domestic oil price.
2. Another reason is to meet domestic need for petrol.

5.16 LANDLORD PORT MODEL

Why in News?

In July 2022, Jawaharlal Nehru Port (JNP) became the first 100% Landlord port of India.

What is Landlord Port Model ?

1. It's a port model in which both public and private sector are engaged in the overall management of the port.
2. Under this, the port authority acts as regulatory body (just like landlord) while port operations (especially cargo handling) are done by the private companies.
3. It aims at decentralizing decision making (decisions taken at various levels) and to include professionalism in the governance of the ports.

About JNP:

1. Located at Navi Mumbai (Maharashtra).
2. Established in 1989.
3. It's a container handling port and is the 2nd largest container handling port of India after Mundra port (Kutch, Gujarat).

5.17 COMMITTEE FOR MINIMUM SUPPORT PRICE (MSP), NATURAL FARMING AND CROP DIVERSIFICATION

In July 2022, Government of India has formed a committee under former union agriculture secretary Sanjay Agrawal to fulfil the government's commitments that were made during repeal(cancellation) of farm laws in 2021.

What are the objectives of the committee ?

1. To make MSP more effective and transparent.
2. Suggest measures to promote O budget natural farming (it's the method of farming where the cost of farming is O) and crop diversification (growing different different crops) to fulfil the changing food security requirements of the country.



What is MSP system ?

1. MSP for a crop is the price at which government is supposed to procure/buy that crop from farmers if the market price falls below it.
2. During each cropping season, Union government on recommendations of Commission for Agricultural Costs and Prices (CACPC) announces MSP for 23 crops.

What are the present challenges under the MSP system ?

1. Very high focus on paddy and wheat, thus leading to overproduction of these crops.
2. It benefits to a limited number of farmers. only about 2.2% farmers benefit from the MSP system.
3. Benefits of the system is not equal across the country. It is highly towards Haryana and Punjab.
4. Delays in setting up of procurement centres (those who buys the crops from the farmers).
5. The current MSP system has no relation with the prices in the domestic market.

5.18 11TH AGRICULTURE CENSUS (2021-22)

In July 2022, Union Minister of Agriculture and Farmers Welfare launched 11th Agriculture Census (2021-22).

About India's Agricultural Census:

1. It was conducted for the 1st time in 1970-71 .
2. It is conducted with the help of states and union territories as a part of World Census of Agriculture programme of Food and Agriculture Organisation (FAO) .
3. It is conducted after every 5 years.
4. It is the main source of information on a variety of indicators, including the nature of landholdings, their size, distribution by class, land-use statistics, Cropping patterns etc.
5. Census provides the basis for the development of policies on agriculture.
6. During the 11th census, for the 1st time, data collection will be done through smartphones and tablets .
7. Many states in India have digitized land records and surveys, which will further help in the collection of agricultural census data.

As per the 10th Agricultural census (2015-16):

1. Small and marginal farmers (having less than 2 hectares of land) accounted for almost 86 % of all the farmers of the country but they owned just 47% of the crop area.
2. Landholdings are distributed in a very unequal manner.

World Census of Agriculture (WCA):

1. First WCA was done in 1930 by the International Institute of Agriculture.



2. After 1950, the Food and Agriculture Organization (FAO) of the United Nations has been preparing the WCA.

▶ 5.19 MANURE MANAGEMENT

Why in News ?

In July 2022, Ministry of Fisheries, Animal Husbandry and Dairying launched National Dairy Development Board's (NDDB's) subsidiary company with the name MRIDA Limited for manure management.

📌 About NDDB's MRIDA:

1. NDDB's MRIDA Limited is a fully owned subsidiary company of NDDB.
2. It will work for the manure management across the country.
3. It was established as a public limited company under the Companies Act, 2013.
4. It will set up a manure value chain (to increase the value of manure), biogas based CNG and energy generation for dairy plants.

📌 What is Manure Management (MM):

1. It is the process in which animal excretion waste is captured, stored, treated and used.
2. Manure is a cheap and valuable fertilizer which contains varying amount of nutrients, such as nitrogen, phosphorus, micronutrients and organic matter.

📌 What are the benefits of the Manure Management?

1. Efficient MM contributes in increasing the productive economic life cycle of milch animals (cow, buffalo etc) beyond milking.
2. If MM is done properly then it have the potential to generate biogas equivalent to 50 percent of India's present LPG consumption.
3. India also runs a GobarDhan scheme with the objective to generate energy from cattle waste and it can also contribute in increasing livelihoods of dairy farmers by giving them extra source of incomes.

▶ 5.20 Millets

In July 2022, NITI Aayog and the World Food Programme (WFP) has launched the 'Mapping and Exchange of Good Practices' initiative for millets.

📌 About Millets:

1. Millets are coarse grains and is a good source of protein, fibre, vitamins and minerals.
2. 3 major millet crops currently grown in India are jowar (sorghum), bajra (pearl millet) and ragi (finger millet).
3. Major producers of millets in India are: Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.



4. Food and Agriculture Organisation (FAO) has accepted India's proposal to declare 2023 as the "International Year of Millets".

About FAO:

1. It's a specialized agency of the United Nations.
2. It was established in 1945 and has its headquarters in Rome, Italy.
3. It was founded with a goal to end Hunger in the entire world.

5.21 OPIUM MARKET

Why in News ?

For the 1st time, central government has allowed a private company (Bajaj Healthcare) to manufacture concentrated poppy straw (CPS) alkaloids and active pharmaceutical ingredients (APIs) from poppy capsules of Opium.

About Opium

1. Its a natural substance obtained from poppy seeds.
2. Alkaloids obtained from opium are used to make cough syrups, cancer medicines and pain management medicines.
3. Only 12 countries including India allows its cultivation legally for medicinal use.
4. It is also used for smoking, drinking or eating as pills.
5. Due to the fear of its illegal trade and risk of addiction, opium cultivation is strictly regulated in India.
6. At present, cultivation and processing of opium is controlled by the provisions of Narcotic Drugs and Psychotropic Substances (NDPS) Act and Rules.
7. CPS is a mechanised system under which entire opium crop is cut by machines and then transferred to factories for alkaloid extraction(taken out from it).

What is the Significance of private players involvement in Opium Industry ?

1. It can lead to increase in domestic production of various things which are made from opium such as morphine and codeine.
2. It can lead to coming of modern technology in the opium industry.
3. It can lead to reduction of opium imports.

5.22 BHARATMALA PARIYOJANA PROGRAMME (BMP)

Why in News?

As per Investment Information and Credit Rating Agency (ICRA), government's road connectivity projects under BMP is expected to be completed by the year 2028.

1. Initially objective was to complete this project by the year 2022.
2. Presently, only 60% of the total highways that are going to be constructed under BMP has been awarded to contractors and only 23% of the projects under BMP are completed as on March 2022.



✎ What is BMP Programme?

1. It was announced in the year 2015 and was launched under the Ministry of Road Transport and Highways.
2. Objective of this project was to construct new Highways and repair the existing ones throughout the India.
3. Under phase-1, it involves development of 34,800 kms highway by 2022.
4. Phase 2 aims to develop around 48,000 kms of road network across India by 2024.

✎ What was the need for the BMP in India?

1. To improve efficiency of existing road corridors through development of multimodal logistic parks.
2. To improve connectivity in the North East India.
3. To reduce Time and cost of Transportation.
4. To focus on use of technology and scientific planning.



6.

ENVIRONMENT

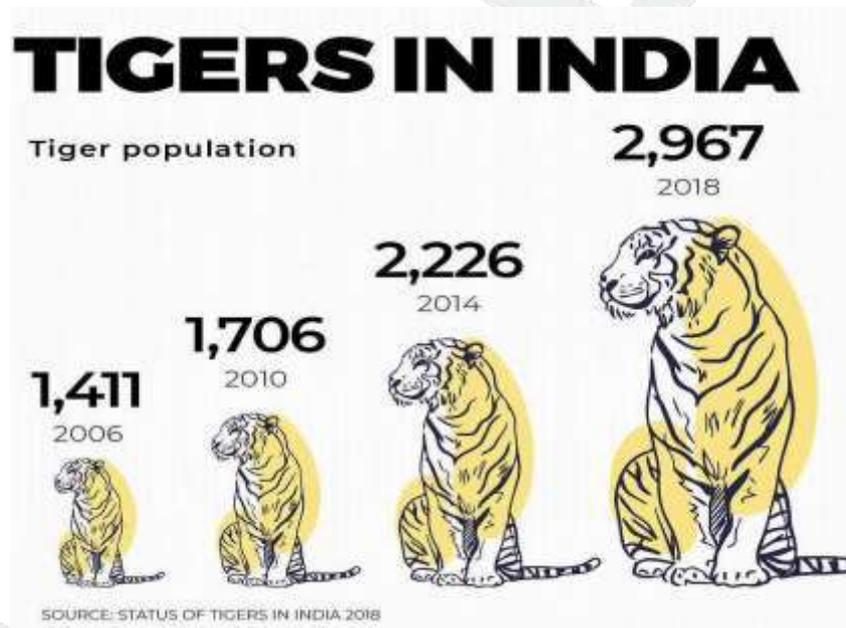
6.1 PROJECT TIGER

Why in news?

In year 2023, Project Tiger will complete its 50 years.

What is Project tiger?

1. It was **Launched in 1973** to protect Tiger.
2. It is a **Centrally Sponsored Scheme** of Ministry of Environment, Forests and Climate Change (MoEFCC).
3. It **provides central assistance** to tiger range States for in-situ conservation of tigers in designated tiger reserves.
4. It was **initially launched in 9 Tiger reserves (TRs) in different states** of India.



About Indian Tiger:

1. It is also known as **Royal Bengal Tiger (Panthera Tigris)**.
2. It is **native** (originally belong to) **to India**.
3. It is a **flagship species** of India and has been declared as the **National Animal of India**.
4. Flagship species are selected to act as an ambassador or symbol for a specific habitat, issue or environmental cause.
5. Tiger **Conservation Status** at International Union for Conservation of Nature (IUCN) is **Endangered**.
6. It comes under **schedule I of Wildlife (Protection) Act, 1972** which gives it the **highest level of protection**.
7. Indian tiger is **included in the Appendix I** of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).



🦁 Tiger and its Habitat:

1. India has the **largest number of tigers** in the world i.e., more than **70% of world's tigers lives here**.
2. **Smaller population** of tigers also lives in **Bangladesh, Nepal, and Bhutan** and can be seen in the areas of China and Burma.
3. In India, they can be found in **high mountains, mangrove swamps, tall grasslands, dry and moist deciduous forests**.
4. **Madhya Pradesh** has the **highest number of tigers** followed by Karnataka and Uttarakhand.

🦁 Why it is important to conserve tiger:

1. Indian tiger is an **Umbrella species**, means its conservation will **ensure conservation of other wild animals and forest species**.
2. It is also a **Keystone species** which means **tiger population has a large effect on its natural environment** and hence its conservation is important.

🦁 Characteristic feature of Tiger:

1. Tiger is **solitary** (who lives alone) and **territorial** (with their own specific territory) animal.
2. The **territory of an adult male** consists of **2 to 7 females**.
3. Tiger **stripes are unique** similarly as human fingerprints.

🦁 Challenges in tiger conservation efforts?

1. There is **lack of trust and cooperation** between the **forest department and the local communities** leading to poor implementation of conservation efforts.
2. **Local forest officials** have **low capacity to conduct surveillance and monitoring** of tiger population which reduce the accuracy of the surveys.
3. According to **All-India Tiger Estimation (2018)** **nearly 35%** of tigers in India are **found outside tiger reserves** which makes it difficult to protect them.

🦁 Issues related to rehabilitation (setting up their habitats again) and relocation of population of tiger habitats:

1. There is **lack of financial resources** in some tiger reserves which **makes them unable** to handle activities like restoration of habitats.
2. Factors like habitat loss, human settlements and agricultural lands around protected areas have **increased human-tiger conflict** in recent years, which **makes rehabilitation operations difficult**.
 - **For example**, density of tigers in the Sunderbans have reached the carrying capacity, leading to increase in human-wildlife conflict.
3. Small populations of tigers in certain areas leads to **increase in the incidents of genetic variants** due to inbreeding and isolation.
 - **For example**, **pseudo-melanistic or black tigers** are **2 genetic disorders** that are found in Similipal tiger reserve in Odisha due to genetic effects of isolation.
4. There are other challenges also such as **Illegal hunting & trade of wildlife etc.**



▶ 6.2 IMPACT OF CLIMATE CHANGE ON CHILDREN

Why in news?

In July 2022, The United Nations Children's Fund (UNICEF), the International Organization for Migration (IOM), have launched 'Guiding Principles for Children on the Move in the Context of Climate Change'.

- [International Organization for Migration (IOM) is the apex (major) intergovernmental organization in the field of migration which works with governmental, intergovernmental and non-governmental partners]
- [United Nations International Children's Emergency Fund (UNICEF), officially known as United Nations Children's Fund, is an agency working for the development of children worldwide.]

🦋 General Problems faced by Children displaced due to climate change:

1. Problem of **maltreatment** (poor treatment) in the form of **abuse**.
2. **Child trafficking**
3. **Exploitation and discrimination**, etc.
4. **Lose access to essential services**, such as health, nutrition, education etc.
5. **Poor social protection** against child labour, child marriage etc.
6. **Other issues - separation from family, poor living conditions, racism** etc.

🦋 How does Climate Change impact children?

1. Existing climate policies are lacking in addressing children's specific risks and finding their solutions.
2. Due to **lack of essential services** like health, education etc. **children get trapped into a vicious cycle** (cycle that continues) **of backwardness**.
3. There are **many occurrences of extreme weather events** like tsunamis floods etc, that increases the emergencies, during which children **need special care which is not provided**.
4. **Young age deficiencies** may result in a **lifetime of lost opportunity** for migrated children.
 - **For example, Poor education** as a result of constant migration will badly impact a child's ability to learn and **affects their future careers**.

Way Forward:

1. Governments along with local govts. and civil society groups should **formulate and implement better child-related migration policies**.
2. Govts. Should conduct **regular assessment programmes to Understand children's vulnerability** to climate change.
3. **Children should be educated about their rights** through proper guidance **so that they can exercise their rights**.
4. Govts. should **aware people** about changing environment and its impact on children **through climate education**.
5. **Common people** should be **encouraged to participate in** national, regional and international level **decision-making** through **surveys and polls** etc.



6. There should be **adequate (proper) financial investment to adapt** the essential services such as **good health, education, nutrition** etc.
7. A **child friendly justice system** should be there which can help ensuring that the **needs and conditions of migrant children** are considered.
8. There should be **better implementation of existing policies and initiatives** for better climate so that extreme impacts of climate change can be reduced.

▶ 6.3 OFFSHORE WIND ENERGY

Why in News?

In July 2022, Ministry of New & Renewable Energy (MNRE) released **Strategy Paper for establishment of Offshore Wind Energy Projects**.

✎ About Strategy Paper for Establishment of Offshore Wind Energy Projects:

1. It **identifies 16 zones** in total, **off the shore** (not at shore but somewhere between the sea) of Gujarat and Tamil Nadu for **harnessing offshore wind energy**.
2. It **suggests incentives to companies in the offshore wind energy space**.
3. It proposes **3 models for the development of offshore wind farms** in the country.

✎ India and its offshore energy potential:

1. **Out of the total potential of Indian offshore Energy, more than 95% are located in 7 states:**
 - Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu.
2. **According to the National Institute of Wind Energy (NIWE) approx. 36 GW of offshore wind energy potential exists at Gujarat and 35 GW at Tamil Nadu only.**

✎ What are benefits of the offshore wind energy:

1. **Wind speed at offshore is generally faster** than on land, which will **increase the energy generation**.
2. **Wind direction at offshore doesn't change much** which makes **offshore turbines more consistent** in power generation.
3. **Offshore turbines don't have obstacles** as there on the land and hence **less disturbance in the wind flow**.
4. **Offshore turbines can be built taller** which means they can **produce more electricity**.

✎ Challenges in installing offshore wind farms:

1. It is **very costly to create the infrastructure for offshore wind farms** especially over deeper waters.
2. **Sea waves often damage turbines**, hence there is **need of higher maintenance**.
3. Offshore wind farms are **difficult to access**, resulting into **poor maintenance and observance**.
4. The **noises from turbines impact badly** the animals and other **marine life**.

Way Forward:



1. India should import better technology from the different countries of world for better efficiency of wind farms.
2. Govt. should encourage private participation through PPP model (public private partnership model), so that the financial resources will be available.
3. There should be incentives on use of clean energy so that better energy market can be maintained for DISCOMs.

▶ 6.4 GROUNDWATER POLLUTION

Why in news?

In July 2022, World Bank launched a report titled 'Seeing the Invisible: A Strategic Report on Groundwater Quality'.

✎ Key findings of the report:

1. Globally, about 150 million people have been exposed to dangerous levels of arsenic in drinking water.
2. Fluoride in drinking water puts an approx. 200 million people at risk of developing crippling skeletal fluorosis (A disease caused by fluoride contamination).

✎ Sources of Groundwater contamination can be classified into 3 Categories:

1. **Geogenic (naturally occurring) contaminants:**
 - These occur due to geochemical reaction naturally occurring inside/outside the earth such as Volcanic activities.
 - These Includes arsenic, fluoride, uranium, selenium, manganese etc.
2. **Anthropogenic contaminants:**

✎ These occur from various reason caused by men such as:

- Pathogens (harmful bacteria) from improper sanitation practices.
 - Agricultural pollutants like nitrate fertilizers and pesticides.
 - Industrial chemicals leakages to natural resources.
3. **Contaminants due to Salinity:**

Due to sea water interference and overexploitation of groundwater etc. usable water becomes saline and loaded with various types of harmful salts.

✎ Constraints in prevention of groundwater contamination:

1. Large number of people especially in rural areas, are dependent on groundwater, which may expose them to geogenic contaminants (harmful salts and minerals found under earth dissolved on water).
2. Pollution control norms and guidelines are not implemented properly leading to chemical mismanagement in industries and poor waste disposal.
3. There are various technological and financial challenges in collecting, analysing and managing data related to groundwater monitoring.
4. Poor Identification of "non-point" sources of pollution such as nitrate pollution from agriculture sector.

[Non-point sources are those source whose origin can't be measured properly]



Steps taken to ensure groundwater quality in India:

1. **Central Ground Water Board (CGWB)** was established to ensure regular regularly **monitoring** of ground water quality on a regional scale.
2. Govt. of India has launched the **Atal Bhujal Yojana** which is a **Central Sector Scheme**, for **sustainable ground water management**.
3. **Bureau of Indian Standards (BIS)** has given a **list of contaminants in drinking water**.
4. **Control of industrial pollution** has put under the provision of **Water (Prevention and Control of Pollution) Act, 1974** for better regulation.

Way Forward:

1. There should be **proper implementation of strengthening measures** like a **well-formulated legislative framework** ensure better output of the functionaries. (Bodies related)
2. **An adequate budget** is very important for **financial availability required to implement the projects, completing surveys etc.**
3. **Skilled workforce and relevant expertise** such as **geoengineers and technicians** should be there, so that **accuracy of data and observations can be maintained**.
4. **Policies and goals set by Govt. should be time bound to ensure accountability of bodies/agencies related.**
5. **Conceptual hydrogeological model and more such techniques should be used for better understanding** of the processes that control the movement of pollutants in underground water.
6. There **should be identifying suitable wells** through sampling to laboratory analysis and data processing.
7. **Reducing natural contamination through regular surveys** and better policies.
8. **Adopting groundwater management best practices from the world** will be very beneficial like **mandatory groundwater monitoring**.
9. **Locals should be involved** to get help in **participatory management of groundwater**.
10. Govt. should ensure the **maintenance of an active register of new chemicals** (to enable the required response)

6.5 ARIDITY ANOMALY OUTLOOK INDEX: IMD

Why in News?

In July 2022, **Indian Meteorological Department (IMD)** released **The Aridity Anomaly Outlook (AAO) Index**, which says at least **85% of districts face arid conditions across India**.

What is Aridity Anomaly?

Aridity is **water stress** that plants feel **in the absence of water or moisture**. Whereas, **anomaly** is a term used to indicate the **deviation (difference) from the normal** or standard value.

What is the Aridity Anomaly Outlook Index?

1. The index monitors **agricultural drought**, a situation where **rainfall and soil moisture are insufficient to support healthy crop growth**.
2. It is developed by the **India Meteorological Department (IMD)**.



🔗 About IMD:

1. It was **established in 1875**.
2. It is an agency of the **Ministry of Earth Sciences** of the Government of India.
3. It is the **main agency responsible for meteorological observations, weather forecasting and seismology** (branch of science which deals with earthquakes).
4. **Its headquarters is in New Delhi**

🔗 Characteristics of the Index:

1. This is a **real time** (which gives information of present time) index.
2. The Aridity Index (AI) is calculated **for 1 week or 2 weeks periods** and for each period aridity anomaly is calculated.
3. **Negative (-)** values show a **surplus of moisture** while **positive (+)** values show **moisture stress**.

🔗 Parameters used for index:

1. **Actual evapotranspiration:** It is the quantity of water that is actually removed from a surface by evaporation and transpiration.
2. **Potential evapotranspiration** is the maximum quantity of water that can be removed from a surface by evaporation and transpiration.
3. **These parameters** require temperature, wind and solar radiation values to get the required information about moisture content.

🔗 Significance of the Index:

1. **Impacts of drought in agriculture** can be better analysed with information of index.
2. In the **tropics where there wet and dry seasons** are part of the climate cycle it will **help in analysing** the requirements of water for crop growth.
3. Both **winter and summer cropping seasons can be evaluated using this method**.

🔗 What are the Findings?

1. While **660 districts** are facing different degrees of aridity as **mild, moderate and severe**, only **63 districts out of 756 are non-arid**.
2. **196 districts** are suffering from '**severe**' degree of aridity and **65 of these are in Uttar Pradesh (highest) followed by Bihar (2nd highest)**.
3. Other districts facing '**severe arid**' conditions are in **Jharkhand, Haryana, Madhya Pradesh, Delhi, Telangana, Maharashtra, Andhra Pradesh, Jammu and Kashmir, Punjab, West Bengal, Rajasthan, Karnataka and Tamil Nadu**.
4. The SPI (Standardised Precipitation Index) also **highlights a persisting rainfall deficit in these areas in the last 6 months**.
5. Arid conditions have **impacted the ongoing kharif sowing**, as the area sown under kharif crops as of July, 2022, was reduced by **13.26 million hectares as compared to previous year (2021)**.

🔗 What is the Standardised Precipitation Index (SPI)?



1. This is also an index used to **characterize meteorological drought on different timescales.**
2. On **short timescales**, the SPI is **closely related to soil moisture**, while at **longer timescales**, the SPI can be **related to groundwater and reservoir storage.**
3. It is managed by the **Indian Institute of Technology, Gandhinagar (IIT-G).**

▶ 6.6 COASTAL EROSION AND INDIA

Why in News?

Ministry of Earth Science (MoES) recently informed that **34% of coastline is under varying degrees of erosion for past 28 years.**

🔗 What is Coastal erosion?

1. It is the **long-term removal of sediment and rocks from the coastline due to natural activities like wave action, tides, currents, wind-driven water etc.**
2. **According to a report 'National Assessment of Shoreline Changes along Indian Coast' published by National Centre for Coastal Research (NCCR), human activities like construction of coastal structures, beach sand mining, offshore dredging etc. have also activated coastal erosion.**

🔗 About National Centre for Coastal Research (NCCR):

1. It is an attached office of Ministry of Earth Sciences (MoES)
2. It is monitoring shoreline erosion since 1990.
3. NCCR uses techniques like geographic information system (GIS) and remote sensing data etc.
4. From 1990 to 2018 a total of 6907.18 km long coastline of India has been analysed.

🔗 Status of Coastal Erosion in India:

1. **26% is of the total coastline is very unstable and vulnerable to erosion whereas 40% is in stable state.**
2. **Most of the soil erosion has been seen in West Bengal followed by Kerala, Tamil Nadu, and Gujarat.**

🔗 Impacts of coastal erosion:

1. **Loss of fertile land and Agri culturable land.**
2. Coastal erosion **Impacts the plants and animal life** as it **disturbs their habitat** such as marshes, mangroves etc.
3. It **Impacts the tourism by decreasing the aesthetic (Scenic) beauty of a place.**
4. coastal habitats are famous for their fishing culture but **this erosion affects the fishing industry badly and hence the economic condition of the people.**

▶ 6.7 GREEN ENERGY OPEN ACCESS RULES

Why in News?

In July 2022, Ministry of Power released 'Green Energy Open Access' Rules.



Objective:

The Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 aims to accelerate our renewable energy programmes.

Salient features of the rules:

1. **Green Open Access** (access to green power or clean power) is **allowed to any consumer now**.
2. The **limit of Open Access Transaction** has been **reduced from 1 MW to 100 kW** so that **small consumers can purchase renewable power**.
3. **Consumers can demand supply of Green Power** from DISCOMs (power distribution companies).
4. **Commercial and Industrial consumers can purchase green power on voluntarily basis**.
5. **Consumers will be given Green Certificates** if they consume green power.
6. There shall be a **uniform Renewable Purchase Obligation (RPO)**, on all agencies in **area of a distribution licensees**.
7. **Green Hydrogen and Green Ammonia** are included to fulfil RPO.

Significance of these Rules:

1. These rules will **ensure the access to affordable, sustainable, and green energy for all**.
2. It will **Promote generation, purchase and consumption of green energy**, including energy from **Waste-to Energy plants**.
3. These rules will **provide a simple procedure for Open access to green power**.

▶ 6.8 INTERGOVERNMENTAL SCIENCE-POLICY PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES (IPBES) ASSESSMENT REPORT FOR SUSTAINABLE USE OF WILD SPECIES

Why in news?

In July 2022, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) released report on the 'Sustainable use of Wild Species'.

About IPBES:

1. It was established in 2012.
2. IPBES is an **independent intergovernmental body working to strengthen science and policy interface** (where science and policies work together).
3. It works for **conservation and sustainable use of biodiversity** along with **developmental growth**.
4. **IPBES has its Secretariat located in Bonn, Germany**.
5. It is **not a United Nations body**.
6. **United Nations Environment Programme (UNEP) provides secretariat (administrative) services to IPBES**.
7. **IPBES has 137 member countries including India**.
8. **All the members of the United Nations are eligible for IPBES membership**.



Challenges to sustainable use of wild species:

1. Climate change can reduce the ability of mammals to successfully use the natural resources, especially those species that are less able to adapt to changing ecological conditions.
2. Ecological habitats of wild species get destroyed, due to increasing developmental projects in forest areas.
3. The unsustainable harvest and hunting of plant and animal species from the wild is pushing species towards extinction.
4. For example, 72% species are threatened by overexploitation (hunting, fishing or logging of forests)
5. Increased agriculture activities (production of food, fibre and fuel crops, etc.) has led to loss of wild species.
6. Unsustainable tourism is resulting in increased pollution, habitat loss, and more pressure on endangered species, thus impacting the biodiversity.
7. Global trade in wild species has expanded both in volume and value showing increasing threat to wildlife.

Recommendations of the report:

1. Effective regulation across supply chain of permitted wildlife trade is required as unsustainable trade of wild species generally increases pressures on wild species.
2. Report has suggested that scientists and indigenous peoples should come together to learn from each other and strengthen the sustainable use of wild species.
3. There should be behavioural change which is important to ensure sustainable use and enhance the sustainability of the use of wild species.
4. Technological innovations should be there to increase the efficiency and reduce waste of natural forests.

6.9 5 WETLANDS GET INTERNATIONAL IMPORTANCE TAG

Why in News?

In July 2022, 5 more wetlands of India have found place in list of Ramsar sites, bringing the number of such sites to 54.

What is wetland?

1. Wetlands are ecosystems that consists water, seasonally or permanently.
2. They include mangroves, marshes, rivers, lakes, deltas, floodplains and rice-fields, coral reefs, marine areas.
3. Marine areas not deeper than 6 metres at low tide come under wetlands.
4. They occupy 6% of the Earth's land surface.
5. 40% of all plant and animal species live in wetlands.

What are these New Ramsar Sites?

1. Karikili Bird Sanctuary (Tamil Nadu):

- It is spread over a 5-kilometre broad belt.
- Many rare species are found in Karikili such as grey heron, open-billed stork, darter, spoonbill, white Ibis, night herons, grebes, grey pelican etc.



2. Pallikaranai Marsh Reserve Forest (Tamil Nadu):

- It is One of the last remaining natural wetlands.
- Pallikaranai is one of the few natural coastal aquatic habitats that qualify as a wetland in India.

3. Pichavaram Mangrove (Tamil Nadu):

- It is One of the last mangrove forests in the country.
- It has an island of huge capacity of water covered with mangrove forests.

4. Sakhya Sagar (Madhya Pradesh):

- It was created from the Manier river in 1918.
- Sakhya Sagar is located near Madhav National Park.

5. Pala Wetland in Mizoram (Mizoram):

- It falls under the Indo-Burma biodiversity hotspot and is therefore rich in animal and plant species.
- The lake is a major component of the Palak Wildlife Sanctuary and provides a great support to its biodiversity.

What is Ramsar Recognition?

1. A Ramsar site is a wetland of international importance under the Ramsar Convention.
2. Ramsar Convention is also known as the 'Convention on Wetlands'.
3. The Convention was signed in 1971 at city of Ramsar in Iran.
4. Ramsar recognition is the identification of wetlands around the world, which are of international importance, especially if they provide habitat to waterfowl (about 180 species of birds).
5. There is international interest in conservation of such wetlands and a sensible use of their resources.

▶ 6.10 RIGHT TO REPAIR MOVEMENT

Why in News?

In July 2022, Department of Consumer Affairs (DCA) has set up a committee on the Right to Repair.

Key sectors identified for this framework:

1. Farming Equipment
2. Mobile Phones/ Tablets
3. Consumer Durables (like devices we use at our homes)
4. Automobiles & Automobile Equipments

About the movement:

1. This movement needs the manufacturers to make quality parts available in the markets so that if consumers want then they can get their device repaired from independent shops.



2. It is **not the first of its type** movement rather it has been **recognised in many countries including the US, UK and European Union (EU)**.

Need of Right to Repair movement:

1. It is important to **increase the business of small repair shops**.
2. Repair movement is important because of the culture of '**planned obsolescence**' i.e., **devices are designed in a way that they need to be replaced after a specific time**.

6.11 OZONE HOLE

Why in News?

In July 2022, Scientists warned that the **all -season ozone hole in the lower stratosphere above the tropics have increased 7 times as compared to that of above the Antarctica**.

[All-season ozone hole is defined as an area of ozone loss which is larger than 25% compared with the undisturbed atmosphere.]

About Ozone Layer:

1. It is a **form of oxygen having chemical formula O₃**.
2. **Most of the ozone found at a height between 10 to 40 km in atmosphere. This region (between 10 to 40 km high from earth's surface) is called the stratosphere and it**
3. **Stratosphere contains about 90% of all the ozone in the atmosphere.**

Types of Ozone:

1. Good Ozone:

- It **occurs naturally in the Earth's upper atmosphere (Stratosphere) and works as a protective layer that protect us from the harmful ultraviolet rays (UV) of sun.**
- This "**good**" ozone is facing **constant harm by man-made chemicals** which are known as **Ozone-Depleting Substances (ODS)**.
- ODS consists of **chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons, methyl bromide, carbon tetrachloride, and methyl chloroform etc.**

2. Bad Ozone:

- It is found in the **Earth's lower atmosphere (troposphere)**.
- Bad Ozone is **also known as Ground level Ozone**.
- It is **formed when pollutants emitted** by cars, power plants, industrial boilers, refineries, chemical plants, and other sources **react chemically in the presence of sunlight**.
- It is a **harmful air pollutant**.

Initiatives related to protection of Ozone Layer:

1. In 1985, The **Vienna Convention on Protection of Ozone Layer** came for **research and better monitoring of human activities that affects the ozone layer**.
2. In 1987, the **Montreal Protocol** was adopted to **protect the ozone layer by eliminating the use of chemicals which cause harm to Ozone layer**.



3. In 2016, **Kigali Agreement** was adopted to **prepare a path to achieve an 80% reduction in HFCs** (HFCs are not ozone depleting gases but have high global warming potential)

6.12 ASIA PACIFIC SUSTAINABILITY INDEX REPORT 2021

Why in New?

In July 2022, Knight Frank- a Global property consultant has released Asia Pacific Sustainability Index Report 2021.

About the Report:

1. It has rated **36 cities in total**.
2. **Rating is done on the basis of urbanisation pressure, climate risk, carbon emissions and government initiatives.**
3. India is the **6th largest country in Asia Pacific in terms of the total amount of green bonds (GB) issued in 2021.**
4. [GB is a type of fixed-income instrument that is reserved to fund finances especially for climate and environmental projects.]
5. **4 Indian cities** got their name in **top 20 sustainable cities.**
 - Bengaluru
 - Delhi
 - Hyderabad
 - Mumbai

6.13 GLOBAL PLATFORM FOR DISASTER RISK REDUCTION 2022 (GP2022)

Why in News?

In July 2022, the United Nations Disaster Risk Reduction (UNDRR) organised 7th session of the GP2022 in Bali, Indonesia.

[GP2022 is a **global forum to discuss the progress on the implementation of the Sendai Framework** for Disaster Risk Reduction.]

What is Sendai Framework?

1. It aims to guide the **multi hazard management of disaster risk in development** at all levels as well as within and across all sectors.
2. It was **adopted in 2015 at the 3rd United Nations World Conference on Disaster Risk Reduction (UNDRR), in Sendai, Miyagi, Japan.**
3. It works to **reduce the risk of disasters caused by natural and man-made hazards including technological, chemical and environmental etc.**

About UNDRR:

1. It was **created in December 1999.**
2. It works to **ensure the efficiency of International Strategies for Disaster Reduction.**
3. It aims for **better implementation of Sendai Framework.**
4. UNDRR **brings both government and non-government organisation together to work on the disaster risk reduction policies.**



Keyfindings of GP2022:

1. There is need of an **output-oriented approach** to disaster risk reduction (DRR).
2. **DRR must be the main objective while forming policies** of development, finance, legislation etc.
3. A **participatory approach is important** as people are affected differently by disasters.
4. **DRR and climate change policies should work together** with great cooperation with **common objective of reducing vulnerability and enhancing capacities of societies.**

6.14 RADIOACTIVE DATING AND CARBON-14 DATING

Why in News?

In July 2022, burning of fossil fuels has reduced the amount of radioactive carbon-14 in the atmospheric Carbon-dioxide which affects the Carbon-14 dating badly.

What is Carbon-14?

1. It is written as Carbon-14 (^{14}C).
2. Carbon-14 is a radioactive isotope of carbon.
3. It is found in organic materials.
4. Carbon-14 is formed in nature by the interaction of neutrons with nitrogen-14 in the atmosphere.
5. During the production of Carbon-14 cosmic rays emits in the atmosphere.
6. It is used in the radiocarbon dating method started by Willard Libby and in 1949.

What is Carbon-14 Dating?

1. It is also called radiocarbon dating.
2. It is a method of measuring age.
3. Carbon Dating measures age of the object by measuring the decay to nitrogen of radiocarbon present on the object.

On which principle does the Carbon-14 Dating works?

1. All living things absorb carbon, including radioactive carbon-14.
2. When the living bodies dies, they stop absorbing, but the radioactive carbon present in them continues to decay.
3. Carbon Dating measure this decay of radioactive carbons and tells the age of the object.

6.15 LARGEST FLOATING SOLAR PROJECT OF INDIA

Why in News?

NTPC has said it has made India's largest floating solar power project at Ramagundam Telangana.

About National Thermal Power Corporation Limited (NTPC)

1. It is a central Public Sector Undertaking (PSU).
2. NTPC comes under the Ministry of Power. It is India's largest energy corporation established in 1975.



3. It aims to **provide power and related solutions in an economical and environment-friendly way.**
4. NTPC is also **promoting usage of green hydrogen** in sectors like **transportation energy, chemical, fertilizer, steel etc.**
5. It is **located in New Delhi.**

📌 About the Project:

1. It is **situated in Ramagundam, Telangana.**
2. **Capacity** of this floating project is **100 MW.**
3. The project consists of **advanced technology** and **environment friendly features.**

📌 Other Solar Energy Initiatives:

1. **National Solar Mission:** It is one of the key missions of govt. of India for **better solar power generations.**
2. **INDC's target:** It targets installing **100 GW grid-connected solar power plants by the year 2022.**
[India's Intended Nationally Determined Contributions (INDCs) target to **reduce the emission intensity of its GDP by 33 to 35% from 2005 level by 2030.**]
3. **International Solar Alliance (ISA):** It was launched by **Prime Minister of India** and the **President of France in 2015** for better use of solar energy.
4. **One Sun One World One Grid (OSOWOG):** It is cross-border power grid plan **which aims to transfer solar power generated in one region to feed the electricity demands of others.**
5. **Government Schemes:** Govt. Has initiated many schemes such as Solar Park Scheme, Canal bank & Canal top Scheme, Bundling Scheme, **Grid Connected Solar Rooftop Scheme** etc.

▶ 6.16 MONARCH BUTTERFLY IN RED LIST OF IUCN FOR THE FIRST TIME

Why in News?

In July 2022, The International Union for the Conservation of Nature (IUCN) added the **migrating monarch butterfly** to its **red list of threatened species** and **categorized it as "endangered"**.

📌 About Monarch Butterfly:

1. It is **one of the most common butterflies in the world.**
2. It's a sub-species of the Danaus plexippus butterfly.
3. This butterfly **act as an essential pollinator** (which spread the pollens of plants and help in spreading their production).
4. It provides **several ecosystem services** such as **maintaining the global food web.**
5. Monarch Butterflies **take the longest migration route** of any insect species known to science in **North America.**
6. **These are also found in countries like Australia, Hawaii, and India.**
7. Their population has **declined 23-72% over the last decade.**





🦅 About IUCN Red List:

1. It is a **List by the IUCN** organisation which **define the extinction risk** of different species.
2. There are **9 categories depending upon the risk** a species is facing:
 - **NE** (Not Evaluated) to **EX** (Extinct).
 - **Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) species** are considered to be threatened with extinction.

🦅 What are the threats this species is facing?

1. **Loss of habitat**
2. **Increased use of herbicides** (to control herbs) and **pesticides** (to control pest attacks) for agriculture.
3. **Climate change**

▶ 6.17 LIGHT-MANTLED ALBATROSS SEEN AT TAMIL NADU COAST (FOR THE FIRST TIME IN ASIA)

Why in News?

In July 2022, a Bird named **Light-mantled Albatross** has been seen for the first time in Asia at Rameswaram coast (Tamil Nadu) in India.

🦅 What is Light- mantled Albatross?

1. It is a **seabird native to the Antarctic seas**.
2. This **seabird lives near a circumpolar distribution in the Southern Ocean and over the cold Antarctic**.
3. Its IUCN status is **Near Threatened**.



[IUCN is International Union of Conservation of Nature works for conservation of wildlife and nature]

▶ 6.18 SNOW LEOPARD CONSERVATION AND ITS IMPORTANCE FOR ECOSYSTEM STABILITY

Why in News?

In July 2022, Zoological Survey of India (ZSI) in its study says that snow leopard regulates the populations of its herbivores prey species like Siberian ibex and blue sheep.

- Hence, a **long-term absence of snow leopards** could cause depletion of vegetation cover.

🦅 About Snow Leopard:

1. **Panthera uncia** is its scientific name.
2. They act as an **indicator of the health of the mountain ecosystem** where they live.
3. Snow Leopards are **found in the mountainous regions of central and southern Asia**.

🦅 Their geographical range consists:



1. **Western Himalayas: Jammu and Kashmir, Himachal Pradesh.**
2. **Eastern Himalayas: Uttarakhand and Sikkim and Arunachal Pradesh.**
3. **Hamis National Park (biggest National Park in India) is known as Snow Leopard capital of the world.**

🦁 Protection Status of Snow Leopard:

1. It is listed as **Vulnerable** on the IUCN-World Conservation Union's Red List of the **Threatened Species**.
2. Snow Leopard is listed among **Appendix I on the Convention on International Trade of Endangered Species (CITES)**.
3. **Trading of animal body parts (fur, bones and meat) is illegal.**
4. It is listed in **Schedule I of the Indian Wildlife (Protection) Act 1972.**
(An act on conservation of wildlife including plants and animals.)
5. It is listed in the **Convention on Migratory Species (CMS)** which affords the **highest conservation status to the species, both globally and in India.**
6. It is also **protected by several national laws in its range countries.**

🦁 Conservation Efforts by India:

1. India has identified the snow leopard as a **flagship species**.
2. India is also party to the **Global Snow Leopard and Ecosystem Protection (GSLEP) Programme since 2013.**
(An international conservation programme for both the ecosystem and snow leopard)
3. **Govt. of India** has launched the **Himal Sanrakshak (2020)**, which is a **community volunteer programme**, to protect snow leopards.
4. **First National Protocol on snow leopard assessment** was also launched in 2019. This Assessment has been **very useful for monitoring populations**.
5. India has included Snow Leopard in the list of **21 critically endangered species for the recovery programme** of the **Ministry of Environment Forest & Climate Change (MoEFCC)**.
6. **Breeding Programme is also started for Snow Leopard conservation at Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal.**

▶ 6.19 GREAT INDIAN BUSTARD

Why in News?

Great Indian Bustard (GIB) count fell below 100.

About the GIB:

1. It is the **State bird of Rajasthan**,
2. GIB is considered as India's most critically endangered bird.
3. It acts as **flagship grassland species and represents the health of the grassland ecology**.
4. IUCN Status of GIB is **Critically Endangered**.
5. It comes under **Schedule I of Wildlife Protection Act, 1972** with **highest protection status**.
6. **Maximum number of GIB are found in Rajasthan and Gujarat**



✎ Its Important Sites are:

1. **Desert National Park Sanctuary** (Rajasthan),
2. **Naliya** (Gujarat),
3. **Warora** (Maharashtra) and **Bellary** (Karnataka)



✎ Threats to GIB:

1. **Hunting**
2. **Habitat erosion**
3. **greening projects** (developmental projects) that transform arid grasslands to wooded areas.
4. **Predators preying** on the eggs. (egg destruction)

✎ Steps towards GIB Conservation:

1. It comes under the list for **Recovery Programme under Integrated Development of Wildlife Habitats (IDWH)** of the Ministry of Environment and Forests.
2. It is **Included under National Wildlife Action Plan (2002-2016)** for better conservation.

▶ 6.20 UNITED NATIONS OCEAN CONFERENCE (UNOC)

Why in News?

In July 2022, the 2nd UNOC ended with the Lisbon Declaration.

What is Lisbon Declaration?

It is a **political declaration** entitled 'Our Ocean, Our Future: call for action'.

✎ About UNOC:

1. It is Conference by **United Nations (UN)** for sustainable use of Ocean and their Conservation.
2. UNOC supports the implementation of **SDG 14 (Life Below Water)**.
[Sustainable Development Goals (SDGs) are goals decided by United Nations for sustainable use of resources]
3. Conference is **co-hosted** by Kenya and Portugal at Lisbon.
4. **First time it was held in 2017** at UN Headquarters in New York.
5. More than **150 countries** agreed to adopt the innovative actions to address ocean emergency.
6. This is **in line with the United Nations Decade of Ocean Science for Sustainable Development (2021- 2030)**.

✎ Key Highlights:

1. Conference **highlighted the importance of Paris Agreement (2015) and Glasgow Climate Pact** to help ensure the health, productivity, sustainable use of the ocean.
2. States **have made voluntary commitments to protect at least 30% of the global ocean**.

✎ Following was among the Agenda of the Conference:

1. Push for **deep-sea mining of rare metals** needed for the development of electric vehicle battery construction.



2. The **digging and gauging of the ocean floor** by machines can alter or destroy deep-sea habitats which **needs to be monitored properly**.
3. **Carbon sequestration should be focused** to boost the ocean's capacity to soak up CO₂.
4. A **"Blue Deal"** was promoted to ensure the **sustainable use of ocean resources and economic growth**.
5. It includes **global trade, investment and innovation to create a sustainable and resilient ocean economy**.
6. There is **no legal framework which covers the high seas** which is need of the time.
7. Some activists refer to them as the **largest unregulated area on the planet**.
8. **Threats to the oceans were discussed** include **global warming, pollution (including plastic pollution), acidification, marine Heatwaves_etc**.

▶ 6.21 INDIA FAVOURS UNGA RESOLUTION ON RIGHT TO HEALTHY ENVIRONMENT

Why in News?

In July 2022, India voted in favour of UNGA resolution that recognizes the right to a clean, healthy and sustainable environment as a human right.

🔗 About United Nations General Assembly (UNGA):

1. It is **one of the 6 principal organs of the United Nations (UN)**.
2. It is the main **policymaking, and representative organ of the UN**.

🔗 About UNGA Resolution:

1. It says that **right to a healthy environment has a strong relation to existing and upcoming international law**.
2. According to the resolution **full implementation of multilateral environmental agreements and initiatives is very important to achieve healthy environment**.
3. It is **not legally binding**.
4. It was **not included in the Universal Declaration of Human Rights, 1948**.

🔗 History of Healthy environmental as a right:

1. **50 years ago, the United Nations Conference on Environment in Stockholm (1972) came up with a resolution placing environmental issues at global forefront**.
2. **In 2021, the UN Human Rights Council in Geneva passed a resolution recognising access to a healthy and sustainable environment as a universal right**.

🔗 Significance of resolution:

1. It will **Help in protection of environment and reducing environmental injustices**.
2. The resolution will **empower people in vulnerable situations, including environmental human rights defenders, children, youth, women and indigenous people**.
3. This type of resolution is **important for triple planetary crisis**.
4. [**Triple Planetary Crisis is simultaneous threat of climate change, biodiversity loss and pollution**]
5. It will also **help States to get their environmental and human rights goals and commitments**.



7. SECURITY

▶ 7.1 INTEGRATED THEATRE COMMANDS

Why in news?

1. A committee appointed by the Defence Ministry has recommended **creating 3 integrated theatre commands of the Indian armed forces.**
2. Northern, western and southern, instead of the 17 in place currently.

✎ What is an integrated theatre command?

1. An integrated theatre command sees a unified command of the three Services, under a single commander, for geographical theatres where security is a concern.
2. The leader of such a force will be able to quickly and efficiently utilise **the resources of the IAF, Army, and Navy.**
3. The integrated theatre commander will be free to train, equip, and exercise his command without being held responsible to specific Services in order to make his command a unified fighting force capable of achieving predetermined goals.
4. The logistical resources required to support the theatre commander's operations will also be available to him, minimising the need for him to search for anything while operations are in progress.
5. This is in contrast to India's current model of service-specific commands, where the Army, Air Force, and Navy each have their own commands spread out across the nation.
6. In times of war, each Service Chief is expected to direct his Service's operations through separate commands while they work together.
7. Three integrated theatre commands should be established: one in the north for the China border, one in the west for the Pakistan border, and one in the south for the maritime role, according to the committee, which was led by **Lt Gen DB Shekatkar (retired).**

✎ How is "jointness" different from integrated commands?

1. The three Services are said to be "joined," which means that while they each pursue and develop independently in their own fields, they work together to organise their military operations.
2. Integrated commands, on the other hand, combine different service identities to create a unified and composite whole.
3. For the purpose of carrying out operational plans, it suggests integrating the three Services at various levels and placing them under one commander.

✎ Advantages:

1. Improved troop values provided in the available battlespace for operational effectiveness.
2. For specialized education and conducting drills, the troops' administrative needs and training needs can be better understood.



3. In a situation resembling a high-intensity war, quick troop movement is possible.
4. The distribution of military equipment may be theatre-specific and lead to resource optimization.
5. Unified command will eliminate redundant hierarchies and enable quick and accurate decision-making.

Experience in Other Countries:

1. Several of the world's major militaries have implemented integrated theatre commands. The People's Liberation Army of China has 5 theatre commands.
2. The United States Armed Forces have 11 unified commands, seven of which are **geographical and 4 of which are functional**.
3. The Changing Dynamics of National Security, which now includes cyber, automation, and other new challenges, cannot be solved by a disjointed general and MoD labyrinth, but rather by a clear and robust structure capable of responding quickly to an emergent situation.

How many commands does India have currently?

1. **There are 17 commands in the Indian military at the moment.**
2. Each of the Army's seven commands—the Northern, Eastern, Southern, Western, Central, South-Western, and Army Training Command (ARTRAC)—has seven subordinate commands.
3. Western, Eastern, Southern, South-western, Central, Training, and Maintenance are available to the Air Force.
4. Western, Eastern, and Southern commands make up the Navy.
5. Each command is led by a military officer with the rank of four stars.
6. It's interesting to note that none of these 17 commands share a station or have adjacent operational responsibility areas.
7. There are also two tri-service commands, Strategic Forces Command (SFC) and Andaman and Nicobar Command (ANC), whose leadership alternates between officers from the three services.

How do the 17 commands coordinate during war?

1. The Chiefs of Staff Committee (COSC), which is presided over by the senior-most Service Chief who is designated as Chairman, COSC, is expected to carry out operations coordination at the level of Service Headquarters.
2. He is expected to serve in the capacities of Chairman, COSC, and Chief of his Service simultaneously.
3. The COSC generally operates under the general agreement principle, which makes decision-making regarding jointness very challenging.

India has an integrated theatre command only in ANC.

1. The SFC, the other tri-service command, is in charge of the delivery and operational control of the country's nuclear assets.
2. It was established in 2003, but because it has no specific geographic responsibility or role, it is classified as an integrated functional command rather than an integrated theatre command.



3. Other integrated functional commands, such as cyber, aerospace, and Special Operations, have been requested, but none have been approved by the government.

Challenges in creation of Theatre Commands:

1. Confusion over who will report to whom within the tri-services and joint theatre command configurations, and who will have operational command over personnel and machinery, service chiefs or theatre commanders.
2. **Inter-services competition:** When each service is zealously guarding its own assets and contending for a larger share of the defence budget and influence, it may prove difficult to achieve unity among the services.
3. **Existing mismatch between military assets:** For instance, the Air Force only has 31 operational battle groups compared to a taking appropriate steps of 42, which makes it challenging to station assets permanently in a given command.
4. There are worries that integration might maintain the army's dominance and give it more operational control because the Army has historically been the most visible of the three services.
5. **India's limited history:** With integrated command structures, there may be a lot of mid-course adjustments needed, and issues would need to be timely found and fixed, which would slow the integration process.

What is the way forward?

1. Based on experience from the US, Russia, and China, it is clear that a political decision to establish integrated theatre commands must be made before it can be carried out by the armed forces.
2. Appointing a **Chief of Defence Staff or Permanent Chairman, COSC**, is a necessary step in the creation of integrated theatre commands.
3. **The GoM first suggested this in 2001**, but it has not yet been put into practise.

7.2 PREVENTION OF MONEY LAUNDERING ACT (PMLA):

What is money laundering?

Like laundry clean clothes, money laundering cleans black money into white through artificial channel.

What is PMLA?

- a. The PMLA is a Parliamentary Act that was **passed in 2002 and came into force in 2005**.
- b. If somebody is found guilty of money laundering, his property earned through laundered money can be taken away under this act.

Objectives of PML Act:

1. To deal with any other issue related to money laundering in India.
2. To prevent and control money laundering.
3. To confiscate and seize the property obtained from the laundered money.
4. The Act gives ED the authority to carry out money laundering investigations.



Key features of PMLA, 2002:

1. According to the act, anyone who engages in any process or activity involving the proceeds of crime, such as concealing, possessing, acquiring, or using them, or projecting or claiming them to be innocent person property, is guilty of the crime of money laundering.
2. **Establishes Adjudicating Authority:** It outlines the requirements for the creation of a three-member Adjudicating Authority to handle issues relating to the Act's provisions for property attachment and confiscation.
3. **A setup Appellate Tribunal:** This body, chosen by the Center, is in charge of hearing appeals against any decision made by the act's adjudicating authority or another authority.
4. The Central Government has established special courts in a number of States and UTs to handle the trial of money laundering offences.
5. **Indian Financial Intelligence Unit:** It was established in 2004 to serve as the central national agency in charge of get together, processing, analysing, and distributing data pertaining to questionable financial transactions. o The Economic Intelligence Council (EIC), which is overseen by the finance minister, receives direct reports from this independent body.
6. The person accused of money laundering has the burden of showing that the claimed proceeds of the crime are real resources.

SC Observation:

1. The Supreme Court upheld the 2002 amendments to the Prevention of Money Laundering Act (PMLA).
2. The Supreme Court issued its decision in response to a challenge to the PMLA, 2002 amendments made by the Finance Act in 2019.
3. The PMLA was amended to give the Enforcement Directorate (ED) broad powers of summons, arrest, and raids, as well as to make bail provisions more difficult to enforce while shifting the burden of proof of innocence from the prosecution to the accused.

Vijay Madanlal Choudhary Vs Union of India case:

1. Money-laundering is one of the heinous crimes that not only affects the social and economic fabric of the nation, but also promotes other heinous offences such as terrorism, NDPS Act violations, and so on.
2. The PMLA Act's strict bail conditions are legal and not random.
3. The 'twin conditions' for bail laid down in Section 45 of the PMLA: that the court must be satisfied that there are reasonable grounds for believing that the accused is not guilty of an offence;
4. The ED officials who are investigating money laundering cases under the PMLA Act are not "police officers." As a result, statements recorded by ED authorities under Section 50 of the PMLA Act while investigating proceeds of crime are not subject to Article 20(3) (right against self-incrimination).
5. There is no need to formally register an ECIR before initiating penal action or prosecution against a person involved in a process or activity involving proceeds of crime under the PMLA, 2002.



6. The ECIR (Enforcement Case Information Report) is not the same as the First Information Report (FIR) because it is an internal ED document.
7. Section 5 of the PMLA, which deals with temporary property attachment, was upheld by the SC.
8. As the question of the scope of Money Bills is being separately considered by a seven-judge Bench, the court did not consider arguments based on the fact that some of the amendments were introduced as Money Bills.

Recent PMLA amendments:

1. Developed the concept of "corresponding law" to connect provisions of Indian law with laws of other countries.
2. Adds the concept of a 'reporting entity,' which could be a bank, financial institution, intermediary, or a person engaged in a specific business or profession.
3. Grants the Director the authority to request transaction records or any additional information needed for an investigation.
4. The term proceeds of crime include not only property derived from the scheduled offence, but also any other property derived or obtained while engaging in any criminal activity related to the scheduled offence.

Issues in implementation of PMLA:

1. **Laws are being redistributed:** To combat the threat of money laundering, particularly from the drug trade, the PMLA, **a detailed judicial law, was passed.** Currently, a large number of the offences listed in the schedule of the Act have nothing to do with either organised crime or drugs.
2. **Low conviction rate:** The ED conducted over 3,010 raids between 2014 and 2016, but only 23 of them led to convictions, for a reported conviction rate of just 0.5%.
3. **Confusion:** Article 20(1) of the constitution disallows the application of criminal law posthumously, so it is unclear whether the "Explanation" that was added to clarify the meaning of "proceeds of crime" will have a significant impact.

Way forward

1. **Precedents:** Once the offences have been determined, an ECIR report should be prepared and given to the accused to inform him of one of his crimes.
2. **Operational effectiveness:** The use of the PMLA should be limited and not used as a tool of harassment; rather, the primary focus should be on increasing the criminal history, which is currently near 0.5%.
3. **Investigate Scheduled Offenses:** The presence of "**scheduled offences**" from 30 different statutes has broadened the scope of the law, diverting the ED's attention away from serious crimes. The list of "scheduled offences" should be reviewed and pruned to ensure a more focused focus on serious crimes.
4. **Terminology clarity:** Some aspects of the legal position require clarification, such as the scope of the amended definition of "proceeds of crime" and the safeguards to be followed when statements are recorded by investigating officers.



7.3 INDIGENOUS STEALTH DRONE

Why in news?

1. By reaching an altitude of 25,000 feet and an endurance of 10 hours, India's indigenous Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) development programme (Rustom-II) achieved a significant benchmark.
2. The Rustom-2 last year successfully flew for eight hours at a height of 16,000 feet despite some development delays.

✎ Long-Distance Medium-Altitude (MALE):

It refers to an Unmanned Aerial Vehicle (UAV) that flies for extended periods of time, typically 24 to 48 hours, at an altitude of 10,000 to 30,000 feet.

✎ Concerning Rustom-2:

1. The Aeronautical Development Establishment (ADE) in Bengaluru designed and developed it, with production partners Hindustan Aeronautics Ltd and Bharat Electronics Limited.
2. Tapas-BH is another name for it (Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon 201).
3. The UAV is named after **Rustom Damania**, a former professor at Bengaluru's Indian Institute of Science (IISc).
4. He supervises the National Aeronautical Laboratories' light canard research aircraft (LCRA) programme in the 1980s.
5. The LCRA platform and R&D serve as the foundation for DRDO ADE's eventual Rustom-II design.

✎ Features:

1. It is being developed to perform surveillance and reconnaissance (ISR) roles, and it is capable of carrying various combinations of advanced payload and auto-landing, among other things.
2. It is intended to acquire real-time, high-quality images and signal intelligence at medium to long ranges from concerns areas.
3. It is technologically equivalent to current UAVs and will be less expensive than imported ones.
4. Importance and necessity
5. High endurance UAVs are a priority requirement for the armed forces, particularly in the Eastern Ladakh standoff with China.
6. The armed forces rely heavily on Israeli Searcher and Heron drones and require more of these unmanned aerial vehicles.

✎ Other Related occurrences:

1. The Delhi-based DRDO's Centre for Fire, Explosive, and Environment Safety (CFEES) developed a structural firefighting suit. The 2.8 kg suit is made up of several layers, with the outer layer being the most durable, protecting against heat, flames, water, chemicals, as well as cuts and abrasion.



2. By forming air cushions and microclimate chambers, the inner thermal layer provides insulation.
3. **For the 1st time in the country**, such a suit has been developed, and it meets European standards while lowering import costs.
4. A special "fire entry suit" that can fire without significant fire for 150 seconds is also being developed.
5. The goal is to reduce the weight of the suit, which is currently 25 kg, as well as the import content.
6. The Services have begun a major upgrade of the Heron UAVs.
7. A separate US proposal for **30-armed Military drones, 10 for each Service, is also in the works.**

✎ Unmanned aerial vehicles (UAVs):

1. Unmanned aerial vehicles (UAVs), also known as drones, are aircraft that are either controlled from the ground by 'pilots' or, increasingly, fly autonomously based on a pre-programmed mission.
2. Unmanned Aircraft are classified into three types: Remotely Piloted Aircraft, Autonomous Aircraft, and Model Aircraft.

▶ 7.4 INS VIKRANT

1. INS Vikrant, **India's 1st indigenous aircraft carrier (IAC-1)**, has completed the fourth and final phase of sea trials.
2. Designed By the **Indian Navy's Directorate of Naval Design (DND)**, the carrier was built at Cochin Shipyard Limited, a public sector shipyard under the Ministry of Shipping.
3. It is a great example in the nation's quest for '**Atma Nirbhar Bharat**' and '**Make in India Initiative**,' with more than 76% indigenous content."
4. It is the largest and most complex warship ever designed and built in India.
5. INS Vikrant will support the navy's lone carrier, the INS Vikramaditya, which was obtained from Russia in 2013.

Note

1. India has had aircraft carriers in the past, but they were built by the British or the Russians.
2. **INS Vikramaditya (Soviet-Russian warship 'Admiral Gorshkov')** is the Navy's only aircraft carrier at the moment.
3. The INS Vikrant and INS Viraat were originally built by the British.

Features

1. It has a top speed of about 28 knots, a boating speed of about 18 knots, and a range of about 7,500 nautical miles.
2. It has over 2,300 compartments designed for a crew of around 1,700 people, including specialised cabins for female officers, and can accommodate a variety of fixed-wing and rotary aircraft.

✎ Importance of an aircraft carrier:



1. Improves the Navy's ability to travel far from home shore.
2. A "blue water" navy, capable of projecting a nation's strength and power across the high seas, is required.
3. Critical in India's bid to be a net security provider in the Indian Ocean region, where it competes with China.
4. Support for a conventional conflict against Pakistan, including strikes on Pakistani naval assets and land bases.

▶ 7.5 MARITIME EXERCISE BETWEEN INDIA AND JAPAN

Why in news?

On July 23, in the Andaman Sea, the Indian Navy and the Japan Maritime Self Defense Force conducted a maritime partnership exercise (MPX).

🔗 What does a bilateral maritime exercise mean?

1. The two countries have been conducting routine exercises in IOR to strengthen their maritime cooperation.
2. The exercises were created to improve interconnectivity while also simplifying communication and seamanship procedures.
3. As part of this exercise, the two ships are collaborating to ensure safe and secure international trade in the Indian Ocean region.

🔗 The Andaman Sea:

1. It is a coastline in the northeastern Indian Ocean, bounded by the Malay Peninsula's west coast as well as the coastlines of Myanmar and Thailand along the Gulf of Martaban.
2. The Andaman and Nicobar Islands are located between the Andaman Sea and the Bay of Bengal to the east.
3. The southern end is marked by Breueh Island, which is located north of Sumatra, and the Strait of Malacca is located further southeast.
4. The sea has traditionally been used for fishing and product transportation between coastal nations, and its coral reefs and islands are popular tourist destinations.
5. Japan and India's bilateral ties

🔗 Historical Background:

1. The long-standing friendship between India and Japan is based on spiritual affinities as well as strong cultural and civilizational ties.
2. **The Todaiji Temple in Nara** was the site of India's known direct contact with Japan, where an Indian monk of Bodhisena performed the holy communion of Lord Buddha in the year 752 AD.
3. In modern times, notable Indians associated with Japan include Swami Vivekananda, Nobel laureate Rabindranath Tagore, businessman JRD Tata, freedom fighter Netaji Subhash Chandra Bose, and Justice Radha Binod Pal.
4. The Japan-India Association, founded in 1903, is Japan's oldest international friendship organisation.
5. **On April 28, 1952**, India and Japan established **political relations**.



Recent Interactions:

- a. In December 2015, the prime ministers of Japan and India agreed on a comprehensive, broad-based, and action-oriented cooperation that reflects a significant convergence of their **long-term political, economic, and strategic goals**.
- b. The "Japan and India Vision 2025 Special Strategic and Global Partnership Working Together for Peace and Prosperity of the Indo-Pacific Region and the World" joint declaration was released as a compass for the **"new era in Japan-India relations."**

Cooperation in security:

- a. The two leaders issued the "Joint Declaration on Security Cooperation between Japan and India" in October 2008, during Prime Minister Manmohan Singh's visit to Japan.
- b. Other frameworks for security and defence discussions between Japan and India include the **Foreign and Defense Ministerial Meeting ("2+2" meeting)**, the yearly Defense Ministerial Interaction, and the **Coast Guard-to-Coast Guard dialogue**. **The first "2+2" meeting was held in November 2019 in New Delhi.**
- c. The governments of Japan and the Republic of India signed the **"Acquisition and Cross-Servicing Agreement" (ACSA)**, also known as the "Agreement Concerning Reciprocal Provision of Supplies and Services between the Self-Defense Forces of Japan and the Indian Armed Forces," on September 9th, 2020. ACSA went into effect on July 11, 2021.

Trade Relations:

- a. India was Japan's 12th-largest trading partner in 2020, while China was Japan's 18th-largest trading partner.
- b. Furthermore, Japan's direct investment in India has increased, and Japan was India's **4th largest investor in FY2020**.
- c. At recent summit meetings, 2 leaders praised the conclusion of a USD 75 billion Bilateral Swap Arrangement, the start of a comprehensive Japan-India Digital Partnership, and other agreements and initiatives.

Financial Assistance:

- a. Over the last few decades, India has received the vast majority of Japanese ODA loans.
- b. The Delhi Metro is one of the best examples of Japanese cooperation with the use of ODA.
- c. Japan continues to support the strategic connection that connects South Asia to Southeast Asia through the interaction of the **"Act East"** policy and the **"Partnership for Quality Infrastructure."**
- d. Furthermore, Japan and India agreed to develop a high-speed rail system in India by introducing the **Shinkansen**, their bilateral relationship's central piece project.

Bilateral Treaties and Agreements:

- a. Treaty of Peace (1952)



- b. Agreement for Air Service (1956)
- c. Cultural Agreement (1957)
- d. Agreement of Commerce (1958)
- e. Convention for the Avoidance of Double Taxation (1960)
- f. Agreement on Cooperation in the field of Science and Technology (1985)
- g. Japan-India Comprehensive Economic Partnership Agreement (2011)
- h. Agreement between the Government of Japan and the Government of the Republic of India Concerning the Transfer of Defence Equipment and Technology (2015)
- i. Agreement between the Government of Japan and the Government of the Republic of India Concerning Security Measures for the Protection of Classified Military Information (2015)
- j. Agreement between Japan and the Republic of India on Social Security (2016)
- k. Agreement between the Government of Japan and the Government of the Republic of India for Cooperation in the Peaceful Uses of Nuclear Energy (2017)
- l. Agreement between the Government of Japan and the Government of the Republic of India Concerning Reciprocal Provision of Supplies and Services between the Self-Defense Forces of Japan and the Indian Armed Forces (2021)



8. CULTURE

8.1 WHITE ONION

Why in News?

A white onion from Alibagh (Maharashtra) has been designated as a Geographic Indication (GI).

1. White onions are grown in Alibagh only using traditional methods and genuine seeds, and farmers characterize the unique taste, flavour, and shape to the region's geoclimatic conditions.

About GI tag

1. It registered as collective and certification marks are generally protected for **10-year periods that can be renewed.**
2. In India, GI tags are governed by the **GI of Goods (Registration and Protection) Act, 1999.**
3. It is a sign that identifies a product as coming from a specific location, giving that product a unique quality, reputation, or other feature. It is not necessary to file an application under the GI Act to protect the GI.
4. **It is differing from a trademark.**
5. GI informs consumers that a product comes from a **specific location and has unique qualities due to that location**, whereas a **trade mark is used to distinguish a company's goods or services from those of its competitors.**
6. GI may be used by all producers or traders whose products originate in that location and share typical characteristics, whereas a trade mark **grants its owners the right to prevent** others from using the trade mark.
7. GI right allows those who have the right to use the indication to prevent others from using it if their product does not meet the applicable standards.

8.2 MANGARH HILL

Why in news?

The government is considering making Mangarh Hillock in Banswara District (Rajasthan), a national monument in honour of tribal freedom fighters who died.

1. It's located on the Gujarat-Rajasthan border. Mangarh Dham is the name given to the holy location.

About Mangarh massacre:

1. In 1913, a group of Bhils led by social reformer Govind Guru (a local tribal) and Punja revolted against British rule.
2. Govind Guru started the 'Bhagat movement' among Bhils, urging them to practice vegetarianism and avoid all intoxicants.
3. In November 1913, hundreds of tribals gathered for a peaceful meeting at the Mangarh hillock, when British forces surrounded and shot them dead.

(This event is also known as Mini Jallianwala Bagh Massacre.)



The **Archaeological Survey of India (ASI)** considers sites for declaration as national importance under the **Ancient Monuments and Archaeological Sites and Remains (AMASR) Act of 1958**, if they meet certain criteria.

There are currently over 3650 ancient monuments, archaeological sites, and remains of national significance.

Declaration criteria:

1. The ancient monument or archaeological site must be of archaeological, or artistic significance.
2. It qualifies under the definition provisions of 'least 100 years old'.
3. Mentioned in the **ASAMR Act of 1958**.

8.3 ADDITIONAL INFORMATION

About ASI:

1. It is an **attached agency of the Ministry of Culture of the Government of India**.
2. It carries out **archaeological research and conservation, as well as protects and preserves the country's ancient monuments and archaeological sites**.
3. **ASI regulates all archaeological activities in the country under the provisions of the Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act) of 1958.**
4. It was founded **in 1861 by James Cunningham**, a British Army engineer with a great interest in Indian archaeology.
5. Archaeological undertakings began much earlier, in the 18th century, with Sir William Jones and a group of antiquarians forming the Asiatic Society in 1784.
6. Alexander Cunningham is known as the "**Father of Indian Archaeology**".
7. The **AMASR Act of 1958 made it a statutory body**.
8. The **ASI is led by a Director-General and has its headquarters in New Delhi**.
9. Over 3500 protected monuments and archaeological sites of National Importance are protected and preserved by ASI.

ASI publications:

- a. Ancient India
- b. Epigraphia Indica
- c. Indian Archaeology

Some Other Related News:

1. The **National Monuments Authority has also recommended that the following 2 sites be designated as Monuments of National Importance.**
2. **The Sankalp Bhumi Banyan tree campus in Vadodara**, where Dr. Ambedkar made the decision to abolish untouchability on September 23, 1917.
3. Dr. Ambedkar received his **primary education at Pratap Rao Bhosle High School in Satara, Maharashtra.**



8.4 ALLURI SITARAMA RAJU

Why in news?

Recently, PM launched year-long 125th birth anniversary celebration of legendary freedom fighter Alluri Sitarama Raju in Bhimavaram, Andhra Pradesh by unveiling his bronze statue.

About Alluri Sitarama Raju:

1. Alluri Sitarama Raju was born in 1897 in Mogallu, which is located in west Godavari district of Madras Presidency.
2. He is also known as 'Manyam Veerudu' (hero of the forest).
3. Sitarama Raju's reach was not only limited to the Rampa region, he established contacts across India.
4. He was the member of the 'Calcutta Secret Society' where he learnt to make bombs and he attended a meeting in Chittagong where other revolutionaries came together.
5. He arranged for arms and ammunitions from across India for his fight in the Rampa region.
6. Sitarama Raju was instrumental in spreading Non-cooperation movement in the hill region (Rampa and Gudem).
7. He was a brilliant tactician who studied geographical contours. He used his knowledge of the land to engage in guerrilla warfare with the British.

About Rampa Rebellion (August 1922 – May 1924):

1. The Rampa Revolt, also referred to as the 'Manyam Uprising', was a tribal rebellion.
2. Factors that led to the revolt are:
 - A. The Muttadars who were the actual rulers of the region had their socio-economic status challenged as they were forcefully brought under the colonial structure.
 - B. The sudden declaration of Podu cultivation (shifting cultivation) as illegal under the new colonial regime.
 - C. The colonial government has taken the rights of the local people to collect the 'Minor Forest Produce'.
 - D. The tribals were forcefully made to engage in Vetti, that is, free or unpaid labour. Alluri Sitarama Raju told them that they were the sole owners of the forest produce and prepared them to fight against the oppressive Madras Forest Act, 1882.

8.5 KANAGANAHALLI

Why in News?

The Archaeological Survey of India (ASI) plans to protect an ancient Buddhist site near Kanaganahalli in Karnataka (part of the Sannati site).

1. Sannati is a small village on the bank of Bhima River.
2. The stupa is thought to have been built in 3 stages: Maurya period, Early Satavahana period, and Later Satavahana (3rd Century B.C. to 3rd Century A.D.).
3. Here, the only surviving image of Ashoka is a stone portrayal inscribed with 'Raya Asoko' in Brahmi.



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