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Current Affairs (CONSOLIDATION)

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Drishti, 641, First Floor, Dr. Mukherjee Nagar, Delhi-110009

Phone: 87501 87501, WhatsApp: 81303 92355

Email: engweb@groupdrishti.com

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Polity and Governance

Highlights

- Quality of Free Legal Aid
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- Consumer Protection Act, 2019

Quality of Free Legal Aid

The National Law University, Delhi (NLU) in a report titled '**Quality of Legal Representation: An Empirical Analysis of Free Legal Aid Services in India**' has revealed that people do not have faith over the services of **legal aid counsel (LAC)** under the free legal aid services.

- A majority of the people who are entitled to the free legal aid system see the service as an option only when they cannot afford a private lawyer.

Legal Services Authorities (LSA) Act, 1987

- It was enacted to provide free and competent legal services to the poor and paved the way for the constitution of **National Legal Service Authority (NALSA)** and other legal service institutions at the State, district and taluka level.
- Free legal services under LSA Act are available to a person belonging to Schedule Tribe and Schedule Caste, woman, child, victim of human trafficking, differently-abled person, industrial workman, and person in custody in a protective home and the poor.
- According to NALSA, about 8.22 lakh people across India benefited through legal aid services from April 2017 to June 2018.

Key Findings

- About 75% of beneficiaries responded that they opted for free legal aid because they had no means and resources to hire a paid private practitioner.
- 22.6% of the beneficiaries responded that they won't opt for free legal aid services for the second time.
- 60% of women, who were aware of the free legal aid services, chose to opt for the private legal practitioner because they could have better control over their lawyer and they lack faith and confidence over the quality of services offered under the legal aid system.
- **Majority of judicial officers** (52%) rated the overall skill set of a private legal practitioner as of fairly good quality and that of LAC as of moderately low quality.

Constitutional Provision

- **Article 39A** of the Constitution of India directs the State to promote equal justice and provide free legal aid to the poor.
- Articles 14 and 22 (1) make it obligatory for the State to ensure equality before the law and a legal system which promotes justice on a basis of equal opportunity to all.

Note:

NALSA Efforts

Front offices at the district level are being upgraded to make them one-stop centres for legal aid seekers.

- Updating the record of legal aided cases.
 - This way, the legal aid seekers are kept updated about the progress of their cases and better monitoring of cases takes place.
- NALSA outreach programmes (like a door to door campaigns) have made people aware of the legal advice and other forms of legal services such as drafting of applications etc.

Way Forward

- **Full-time Empanelment:** Currently, the engagement of LAC is usually on an ad-hoc basis.
- **Honorarium:** Study recommended that making honorarium (a payment given for professional services that are rendered nominally without charge) for a legally aided case at par with private cases, will compel LAC to not withdraw or deny aided cases in middle.
- **Remuneration:** Remuneration provided to the empanelled lawyers should be increased every year.
 - This is important for those who are serving in juvenile courts as they are not allowed to have their own private practice.

Facts

- According to the **Commonwealth Human Rights Initiative's (CHRI)** report:
 - There are about 1.8 million lawyers in India which means there is one lawyer for every 736 people.
 - There are 61,593-panel lawyers in the country, which translates to just one legal aid lawyer per 18,609 population or five legal aid lawyers per 1,00,000 population.

Japanese Encephalitis

The Central government has sent a team to Assam to review the situation after Japanese Encephalitis (JE) cases were reported from the state.

Japanese Encephalitis

- It is a disease caused by a **flavivirus** that affects the membranes around the brain. **Japanese encephalitis virus (JEV)** is also a major cause of **Acute Encephalitis Syndrome (AES)** in India.

- **Transmission:** The disease is transmitted to humans through bites from infected mosquitoes of the **Culex species**. These mosquitoes breed mainly in rice fields and large water bodies rich in aquatic vegetations. Migratory birds and pigs also play an important role in the transmission of JE from one area to other areas.
- **Treatment:** There is no antiviral treatment for patients with JE. Treatment available is supportive to relieve symptoms and stabilize the patient.
- **Prevention:** Safe and effective JE vaccines are available to prevent the disease. JE vaccination is also included under **Universal Immunization Program**.

Universal Immunization Program

- Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine.
- Immunization Programme in India was introduced in the year 1978 as '**Expanded Programme of Immunization (EPI)**' by the Ministry of Health and Family Welfare, Government of India.
- In the year 1985, the programme was modified as '**Universal Immunization Programme (UIP)**'.
- **Ministry of Health and Family Welfare** provides several vaccines to infants, children and pregnant women through the Universal Immunisation Programme.
 - Vaccines included in the programme are for diseases including **Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Pneumonia and Meningitis due to Haemophilus Influenzae type b (Hib), Measles, Rubella, Japanese Encephalitis (JE) and Rotavirus diarrhoea.**

Puducherry Water Rich Model

Puducherry Water Rich Model is a **model for desilting the urban drains and rural canals** with the cooperation of the general public and Puducherry administration.

General facts

- This model is fulfilling the need for water in rural areas for irrigation and preventing the overflowing of drains in urban areas.
- The practice of community involvement in desilting of canals and maintaining them goes back centuries in Puducherry, to the reign of the **Pallavas**.
- All contributors under this model were awarded "**Swachhta Hi Sewa Award**" by the administration.

Note:

Puducherry Water Rich Model

- It ensures mapping and brings under watch all water bodies and drains by using technology.
- It empowers people and provides a livelihood.
- It links the local community for shramdaan and monitoring water bodies. It encourages community participation.
- It lets the supporter and the service provider decide on the contractual cost. Government officials should only be facilitators, will not in any way negotiate or deal with their money.
- It allows farmers to take the silt away, as it is their soil which got washed away. It is rich in nutrients. The farmers are not charged for it.
- Accountability lies with the collectors and municipal commissioners.

Register of Indigenous Inhabitants of Nagaland

Nagaland's Home Commissioner has issued a notification for setting up of the **Register of Indigenous Inhabitants of Nagaland (RIIN)**.

- The aim is to prepare a master list of all indigenous peoples and check the issuance of **fake indigenous inhabitant certificates**.
- The exercise to prepare the RIIN will be completed within 60 days.
- The RIIN will be prepared after an extensive survey with the help of a village-wise and ward-wise list of indigenous inhabitants based on official records. Also, It will be prepared under the supervision of district administration.
- No fresh indigenous inhabitant certificate will be issued after the RIIN is completed except for children born to the State's indigenous inhabitants, indigenous certificates will be issued to newborn along with birth certificates. The RIIN database will be updated accordingly.
- The RIIN will also be integrated with the online system for **Inner-Line Permit**, a temporary document required for non-inhabitants for entry and travel in Nagaland.
- RIIN has been called as a variant of the **National Register of Citizens (NRC)** that the state of Assam is updating to identify the illegal immigrants in the state.

One Nation One Ration Card Scheme

Recently the **government has announced One Nation One Ration Card Scheme**, which all states need to implement by July 2020.

- One Nation One Ration Card scheme seeks to provide portability of food security benefits all across the nation.

Features

- The migrant workers will be able to buy **subsidised rice and wheat from any ration shop in the country**. However, their ration cards must be linked to Aadhaar to avail the benefits of the scheme.
- Migrants would only be eligible for the subsidies supported by the Centre, which include rice sold at Rs. 3/kg and wheat at Rs. 2/kg. It would not include subsidies given by their respective state government in some other state.
- This scheme will ensure that no poor person is deprived of subsidised grains.
- The scheme can be implemented as already 77% of the ration shops across the country have point of sale (PoS) machines and more than 85% of people covered under the **National Food Security Act (NFSA)** have their cards linked to Aadhaar.
- For remaining beneficiaries, all the States have been given one more year to use PoS machines in the ration shops and implement the scheme.

National Food Security Act, 2013

- The Act legally entitles up to 75% of the rural population and 50% of the urban population to receive subsidized foodgrains under the Targeted Public Distribution System.
- The basic concept of food security globally is to ensure that all people, at all times, should get access to the basic food for living an active and healthy life and is characterized by availability, access, utilization and stability of food.
- Food security can also be derived from the fundamental right to life enshrined in Article 21 of the Constitution, as it may be interpreted to include right to live with human dignity, which may include the right to food and other basic necessities.

Note:

- In pursuance of this, the enactment of the National Food Security Act, (NFSA) 2013 marks a paradigm shift in the approach to food security from welfare to the rights-based approach.

Integrated Management of Public Distribution System

- The IMPDS system is already operational in Andhra Pradesh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Maharashtra, Rajasthan, Telangana and Tripura, wherein a beneficiary can avail his share of foodgrain from any district in the state.

Key Objectives

- Implementation of nation-wide portability of ration cards to lift foodgrains from any fair price shops (FPS) across the country, moving towards 'one nation one ration card'.
- Creation of national-level data repository – for deduplication of beneficiary data (Aadhaar based).
- Use of advanced data analytics techniques to bring about continuous improvements.

Significance

- It will bring more transparency and efficiency in the distribution of foodgrains.
- It will improve the mechanism to identify fake/duplicate ration cards and provide the option to PDS beneficiaries to demand their entitled foodgrains from the Fair Price Shops of their choice at the national level.
- The scheme will ensure food security of migrant labourers who move to other states to seek better job opportunities.

Jal Shakti Abhiyan

The **Jal Shakti Abhiyan** has begun from 1st July 2019.

- The Jal Shakti Abhiyan is a campaign for **water conservation and water security** in the country.
- The campaign will run through citizen participation in two phases, initially, during the **monsoon** season, from 1st July 2019 to 15th September 2019 and then from 1st October 2019 to 30th November 2019 for states receiving the North East retreating monsoon.
- It is a collaborative effort of various ministries of the Government of India and state governments, being coordinated by the **Department of Drinking Water**

and Sanitation (DDWS) that comes under the **Jal Shakti Ministry**.

- The focus of the campaign is on **water-stressed** districts and blocks. The teams of officers from the central government will visit and work with district administration in 1592 water-stressed blocks of 256 districts, to ensure five important water conservation interventions.
- The five important water conservation interventions are :
 - Water conservation and rainwater harvesting,
 - Renovation of traditional and other water bodies/ tanks,
 - Reuse of water and recharging of structures,
 - Watershed development and
 - Intensive afforestation.
- The water conservation interventions will also be supplemented with special interventions including the development of **block and district water conservation plans**, promotion of **efficient water use for irrigation** and a **better choice of crops** through Krishi Vigyan Kendras.

Adarsh Station Scheme

The **Adarsh Station Scheme** of **Ministry of Railways** aims to upgrade the suburban stations of India to Adarsh stations.

- Selection of railway stations under Adarsh Station scheme is based on the identified need for up-gradation of amenities.

Key features

- Adarsh stations will be beautified and upgraded with modern facilities like:
 - Improvement of the facade of the station building
 - Duly streamlining traffic flow
 - Improvement of the platform surface
 - Improvement of existing waiting halls and retiring rooms
 - Toilet facilities
 - Provision of foot overbridges
 - Provision of lifts and escalators etc.
- The up-gradation process will be monitored by the Indian Government and Indian Railways.

Note:

Station Redevelopment Program

Apart from **Adarsh Station scheme** of the **Ministry of Railways**, a separate policy has been made for the development of stations under Station Redevelopment Programme.

- Under station redevelopment program of Indian railways, IRSDC (**Indian Railway Stations Development Corporation Limited**) and other Government agencies are entrusted for undertaking the **techno-economic feasibility** based on which stations are planned to be taken up for redevelopment in phases especially the stations located in major cities, pilgrimage centres and important tourist destinations.

National Mission on Libraries

The **Union Ministry of Culture** has declared financial assistance under **National Mission on Libraries (NML)** to develop libraries in each States/UT.

- As per the scheme, financial assistance will be provided for upgradation of infrastructure of one State Central Library and one District Library in each State/UT as **NML Model Library**.
- Public libraries as being a **State Subject**, function under the administrative control of the respective State/UT library authority.
- There are **six Public Libraries** under the **administrative control** of **Union Ministry of Culture** namely **National Library, Kolkata; Central Reference Library, Kolkata; Central Secretariat Library, New Delhi; Delhi Public Library, Delhi; Khuda Bakhsh Oriental Public Library, Patna and Rampur Raza Library, Rampur**.

National Mission on Libraries (NML)

- The **Union Ministry of Culture** in 2012 formulated the NML scheme in pursuance of **National Knowledge Commission** recommendations for sustained attention for development of Libraries and Information Science Sector.
 - The National Knowledge Commission was constituted in 2005 to prepare a blueprint for reform of knowledge related institutions and infrastructure which would enable India to meet the challenges of the future.
- The scheme consists of four components:
 - Creation of National Virtual Library of India (NVLI)
 - Setting up of NML Model Libraries

- Quantitative & Qualitative Survey of Libraries
- Capacity Building
- This scheme would develop 6 Libraries under Ministry of Culture, 35 State Central Libraries and 35 District Libraries with particular emphasis on economically backward districts, as model Libraries.
 - In addition, 629 district libraries across the states would be provided network connectivity.
- The **Quantitative & Qualitative Survey** of Libraries would be undertaken to prepare a baseline data of libraries in India through a survey of 5000 Libraries.
- The capacity building would be undertaken to enhance the professional competence of library personnel.

National Virtual Library of India (NVLI)

- The objective of the NVLI is to **facilitate the creation of a comprehensive database on digital resources** of India on information about India in an open access environment.
- Salient features of NVLI are:
 - Federated searching through multilingual user interfaces
 - Virtual learning environment
 - E-Governance platform facilitating data analytics
 - Multilingual searching and retrieval on ontology/thesaurus based
- The **project of creation of NVLI** had been entrusted to IIT Bombay (in collaboration with **C-DAC**, Pune and **IGNOU**, Delhi).

Privilege Motion

Recently, a member of the Indian parliament has **moved a privilege motion** against a TV channel.

- The breach of privilege motion is moved against a private Hindi news channel and its Editor for reporting that members' first speech in the Lok Sabha was **plagiarised**.

Plagiarism is the "**wrongful appropriation**" and "**stealing and publication**" of another author's "**language, thoughts, ideas, or expressions**" and the representation of them as one's own original work.

- **Parliamentary privileges** are certain rights and immunities enjoyed by members of Parliament,

Note:

individually and collectively, so that they can effectively discharge their functions.

- The Constitution of India under **Article 105** mentions two privileges, i.e. **freedom of speech in Parliament and right of publication of its proceedings**.
- The Speaker of Lok Sabha and Rajya Sabha is the first level of scrutiny of a privilege motion.
 - The Speaker/Chairperson can decide on the privilege motion or refer it to the privileges committee of Parliament.
 - If the Speaker/Chairperson gives consent under respective rules, the member concerned is given an opportunity to make a short statement.

Privilege Committee

- **Lok Sabha:** The Speaker nominates a committee of privileges consisting of **15 members** as per respective party strengths.
- **Rajya Sabha:** The deputy chairperson heads the committee of privileges, that consists of **10 members**.

National Youth Corp Scheme

National Youth Corps (NYC) is a scheme of the **Department of Youth Affairs, Ministry of Youth Affairs and Sports** implemented through **Nehru Yuva Kendra Sangathan (NYKS)**.

- **National Youth Corps scheme** was launched under the umbrella scheme **Rashtriya Yuva Sashaktikaran Karyakram Scheme** to tap the potential of the youth and channeling their energy towards nation-building.
- It is an amalgamation of the existing two volunteer schemes namely **National Service Volunteer (NSV)** and **Rashtriya Sadbhawana Yojana (RSY)**.

Objectives

- To set up a group of disciplined and dedicated youth who have the inclination and spirit to engage in the task of nation-building.
- To facilitate the realization of inclusive growth (both social and economic).
- To act as a point of dissemination of information, as well as basic knowledge to the community.
- To act as group modulators and peer group educator.
- To act as role models for the younger cohort especially towards enhancement of public ethics, probity and dignity of labour.

Features

- The NYC Scheme enables young men and women in the age group of **18-29 years to serve up to two years** (including the period of training which will be for 4 weeks) in the identified development activities on a full time basis for which they receive an honorarium of Rs 5000/-per month. Representation of the weaker sections of the society and gender balance is encouraged.
- The selection of NYC volunteers is done by a selection committee, headed by District Collector/Deputy Commissioner of the concerned District.
- The scheme guidelines also stipulate that the NYC volunteers shall have no claim or right for any regular employment to any post under the deploying agency/department.
- The scheme is fully funded by the Government of India.

Nehru Yuva Kendra Sangathan

- Nehru Yuva Kendra Sangathan (NYKS) was set up in the year **1987-88** as an **autonomous organization** under the **Government of India, Ministry of Youth Affairs and Sports**.
- NYKS is the largest **grassroots level youth organization**; one of its kind in the world.
- NYKS has targeted to identify areas of harnessing youth power for development by forming Youth Clubs, which are village level voluntary action groups of youth at the grassroots level to involve them in nation building activities.

Aadhaar and its Voluntary Use

Recently the **Parliament has passed the Aadhaar and Other Laws (Amendment) Bill, 2019** which allows voluntary use of Aadhaar as proof of identity.

- The existing Aadhar Act provides for the use of Aadhaar number as proof of identity of a person, subject to authentication.
- The Bill replaces this provision to state that an individual may voluntarily use his Aadhaar number to establish his identity, by authentication or offline verification.
- The Bill states that authentication of an individual's identity via Aadhaar, for the provision of any service, may be made mandatory only by an act of Parliament.

Note:

Salient Features of the Bill

Provisions of the Existing Aadhar Act	Provisionsof the new Bill
The Act provides for the use of Aadhaar number as proof of identity of a person, subject to authentication.	As per the amended bill, an individual may voluntarily use his Aadhaar number to establish his identity, by authentication or offline verification.
The usage of Aadhaar number for establishing the identity of an individual, by the State or a body corporate under any law, is permitted.	Now an entity may be allowed to perform authentication through Aadhaar, only if the UIDAI is satisfied that it is: <ul style="list-style-type: none"> ➤ Complaint with certain standards of privacy and security, or ➤ Permitted by law, or ➤ Seeking authentication for a purpose specified by the central government in the interest of the State.
The restrictions on security and confidentiality of Aadhaar related information do not apply in case the disclosure is pursuant to an order of a District Court (or above).	The Bill amends this to allow such disclosure only for orders by High Courts (or above) .
An officer not below the rank of a Joint Secretary may issue directions for disclosing information in the interest of national security.	Now such disclosure on directions of officers not below the rank of a Secretary .
All fees and revenue collected by the UIDAI will be credited to the Consolidated Fund of India .	The Bill removes this provisions, and creates the Unique Identification Authority of India Fund . All fees, grants and charges received by the UIDAI shall be credited to this fund.

The courts can take cognizance of an offence **only if the UIDAI registers a complaint**.

The amended bill **allows the individual** to register complaints in certain cases, including impersonation or disclosure of their identity.

- Also, under the Bill, the UIDAI may initiate a complaint against an entity in the Aadhaar ecosystem for failure to:
 - Comply with the Act or the UIDAI's directions, and
 - Furnish information required by the UIDAI.
 - Adjudicating officers appointed by the UIDAI shall decide such matters and may impose penalties up to one crore rupees on such entities.
 - The Telecom Disputes Settlement and Appellate Tribunal shall be the appellate authority against decisions of the adjudicating officer.

Unique Identification Authority of India

- The Unique Identification Authority of India (UIDAI) is a statutory authority established on 12 July 2016 by the Government of India under the jurisdiction of the **Ministry of Electronics and Information Technology**, following the provisions of the **Aadhaar Act 2016**.
- The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.
- The UIDAI was initially set up by the Government of India in January 2009, as an attached office under the aegis of the Planning Commission.

Whip in India

The Supreme Court has recently said that the dissident legislators of Karnataka cannot be compelled to participate in the current Assembly session. It is against the previous orders of SC on the **anti-defection law**.

- Under the **Tenth Schedule (anti-defection law)** a political party has a constitutional right to issue a whip to its legislators.
- SC in **Kihoto Holohan vs Zachillhu case, 1992** held that the application of the **Tenth Schedule** is limited to a vote on "**motion of confidence**" or "**no-confidence**" in the government or where the motion under consideration relates to a matter which was an integral policy and programme of the political party.

Note:



- Paragraph 2(1)(b) provides for a lawmaker's disqualification "if he votes or abstains from voting in such House contrary to any direction issued by the political party to which he belongs".

Whip

- The concept of the whip was inherited from colonial British rule. It is used in parliamentary parlance often for floor management by political parties in the legislature.
- A whip is a written order that political party issue to its members for being present for an important vote, or that they vote only in a particular way. The term is derived from the old British practice of "whipping in" lawmakers to follow the party line.
- They are vital in maintaining the links between the internal organisation of the party inside the Parliament. A whip is also an important office-bearer of the party in the Parliament.
- In India, all parties can issue a whip to their members. Parties appoint a senior member from among their House contingents to issue whips. This member is called a **Chief Whip**, and he/she is assisted by additional Whips.
- **Constitutional status:** The office of 'whip', is mentioned neither in the Constitution of India nor in the Rules of the House nor in a Parliamentary Statute. It is based on the conventions of the parliamentary government.
- **Non-applicability of Whip:** There are some cases such as Presidential elections where whips cannot direct a Member of Parliament (MP) or Member of Legislative Assembly (MLA) on whom to vote.

Types of Whips

- The **One-line whip** to inform the members about a vote. It allows a member to abstain in case they decide not to follow the party line.
- The **Two-line whip** is issued to direct the members to be present in the House at the time of voting. No special instructions are given on the pattern of voting.
- The **Three-line whip** is issued to members directing them to vote as per the party line. It is the strictest of all the whip.

Functions of Whip

- The whip plays a crucial role in ensuring the smooth and efficient conduct of business on the floor of the House.

- He is charged with the responsibility of ensuring the attendance of his party members in large numbers and securing their support in favour of or against a particular issue.
- He ensures discipline among party members in the House.
- He identifies the signs of discontent among MPs and informs the respective leaders of their party.
- He or she acts as a binding force in the party and is responsible for maintaining the internal party organisation in the Parliament and.
- **Violation of whip:** If an MP violates his party's whip, he faces expulsion from the House under the Anti Defection Act.
 - The only exception is when more than a third of legislators vote against a directive, effectively splitting the party.

National Digital Health Blueprint

Ministry of Health and Family Welfare has released the **National Digital Health Blueprint (NDHB)** report in the public domain for inputs from various stakeholders.

- Citizen centricity, quality of care, better access, universal health coverage, and inclusiveness are some of the key principles of a robust healthcare system.
- All these aspirations can be realized principally by **leveraging the power of digital technologies**.
- In the context of India, with its size and diversity, this mammoth task requires that a holistic, comprehensive and interoperable digital architecture is crafted and adopted by all the stakeholders, and therefore the need of a blueprint.

Recommendations

- A new entity, **National Digital Health Mission (NDHM)**, is recommended to be established as a pure government organization with complete functional autonomy on the lines of **Unique Identification Authority of India (UIDAI)** and **Goods and Services Network GSTN**.

The Objectives of NDHB

- The Objectives of NDHB are aligned to the **Vision of National Health Policy 2017** and the **Sustainable Development Goals (SDGs)** relating to the health sector. These include:

Note:

- Establishing and managing the **core digital health data** and the **infrastructure** required for its seamless exchange.
- Promoting the adoption of open standards by all the stakeholders in the **National Digital Health Ecosystem (NDHE)**.
- Developing several digital health systems that span across the sector from wellness to disease management.
- Creating a system of Personal Health Records, based on international standards, which would be easily accessible to the citizens and to the service providers.
- Following the best principles of **cooperative federalism** while working with the States and Union Territories for the realization of the vision.
- Promoting health data analytics and medical research.
- Enhancing the efficiency and effectiveness of governance at all levels.
- Ensuring quality of healthcare.
- Leveraging the information systems already existing in the health sector.
- Few of the critical capabilities of NDHE are:
 - **Identification:** The Blueprint handles the requirements of Unique identification of Persons, Facilities, Diseases and Devices.
 - This can be achieved through a combination of Aadhaar-based Identification/Authentication and through other specified types of identifiers.
 - **Citizen to be in Control:** The Blueprint achieves the complex and mandatory requirements of maintaining the confidentiality, security, and privacy of health records through Consent Manager, Anonymizer and Privacy Operations Centre.
 - **Service Access/Delivery:** Access and delivery to be implemented by a combination of Web (India Health Portal), Mobile (My Health App) and Call Centres besides Social Media Platforms.
 - The Command, Control and Communication Centre enable real-time monitoring and real-time interventions needed in the NDHE.
 - Given the significant spread of smartphones and the prospects of its further growth, the Blueprint emphasizes the 'Mobile First' principle for the majority of stakeholder-facing services.
 - **Interoperability:** The Health Information Exchange and the National Health Informatics Standards

enable and promote the interoperability of various building blocks.

- It can be noted that recently, as part of the high-level summit, the Delhi Declaration on digital health for sustainable development was adopted at the concluding session of the '**4th Global Digital Health Partnership Summit**'.

Global Digital Health Partnership Summit

- The '**4th Global Digital Health Partnership Summit**' was held in February 2019 in New Delhi.
- It was hosted by the Ministry of Health and Family Welfare in collaboration with the World Health Organization (WHO) and the Global Digital Health Partnership (GDHP).

Global Digital Health Partnership

- The **Global Digital Health Partnership (GDHP)** is an **international collaboration** of governments, government agencies and multinational organisations dedicated to improving the health and well-being of their citizens through the best use of evidence-based digital technologies.
- It was established in February 2018, to provide an opportunity for transformational engagement between its participants.
- **Australia was the host country** for the inaugural summit in 2018.

World Health Organisation

- The **World Health Organisation (WHO)** is a **specialized agency** of the **United Nations** that is concerned with international public health.
- It is headquartered in **Geneva, Switzerland**.
- The WHO's constitution came into force on **April 7, 1948** – a date now celebrated every year as **World Health Day**.
- The World Health Assembly is the supreme decision-making body in the WHO. The assembly meets annually and is attended by delegations from 194 member states.

Meghalaya: First State With Water Policy

Recently **Meghalaya** became the first state to approve a draft water policy to address water usages, issues of conservation and protection of water sources in the State.

Note:



- According to **schedule 7** of the constitution, Water is a **State subject (Entry 17 in the State List)**. It brings water including water supplies, irrigation and canals, drainage and embankments, water storage and water power under the state list.
- Recently, the state government has also launched its **Jal Shakti mission** to address the problems related to water.
- All issues related to the utilization of water and livelihood and how to preserve water bodies have been outlined in this policy including community participation in the implementation of this policy by constituting a **water sanitation village council** at the village level.
- Although, Meghalaya receives a lot of rainfall but the same water cannot be retained and all of the water reaches Bangladesh in no time.
- Also, it can be noted that **Meghalaya is the first state to pass a social audit law**.

International Day against Drug Abuse and Illicit Trafficking

The Ministry of Social Justice & Empowerment observed International Day against Drug Abuse and Illicit Trafficking on 26th June 2019.

- The Ministry highlighted the following measures in order to deal [with the menace of drug abuse](#):
 - Universal Accessibility of Treatment.
 - Focus on Prevention, Treatment and Rehabilitation under **National Action Plan for Drug Demand Reduction**.

National Action Plan for Drug Demand Reduction

- This **Ministry of Social Justice & Empowerment** has begun implementation of a **National Action Plan for Drug Demand Reduction (NAPDDR)** for 2018-2025.
- The Plan aims at reduction of drug abuse through a multi-pronged strategy involving education, de-addiction and rehabilitation of affected individuals and their families.
- It focuses on preventive education, awareness generation, identification, counselling, treatment and rehabilitation of drug-dependent persons and training and capacity building of the service providers through collaborative efforts of the Central and State Governments and Non-Governmental Organizations.

- Targeted Intervention for High-Risk District & for Vulnerable Population in Closed Settings

Government Intervention

- The **Ministry of Social Justice and Empowerment**, addresses the prevention and rehabilitation aspect of substance use through the establishment of “rehabilitation centres” run by non-governmental organizations.
- The **Drug De-addiction Programme (DDAP)** was initiated in 1988 under the **Ministry of Health and Family Welfare**, and was mandated with provision of treatment for **substance use disorder (SUDs)**.
- Globally, three broad approaches are followed to address the issue of drug use – “**supply reduction**”, “**demand reduction**” and “**harm reduction**”.
 - The “**supply reduction**” sector of the government works toward reducing the availability of illicit drugs by implementing the relevant drug laws and policies and is managed largely by the Narcotics Control Bureau, Ministry of Home Affairs, in India and a variety of other agencies in the central or state governments.
 - The “**demand reduction**” sector, on the other hand, deals with reducing the demand for drugs in the population through prevention, treatment, and rehabilitation.
 - The **Ministry of Social Justice and Empowerment** is the **nodal ministry** for demand reduction and has a “**Scheme for Prevention of Alcoholism and Substance (Drugs) Abuse**” in place since 1985-86.
 - “**Harm reduction**” in India is primarily seen as prevention of HIV among people who inject drugs and various strategies for this are implemented by the **National AIDS Control Organization, Ministry of Health and Family Welfare (MoHFW)**.

Paramarsh Scheme

The **Union Minister for Human Resource Development** launched the **University Grants Commission (UGC)** scheme ‘**Paramarsh**’.

- **Objective:** To mentor institutions which aspire to achieve accreditation by **National Accreditation and Assessment Council (NAAC)** for promoting quality assurance in [higher education](#).

Note:

- **Implementation:**
 - The scheme will be operationalized through a “**Hub & Spoke**” model wherein the **Mentor Institution**, called the “**Hub**” is centralized and will have the responsibility of guiding the Mentee institution through the secondary branches the “**Spoke**” i.e. through the services provided to the mentee for self improvement.
 - This will allow a centralized control over **operational efficiency, resource utilization** to attain overall development of the mentee institution.
- **Target:** The scheme will target 1000 **Higher Education Institutions (HEIs)** for mentoring with a specific focus on quality as enumerated in the UGC “**Quality Mandate**”.
- **Expected Benefits:**
 - It will lead to the enhancement of **overall quality** of the mentee institutions and enhance its profile as a result of improved quality of research, teaching and learning methodologies.
 - It will help the mentee institution in getting **NAAC accreditation**.
 - It will also facilitate the sharing of knowledge, information and opportunities for research collaboration and faculty development in Mentee Institutions.
 - It will help in providing quality education to the 3.6 crore students who are enrolling to Indian Higher Education system at present.

National Accreditation and Assessment Council

- It was established in the year 1994 as an **autonomous institution** of the UGC with its Headquarter in Bengaluru.
- The mandate of NAAC is to make **quality assurance** an integral part of the functioning of HEIs.
- It makes arrangements for periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programmes or projects.

University Grants Commission

- The UGC was formally established in November 1956 as a statutory body of the Government of India through an Act of Parliament, for the coordination, determination and maintenance of standards of teaching, examination and research in university education.

- The head office of the UGC is located in New Delhi.

One Stop Centre Scheme

One stop centre is a **centrally sponsored scheme** of **Ministry of Women and Child Development (MWCD)**, for addressing the problem of **violence against women**.

- It is a subscheme under umbrella scheme **National Mission for Empowerment of Women** including **Indira Gandhi Matritav Sahyaog Yojana**.
- One stop centres will be established across the country to provide integrated support and assistance under one roof to women affected by violence, both in private and public spaces.
- **Funding:** The scheme is **funded through Nirbhaya Fund** and the central government provides 100% financial assistance to the state governments /Union Territories administrations.
- **Auditing:** Audit will be done as per **Comptroller & Auditor General of India** norms and social audit will also be undertaken by **civil society groups**.
- **Services:** One stop centres will be integrated with women helplines to provide following services:
 - Emergency response and rescue services
 - Medical assistance
 - Assistance to women in lodging the FIR
 - Psycho- social support and counselling
 - Legal aid and counselling
 - Shelter
 - Video conferencing facility

Background

- ‘**Nirbhaya Fund**’ was established for women safety pertaining to the strategic areas of **prevention, protection and rehabilitation**.

Nirbhaya Fund

- The Nirbhaya Fund Framework provides for a **non-lapsable corpus fund for safety and security of women**.
- It is administered by the **Department of Economic Affairs (DEA) of the Ministry of Finance (MoF)** of the Government of India.
- It can be utilized for projects and initiatives related to women's safety.

Note:

- The **12th Plan Working Group** on Women's Agency and Empowerment had recommended setting up of one stop crisis centres.
- **Usha Mehra Commission** had recommended for the establishment of a "one-stop centre" to help victims of sexual assault and ensure speedy punishment to culprits.

Need

- **Gender Based Violence (GBV)** is a global health, human rights and development issue that transcends geography, class, culture, age, race and religion to affect every community and country in every corner of the world.
- In India, gender based violence has many manifestations:
 - Like domestic and sexual violence including rape.
 - Harmful practices such as, dowry, honour killings, acid attacks, witch-hunting, sexual harassment, child sexual abuse, trafficking for commercial sexual exploitation, child marriage, sex selective abortion, sati etc.
- India is also grappling with violence due to inequities in social life more particularly in times of displacement and communal incidents.

Unlawful Activities (Prevention) Amendment Act, 2019

The Lok Sabha has passed the **Unlawful Activities (Prevention) Amendment Bill, 2019**.

- The Bill amends the **Unlawful Activities (Prevention) Act, 1967**, providing special procedures to deal with terrorist activities, individuals and groups that foster terrorism in India.

Key Features of the Act

- It empowers the government to **designate individuals as terrorists** if the person commits or participates in acts of terrorism, prepares for terrorism, promotes terrorism or is otherwise involved in terrorism.
 - This has been done as it is seen that when a terrorist organization is banned, its members form a new organization to spread terrorism.
- The Bill also empowers the Director-General, **National Investigation Agency (NIA)** to grant approval of seizure or attachment of property when the case is being investigated by the agency.

- Under the existing Act, the investigating officer is required to obtain the prior approval of the **Director General of Police (DGP)** to seize properties that bear any connection to terrorism.
- It has been seen that many times a terror accused own properties in different states. In such cases, seeking approval of DGPs of different states becomes very difficult, and the delay caused by the same may enable the accused to transfer properties.
- It **empowers the officers of the NIA** — of the rank of Inspector or above, to investigate cases.
 - The existing Act provides for investigation of cases to be conducted by officers of the rank of **Deputy Superintendent or Assistant Commissioner of Police or above**.
- No change is being made in arrest or bail provisions. Also, the provision that the burden of proof is on the investigating agency and not on the accused, has not been changed.
- The **International Convention for Suppression of Acts of Nuclear Terrorism (2005)** has also been added in the Second Schedule through the Amendment.

The Unlawful Activities (Prevention) Act, 1967

- The UAPA, an upgrade on the **Terrorist and Disruptive Activities (Prevention) Act TADA** (lapsed in 1995) and the **Prevention of Terrorism Act - POTA (repealed in 2004)** was originally passed in the year 1967.
- Till the year 2004, "unlawful" activities referred to actions related to secession and cession of territory. Following the 2004 amendment, "**terrorist act**" was added to the list of offences.
- The Act assigns absolute power to the central government, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.
- According to statistics published by the **National Crime Records Bureau (NCRB)**, 922 cases were reported under UAPA in 2016, which was 5% less than what was recorded in 2014, with 976 cases. At the same time, it was up by 3% from 2015 (897 cases).

National Investigation Agency

- The **NIA Act was enacted on 31st December 2008** and thus the **NIA** was born.
- At present, **NIA functions as the Central Counter Terrorism Law Enforcement Agency** in India.

Note:

Protection of Human Right (Amendment) Act, 2019

Parliament passed the **Protection of Human Rights (Amendment) Act, 2019**, to make the **National Human Rights Commission (NHRC)** more inclusive and efficient. It amended the **Protection of Human Rights Act, 1993**.

Proposed Amendment

- A person who has been a **Judge of the Supreme Court** or has held the position of chief justice of India is also eligible to be appointed as **Chairperson of the Commission**.
- Increasing the members of the commission who have knowledge of human rights issues, from two to three, out of which one must be a woman.
- The **members of the commission** include:
 - Chairperson of the **National Commission for Backward Classes**.
 - Chairperson of the **National Commission for the Protection of Child Rights**.
 - Chief Commissioner for **Persons with Disabilities**.
- **Term of Chairperson and Members:** It reduced the term of the **Chairperson and Members of the Commission and the State Commissions** from five to three years and they shall be eligible for re-appointment.
- A person who has been a **Judge of the High Court** is also made eligible to be **appointed as Chairperson of the State Commission** in addition to the person who has been the **Chief Justice of the High Court**.
 - It confers upon State Commissions, the functions relating to human rights being discharged by the Union territories, other than the Union territory of Delhi, which will be dealt with by the Commission.

Protection of Human Right Act, 1993

- The **Protection of Human Rights Act, 1993** came into force with retrospective effect from Sept. 28, 1993.
- It applies to the whole of India.
- The Protection of Human Rights Act, 1993 was enacted to provide for the constitution of:
 - **National Human Rights Commission (NHRC)**,
 - **State Human Rights Commission (SHRC)** and
 - **Human Rights Courts** for the protection of human rights

- **Section 2 of the Act -“Human Rights”** means the rights relating to life, **liberty, equality and dignity of the individual** guaranteed by the Constitution or embodied in the **International covenants and enforceable by courts in India**.

Companies (Amendment) Act, 2019

The Parliament has passed the **Companies (Amendment) Act, 2019**. The legislation is aimed at tightening the **Corporate Social Responsibility (CSR)** compliance and reducing the load of cases before the **National Company Law Tribunal (NCLT)**.

Salient Features of the Act

The Act **ensures greater accountability and better enforcement** of the corporate governance norms.

- A key change in the Act is related to CSR spending, wherein **companies would have to mandatorily keep unspent money into a special account**.
 - The companies will have one year to firm up the CSR proposal and another three years to spend funds. In case money remains unspent for one plus three years, the money will have to be moved to an escrow account, could be added to the Prime Minister's Relief Fund.

Corporate Social Responsibility

- Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders.
- CSR is generally understood as being the way through which a company achieves a balance of **economic, environmental and social imperatives (Triple-Bottom-Line- Approach)**, while at the same time addressing the expectations of shareholders and stakeholders.
- India has become the first country to make **CSR spending mandatory** through a law, i.e. through **Section 135** of the **Companies Act, 2013**. The salient features of CSR provision are as follows:
 - Companies earning a profit of more than Rs 5 crore, with turnover of Rs 1000 crore or networth of more than Rs. 500 crore are required to shell out at least 2% of their three-year annual average net profit towards CSR activities.

Note:



- Each company fulfilling these conditions is required to constitute a CSR committee of the Board.
- The Board of each such company is required to have the company's CSR policy formulated and monitor its implementation.
- Companies may implement their **CSR Policy** through trusts or societies or **Section 8 of the Companies Act** etc.
- The Act empowers the **Registrar of Companies** to initiate action for the removal of a company from the Register of Companies if it is not carrying on any business or operation in accordance with the Company Law.
- The legislation envisages a **re-categorisation** of 16 minor offences as purely **civil defaults**.
- It also provides for transferring of functions with regard to dealing with applications for change of financial year to Central government and shifting of powers for **conversion from public to private companies** from NCLT to the central government.
- It provides more clarity with respect to certain powers of the **National Financial Reporting Authority (NFRA)**.

Ambedkar Hastshilp Vikas Yojana

The Government launched the **Ambedkar Hastshilp Vikas Yojana (AHVY)** in 2001-2002.

- The scheme was launched with a view to mobilize the artisans into **Self Help Groups** and training the groups on various aspects of forming and running the community business enterprises for self sustainability of artisans.
- The **salient features of the Yojana** are as follows:
 - Baseline Survey & Mobilization of Artisans
 - Design & Technology Upgradation
 - Human Resource Development
 - Direct Benefit to Artisans
 - Infrastructure and Technology Support
 - Research and Development
 - Marketing Support & Services

Steps Taken by the Government

- The Government organized **Hastkala Sahyog Shivirs** at more than 300 places all over the country for providing **Aadhaar linked identity card, marketing**

facilities, facilitating the artisans through Mudra loan and enrolment of artisans under **Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana and Aam Aadmi Bima Yojana**.

- The Government has identified and adopted **90 clusters** across the country which will also cover aspirational districts, women clusters, weaker section and export potential clusters.
 - The objective is to **transform these clusters in a time period of 3 years by ensuring self-sustainment of the Self Help Groups/artisans** of these clusters.
- During the current financial year, 2019-20, the Government has taken initiative to organize campaign to educate cluster artisans about the scope of handicraft producer company, its importance for long term sustainable business development for the cluster and motivate prospective artisans/Self Help Groups members to form producer companies in various cluster areas across the country.

Banning of Unregulated Deposit Schemes Act, 2019

Parliament has passed the **Banning of Unregulated Deposit Schemes Act, 2019**, which seeks to put in place a mechanism by which poor depositors will get back their hard-earned money.

Provisions of the Bill

- **Deposit:** The Act defines a deposit as an amount of money received through an advance, a loan, or in any other form, with a promise to be returned with or without interest.
 - It also defines certain amounts which shall not be included in the definition of deposits such as amounts received in the form of loans from relatives and contributions towards capital by partners in any partnership firm.
- **Unregulated Deposit Scheme:** The Act bans unregulated deposit schemes. A deposit-taking scheme is defined as unregulated if it is taken for a business purpose and is not registered with the regulators.
- **Designated Courts:** The Act provides for the establishment and setting up of one or more Designated Courts in specified areas. This Court will be headed by a judge not below the rank of a district and sessions judge, or additional district and sessions judge.

Note:

- **Central Database:** The Act provides for the central government to designate an authority to create an online central database for information on deposit takers. All deposit takers will be required to inform the database authority about their business.
- **Competent Authority:** The Act provides for the appointment of one or more government officers, not below the rank of Secretary to the state or central government, as the Competent Authority. The Competent Authority will have powers similar to those vested in a civil court. The Competent Authority may:
 - provisionally attach the property of the deposit taker, as well as all deposits received
 - summon and examine any person it considers necessary, for the purpose of obtaining evidence
 - orders the production of records and evidence
- **Offences and penalties:** The Act defines three types of offences, and penalties which are as follows:
 - Running (advertising, promoting, operating or accepting money for) unregulated deposit schemes. It will be punishable with imprisonment between two and seven years, along with a fine ranging from Rs 3 to 10 lakh.
 - Fraudulently defaulting on regulated deposit schemes. It will be punishable with imprisonment between 3 and 10 years, and a fine ranging from Rs 5 lakh to twice the amount collected from depositors.
 - Wrongfully inducing depositors to invest in unregulated deposit schemes by willingly falsifying facts.
 - The repeated offenders under the Act will be punishable with imprisonment between five to 10 years, along with a fine ranging from Rs 10 lakh to Rs 5 crores.

The Code on Wages

The parliament has passed the Code on Wages Act, 2019.

Constitutional Provisions

- The **Article 43 of the Constitution of India** directs the state to secure to all workers a **living wage, conditions of work ensuring a decent standard of life**.
- Under the Constitution of India, **Labour is a subject in the Concurrent List of the Seventh Schedule** where both the Central & State Governments are competent to enact legislation.

Need

- To streamline the definition of wages as present labour laws consist of 12 different definitions of wages which is the major cause of litigation and inefficiency in the implementation of labour laws.
- The definition has been simplified and is expected to reduce litigation and will entail at a lesser cost of compliance for an employer.
- An establishment will also be benefited as the number of registers, returns, forms, etc., not only can be electronically filed and maintained, but it is envisaged that through rules, not more than one template will be prescribed.

Highlights of the Code

- It aims to transform the old and obsolete labour laws into more accountable and transparent ones and seeks to pave the way for the introduction of minimum wages and [labour reforms in the country](#).
- It regulates the wages and bonus payments in all employments where any industry, trade, business, or manufacturing is being carried out.
- It subsumes the following four labour laws:
 - **The Payment of Wages Act, 1936**
 - **The Minimum Wages Act, 1948**
 - **The Payment of Bonus Act, 1965**
 - **The Equal Remuneration Act, 1976**
- It universalizes the provisions of minimum wages and timely payment of wages to all employees irrespective of the sector and wage ceiling and seeks to ensure "**Right to Sustenance**" for every worker and intends to increase the **legislative protection of minimum wage**.
- It has been ensured that employees getting monthly salary shall get the salary by 7th of next month, those working on a weekly basis shall get the salary on the last day of the week and daily wagers should get it on the same day.
- The provisions will apply to all the employees.
 - At present, the provisions of both the Minimum Wages Act and Payment of Wages Act apply on workers below a particular wage ceiling working in Scheduled Employments only.
 - Many unorganized sector workers like agricultural workers, painters, persons working in restaurants and dhabas, chowkidars, etc. who were out of the ambit of minimum wages will get legislative protection of minimum wages.

Note:



- The Central Government is empowered to fix the floor wages by taking into account the living standards of workers. It may set different floor wages for different geographical areas.
 - The minimum wages decided by the central or state governments must be higher than the floor wage.

Wages

- According to the codes, wages include salary, allowance, or any other component expressed in monetary terms. This does not include bonus payable to employees or any traveling allowance, among others.
- **Minimum Wage:** The [International Labour Organisation](#) defines it as “**the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract**”. Or, the minimum wage includes the survival needs of life like food, shelter, and clothing.
- **Living Wage:** It is the wage needed to provide the **minimum income necessary to pay for basic needs based on the cost of living in a specific community**. In addition to survival needs, a ‘living wage’ includes education, health, insurance, etc.
- **Fair Wage:** A ‘fair wage’ is a **mean between ‘living wage’ and ‘minimum wage’**.
- It simplifies the methodology to fix minimum wage by doing away with the “**type of employment**” as one criterion. The minimum wage fixation would primarily be based on geography and skills.
- In order to ensure **transparency and accountability**, the code seeks to reform the inspection regime by introducing web based random computerised inspection scheme, jurisdiction-free inspections, calling of information electronically, the composition of fines, etc.
- To streamline the claims of workers, the limitation period for filing claims for minimum wages, bonus, equal remuneration has been raised to 3 years.
- It prohibits gender discrimination in matters related to wages and recruitment of employees belonging to both the sexes for the same work or work of similar nature.

Impact

- It seeks to reduce compliance costs for employers.
- It is expected to reduce litigation charges as it streamlines the definition of wages.
- It will substantially reduce the number of minimum wages in the country from the existing more than 2000 rates of minimum wages.
- This would ensure that every worker gets a minimum wage which will also be accompanied by an increase in the purchasing power of the worker thereby giving a fillip to growth in the economy.

Consumer Protection Act, 2019

Parliament has passed the **Consumer Protection Bill, 2019**, which seeks to strengthen the consumer rights and provides a mechanism for redressal of complaints regarding defects in goods and deficiency in services.

Provisions of the Act

- Apart from setting up of authorities for timely and effective administration and settlement of consumer disputes, the actl also seeks to bring in e-commerce under their jurisdiction and hold celebrities accountable for false and misleading advertisements of products that they endorse.
- Apart from the consumer courts at the district, state and national level, the act proposes a **Central Consumer Protection Authority (CCPA)** to promote, protect and enforce consumer rights and protect the consumers from unfair trade practices.
 - CCPA, envisaged as a regulator, can file a class action suit if required and would take immediate action on any consumer complaint.
- The Act proposes strict action against the advertiser in case of misleading advertisements but not against the media through which the advertisement is being publicised.
 - Celebrities can be fined up to ₹10 lakh. For repeat offences, this may rise to ₹50 lakh, along with a jail term of up to five years
- It also provides for product liability action on account of harm caused to consumers due to defective products or deficient services.
- The Act will replace the earlier [Consumer Protection Act, 1986](#).



Note:

Economic Scenario

Highlights

- *Inheritance Tax*
- *India International Cooperatives Trade Fair*
- *Kisan Credit Card for Fisherman*
- *Anti Locust Fight*
- *US Drags India to WTO*
- *Miyawaki Method*
- *Budget Widens RBI's Autonomy*
- *Utkarsh 2022*
- *Women Startup Summit 2019*
- *Mission Raksha Gyan Shakti*
- *Silk Samagra*
- *International Cooperation Scheme*
- *'Blue Flag' Certification*
- *White Label ATM*
- *Mauritius Leaks*
- *Global Innovation Index-2019*
- *Sahamati*
- *Seed Bankers for Conserving Native Crops*
- *Microdots Technology*

Inheritance Tax

The **Union government** may re-introduce the **Inheritance Tax (Estate Duty)** in the budget-2019. Inheritance tax is concerned with the **taxation on the value of property** passed on death.

- India had Estate Duty from 1953 till it was **abolished** in 1985.
- The **objective** behind the reintroduction of an inheritance tax:
 - To address the problem of **economic inequality**.
 - To generate higher revenue, leading to higher public spending by the government.

According to a survey conducted by **Oxfam**, 58% of India's total wealth is concentrated within 1% of its population – higher than the global average of about 50%.

History of Inheritance Tax in India

- It was introduced in 1953 under the **Estate Duty Act, 1953** as an attempt to reduce economic disparity.
 - Estate duty rates were progressive and rose as far as 85 percent on estates exceeding Rs 20 lakh.
- Estate duty was levied on the market value of all immovable properties in India, as well as on all movable property (whether in India or outside) passed on to successors upon the death of an individual.

- The erstwhile law also had an anti-avoidance mechanism in place to curb certain transactions such as gifts made in contemplation of death or gifts given within two years prior to death.
- Despite its noble objectives, the estate duty law was met with significant disapproval throughout its existence due to a number of factors:
 - The law was complex and led to higher litigation and higher administration costs.
 - Perceived double taxation on the same assets in the form of estate duty and wealth tax (abolished w.e.f. from FY16).
 - Lower estate duty collections as a result of illegal concealment and the practice of holding Benami properties.

Prospects

- Today, many developed countries such as the US, UK, France, Japan and the Netherlands have inheritance tax laws in place.
- The US imposes Gift Tax and Estate Tax (both taxes levied on the donor) at 40% with a combined lifetime exemption threshold for both taxes amounting to approximately \$11 million per person.
- Likewise, inheritance tax in the UK is levied at 40%, but with a far lower exemption threshold.
- The growing concern surrounding India's increasing economic disparity, the imposition of estate duty seems to be a desirable alternative.

Note:



Concerns

- The inheritance tax is payable by the legal representative to whom the property may pass on death.
- The recipient of the property may not have the money available to pay tax that could lead to situations of distress sale.
- Arguments against the levy of inheritance tax mainly revolve around fears regarding the outflow of entrepreneurial human capital and financial resources going abroad.
 - With India being a developing country, keeping capital intact in the hands of entrepreneurs may represent a more efficient investment for economic development.
- India needs to review the case for re-introducing an inheritance/estate tax with, ideally, relatively high thresholds, so it's targeted at the very rich.

India International Cooperatives Trade Fair

First ever **India International Cooperatives Trade Fair (IICTF)** to be held at Pragati Maidan, New Delhi.

- IICTF is a unique initiative for taking farmers, artisans & other members of cooperatives directly to the global trade platform.
- Trade Fair is being conducted by the **National Cooperative Development Corporation (NCDC)** with the support of Network for the Development of Agricultural Cooperatives (NEDAC), Ministries, State Governments and several apex level Indian cooperative organizations.
- Focus sectors of India International Cooperatives Trade Fair are:
 - **Textile:** ginning spinning, power loom, textile processing.
 - **Agribusiness and food processing:** cold chain, packaging, climate-smart agriculture.
 - **Fast Moving Consumer Goods (FMCG),** Health and hospitality
 - **Trade and marketing:** agriculture produce marketing, transport and marketing infrastructure.
 - **Credit service and finance:** insurance, cooperative banking.

Significance

- The Cooperative sector has a big role to play in doubling agriculture exports (from present US \$ 30 billion to US\$ 60 billion) by 2022 as envisaged in the **Agriculture Export Policy 2018**.
 - 94% of the Indian farmers are members of at least one cooperative institution.
- IICTF would be a major platform to promote exports by cooperatives with direct benefits to their members who are mainly farmers, artisans, women, SC/ST etc.
- Promotion of exports of key commodities/value chain products that have high potential, and are backed by specific promotional initiatives (including the involvement of stakeholder entities) would definitely actualize the target of **Doubling the Farmers Income** and will achieve the goals set under the **Agri-Exports Policy 2018**.

NEDAC

- The **Network for the Development of Agricultural Cooperatives in Asia and the Pacific** is a unique regional forum linking 21 apex cooperative organizations in 12 countries.
- It was set up in 1991 by the United Nations **Food and Agriculture Organization (FAO)**'s Regional Office for Asia and the Pacific, the International Cooperative Alliance (ICA) and the International Labour Organization (ILO).
- The NEDAC member organizations in Bangladesh, China, India, Indonesia, Japan, Malaysia, Mongolia, Nepal, Philippines, Republic of Korea, Sri Lanka and Thailand represent three million agricultural cooperatives which play a crucial role in improving the livelihoods of 150 million rural households.
- NEDAC sensitizes governments in the region to the need for a key role for agricultural cooperatives in promoting agricultural and rural development to ensure rural food and livelihood security for hundreds of millions of people in Asia and the Pacific.

Kisan Credit Card for Fisherman

Recently the **Minister of State for Fisheries, Animal Husbandry and Dairying** announced the extension of the facility of **Kisan Credit Card (KCC) to fisheries and animal husbandry farmers** to help them meet their working capital needs.

Note:

- This will help fisheries and animal husbandry farmers to meet their short term credit requirements of rearing of animals, poultry birds, fish, shrimp, other aquatic organisms and capture of fish.
- Fish, Poultry & Dairy Farmers (individual & groups/ partners/sharecroppers/tenant farmers), Self Help Groups, Joint Liability Groups and Woman group are eligible under extended KCC scheme.
- Under KCC facility, interest subvention is available for animal husbandry and fisheries farmers @ 2% per annum at the time of disbursal of loan and additional interest subvention @ 3% per annum in case of prompt repayment as Prompt Repayment Incentive (repayment of the loan within a period of one year from the date of advance).

Kisan Credit Card

- The **Kisan Credit Card (KCC)** scheme was introduced in **1998** for providing adequate and timely credit support from the banking system under a single window with flexible and simplified procedure to the farmers for their cultivation and other needs like purchase of agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.
- The scheme was further extended for the investment credit requirement of farmers viz. Allied and non-farm activities in the year 2004.
- KCC covers **Post-harvest expenses**; Produce marketing loan; Consumption requirements of farmer household; Working capital for maintenance of farm assets and activities allied to agriculture; Investment credit requirement for agriculture and allied activities.
- The Kisan Credit Card Scheme is implemented by Commercial Banks, RRBs, Small Finance Banks and Cooperatives.

Interest Subvention Scheme

- The interest subvention scheme for farmers aims at providing **short term credit** to farmers at the subsidised interest rate.
- The policy came into force with effect from 2006-07
- The **Interest Subvention Scheme** is being implemented by **NABARD** and **RBI**.
- In case farmers do not repay the short term crop loan in time they would be eligible for interest subvention of 2% as against 5% available.

Anti Locust Fight

The officials from **India and Pakistan** are closely working together to prevent the movement of locusts and save crops in bordering districts.

- Both the countries are also consistently sharing inputs, including satellite data, via **Food and Agricultural Organization (FAO)** to counter and restrict the movement of locusts.

Food and Agricultural Organization

- In 1945, Food and Agriculture Organization (FAO) was created In Quebec City, Canada, by the first session of the newly created United Nations.
- FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger.
- FAO is also a source of knowledge and information, and helps developing countries in transition modernize and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all.

Locust

- A locust is a large, mainly **tropical grasshopper** with strong powers of flight. They differ from ordinary grasshoppers in their ability to change behaviour (gregarize) and form swarms that can migrate over large distances.
- The **most devastating** of all locust species is the **Desert Locust** (*Schistocerca gregaria*).
- Locusts are generally seen during the months of June and July as the insects are active from summer to the rainy season.
- Locusts have a high capacity to multiply, form groups, migrate over relatively large distances (they can fly up to 150 km per day) and, if good rains fall and ecological conditions become favourable, rapidly reproduce and increase some 20-fold in three months.
- **Threat to Vegetation:** Locust adults can eat their own weight every day, i.e. about two grams of fresh vegetation per day. A very small swarm eats as much in one day as about 35,000 people, posing a devastating threat to crops and food security.
- If infestations are not detected and controlled, devastating plagues can develop that often take several years and hundreds of millions of dollars to bring under control with severe consequences on food security and livelihoods.

Note:

- Locust Control measures include destroying egg masses laid by invading swarms, digging trenches to trap nymphs, using hopperdozers (wheeled screens that cause locusts to fall into troughs containing water and kerosene), using insecticidal baits, and applying insecticides to both swarms and breeding grounds from aircraft.
- FAO provides information on the general locust situation to the global community and gives timely warnings and forecasts to those countries in danger of invasion.
 - The FAO raised alarm over the locust outbreak in northeast Africa and Saudi Arabia in February, 2019.

Locusts in India

- Four species viz. **Desert locust** (*Schistocerca gregaria*), **Migratory locust** (*Locusta migratoria*), **Bombay Locust** (*Nomadacris succincta*) and **Tree locust** (*Anacridium* sp.) are found in India.
- The existing series of locust swarms that have entered India via Pakistan had originated in Iran. Movement of locusts is facilitated by summer dusty winds, which flow from the Arabian Sea, taking along these creatures from Sindh in Pakistan to western Rajasthan.
- These creatures have wreaked havoc in Pakistan but have not caused any damage on the Indian side.
- **Locust Warning Organisation (LWO)**, Jodhpur is currently handling 13-16 swarms of locusts in Jaisalmer and Barmer districts of Rajasthan. It is currently using a pesticide 'malathion'.
 - The last major locust outbreak that was reported in Rajasthan was in the year 1993.

Locust Warning Organization (LWO)

- **Locust Warning Organisation (LWO), Directorate of Plant Protection Quarantine and Storage, Ministry of Agriculture & Farmers Welfare** is responsible for monitoring, survey and control of desert locust in scheduled desert areas mainly in the States of **Rajasthan and Gujarat**.
- Incursion of exotic locust swarms into India is prevented through organization of suitable control operation. LWO keeps itself abreast with the prevailing locust situation at national and international level through monthly Desert Locust Bulletins of FAO.
- Its objectives include:

- To monitor, forewarn and control locust in **Scheduled Desert Area (SDA)** being international obligation and commitment.
- To conduct research on locust and grasshoppers.
- Liaison and coordination with national and international organizations.
- Human resource development through training and demonstration for staff of Locust Warning Organization (LWO), State officials, BSF personnel and Farmers.
- To maintain control potential to combat locust emergency by organizing locust control campaign.

US Drags India to WTO

The United States has dragged India to the **World Trade Organisation**, requesting dispute consultations on the 'retaliatory duties' imposed by India on 28 US goods in June, 2019.

- India has imposed the duties as a tit-for-tat move against the US decision to impose unilateral additional tariffs on steel and aluminium imported to India. This **mini-tariff war between the US and India** sparked from USA's decision to withdraw **GSP** status from India and other economic issues.
- The US claims that the additional duties are unreasonable with the provisions of the **WTO's General Agreement on Tariffs and Trade**.
- India's argument in support of its duties is that retaliation is permitted under the WTO's agreement on safeguards.
- To this, the US maintains that its tariffs are not a safeguard measure but were taken under Section 232 of the **US Trade Expansion Act of 1962** on grounds of national security.
- If the dispute consultations between the two countries fail to resolve the matter then the US can ask the WTO to set up a panel to decide on the matter.
- Also, it is not the first time the **USA and India had their trade issues** settled at WTO.
 - Recently India has won a major trade dispute against the US at the World Trade Organization (WTO) regarding **domestic content requirements and subsidies**.

Note:



Miyawaki Method

Telangana government has introduced the Japanese “Miyawaki” method of afforestation to grow urban forests and expand the green cover as well as to meet the stipulated plantation target under the **Telanganaku Haritha Haaram (TKHH)**.

- Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki, that helps build dense, native forests in a short time.
- It has revolutionised the **concept of urban afforestation** by turning backyards into mini-forests.
 - This method includes planting trees (only native species) as close as possible in the same area which not only saves space, but the planted saplings also support each other in growth and block sunlight reaching the ground, thereby preventing the growth of weeds.
 - The saplings become maintenance-free (self sustainable) after the first three years.
- The approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual.
- Miyawaki method helps to create a forest in just 20 to 30 years, while through conventional methods it takes anywhere between 200 to 300 years.

Concerns

- Such forests lack some qualities of natural forests, such as medicinal properties and the ability to bring rain.
- Such fast-growing plantations are actually wood lots (a parcel of a woodland or forest capable of small-scale production of forest products (such as wood fuel, sap for maple syrup, sawlogs, and pulpwood) as well as recreational uses like bird watching, bushwalking, and wildflower appreciation) and cannot be termed as forests.
- Several environmentalists have questioned the efficacy of the method that accelerates the growth of trees and claims to match a forest’s complex ecosystem (as it is not a good idea to force plants to photosynthesize fast).

Budget Widens RBI's Autonomy

The **Union budget 2019-20** has expanded the **Reserve Bank of India's** powers by bringing **Housing Finance**

Companies (HFCs) under its ambit and deepening its governance over **Non-Banking Finance Companies (NBFCs)**.

- Increase in RBI’s autonomy can be attributed to the crisis at **Infrastructure Leasing and Financial Services Ltd (IL&FS)**, which led to a **liquidity crisis** in NBFC sector.
 - With reference to IL&FS crisis, **Serious Fraud Investigation Office (SFIO)** had also noted that timely RBI intervention could have averted the crisis.
- **Wider Regulatory Powers:** The Union budget 2019-20 has proposed to amend the **RBI Act 1934**, in order to strengthen the central bank’s autonomy and **regulatory powers** in following domains:
 - It can supersede the board of NBFCs (other than those owned by the government) in the public interest or to prevent the affairs of NBFC being conducted in a manner detrimental to the interests of the depositor or creditor.
 - It can remove and can further appoint the director of a board of NBFC.
 - The proposed amendment to the RBI act will allow it to frame schemes for amalgamating, splitting and reconstructing an NBFC.
 - This will enable resolution of financially troubled NBFCs through a merger or by splitting them into viable and non-viable units called bridge institutions.
 - RBI can also remove auditors, call for audit of any group company of an NBFC, and have control over the compensation of senior management.

Utkarsh 2022

The **Reserve Bank of India (RBI)** has finalised a three-year roadmap, named **Utkarsh 2022** to improve regulation and supervision, among other functions of the central bank.

- **Utkarsh 2022** is a **medium term strategy** in line with the global central banks’ plans to strengthen the regulatory and supervisory mechanism.
 - This specifically includes central bank’s proactive role to avoid **any other IL&FS debt default** issue in future.
- Earlier, an internal committee of RBI was formed under former Deputy Governor Viral Acharya, to identify issues that needed to be addressed over the next three years.

Note:



Women Startup Summit 2019

The **Kerala Startup Mission (KSUM)** is to host the **Women Startup Summit** in association with the Indian Women Network of **Confederation of Indian Industry (CII)**.

- The 'Women Startup Summit 2019', a one-day event aims at encouraging aspiring women professionals to take up their entrepreneurial journey and developing an inclusive entrepreneurship ecosystem in the State.
- Theme of the Summit is **"Developing an Inclusive Entrepreneurship Ecosystem"**.
- About 20 women startups shortlisted from the "She Loves Tech" national grand challenge will be showcased in the summit.

- She Loves Tech is a global competition which was launched in 2015 to provide a platform for women entrepreneurs and startups dedicated to improving the lives of women globally.
 - 2019 Global Startup Competition is the world's largest startup competition focused on women and technology.
 - For the first time She Loves Tech competition will be held in India in association with Kerala Startup Mission, the nodal government organization for promoting the startups in Kerala.

- **Kerala has 13% of women participation** in the technology startup ecosystem and the state government has taken proactive steps for increasing the participation of women in the sector.

Confederation of Indian Industry (CII)

- Confederation of Indian Industry is a **non-government, not-for-profit, industry-led and industry-managed organization**, playing a proactive role in India's development process.
- **Founded in 1895**, it has around 9000 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from around 276 national and regional sectoral industry bodies.
- It works to **create and sustain an environment conducive** to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

Mission Raksha Gyan Shakti

In a major boost to **Mission Raksha Gyan Shakti**, a Memorandum of Understanding (MoU) has been signed between the **Intellectual Property Facilitation Cell (IPFC)**, **Ministry of Defence (MoD)** and **National Research Development Corporation (NRDC)**, **Ministry of Science and Technology (MoST)** to provide a major fillip to the ongoing efforts towards promoting a culture of Innovation and **Intellectual Property Rights (IPR)** in **Indian Defence industry**.

- Mission Raksha Gyan Shakti was launched in the year 2018 with the aim to inculcate Intellectual Property (IP) culture in Indian defence manufacturing ecosystem.
- Under this mission, an **Intellectual Property Facilitation Cell (IPFC)** was established under the aegis of **Directorate General Quality Assurance (DGQA)**.
- The centre, within a short span of a year, has achieved the challenging target of training more than 12,000 personnel on IPR and facilitating filing of more than 1000 new IPR applications.
- The Action Plan 2019-20 of MRGS includes training of additional 20,000 personnel from Public / Private Sector Industry and Armed Forces on relevance of IP Culture to Indian Defence manufacturing industry and to institute a framework which enables full utilization of new ideas and innovation towards achieving self-reliance in defence sector.

National Research Development Corporation (NRDC)

- The **NRDC** was established in the year 1953 by the Government of India, with the primary objective to promote, develop and commercialise the technologies/know-how/inventions/patents/processes emanating from various national R&D institutions/Universities

Directorate General Quality Assurance

- The **Directorate General of Quality Assurance (DGQA)** is under the **Department Of Defence Production, Ministry of Defence**. The organisation provides **Quality Assurance (QA)** cover for the entire range of Arms, Ammunitions, Equipments and Stores supplied to Armed Forces.

Silk Samagra

The **"Silk Samagra"** is a **Central Sector Scheme** for the development of **sericulture** in the country.

Note:

- The scheme is being implemented by the **Central Silk Board (CSB)**.
- It focuses on improving the **quality and productivity of domestic silk** thereby reducing the country's dependence on imported silk.
- It comprises the following **four components**:
 - Research & Development, Training, Transfer of Technology and I.T. Initiatives
 - Seed Organizations
 - Coordination and Market Development, and
 - Quality Certification Systems (QCS)/Export Brand Promotion and Technology Up-gradation.
- While the R&D units develop technology packages, impart training on improved technology programmes to stakeholders and transfer the technology to the field through front line demonstration, the seed production units produce basic and commercial seed of the improved Silkworm breeds developed by the Research Institutes.
- The units under the **Quality Certification System** maintain and certify the quality standards set by the R&D units for Silkworm seed, cocoon, raw Silk and Silk products covering the entire Silk value chain.
- Under the scheme, assistance is extended to sericulture stakeholders for the beneficiary oriented components like, raising of Kissan nursery, plantation with improved Mulberry varieties, Irrigation, chawki rearing centres with incubation facility and rearing equipments.

The Central Silk Board

- It is a **statutory body** established in the year 1948 by an Act of Parliament.
- It is working under the administrative control of **Ministry of Textiles, Government of India**.
- Its headquarter is located in **Bangalore**.
- It is mandated with:
 - Promoting the development of **Silk Industry** by such measures as it thinks fit.
 - Undertaking, assisting and encouraging scientific, technological and economic research.
 - Advising the Central Government on all matters relating to the development of silk industry including import and export of raw silk.
 - Preparing and furnishing such other reports relating to the silk industry as may be required by the Central Government from time to time.

- The scheme also provides assistance for door to door service agents for disinfection and input supply, support for improved reeling units like automatic reeling units, multi-end reeling machines, improved twisting machines and support for post yarn facilities for quality silk and fabric production.

Silk Production in India

- There are five major types of silk of commercial importance, obtained from different species of silkworms. These are **Mulberry, Oak Tasar & Tropical Tasar, Muga and Eri**.
- Except mulberry, other varieties of silks are wild silks, known as vanya silks.
- India has the unique distinction of producing all these commercial varieties of silk.
- South India is the leading silk producing area of the country and is also known for its famous silk weaving enclaves like **Kancheepuram, Dharmavaram, Arni**, etc.

International Cooperation Scheme

The **Ministry of Micro, Small and Medium Enterprises (MSME)** is implementing **International Cooperation (IC) Scheme** with the objective of **enhancing the competency** of MSMEs, capturing new markets for their products, exploring new technologies for improving manufacturing capacity, etc.

- The Scheme was started during the **Ninth Five Year Plan** (under implementation since 1996).
- The latest guidelines related to the scheme were released in the year 2018.
- It is a demand driven scheme under which financial assistance is provided on a reimbursement basis to the eligible State/Central Government Organisations and Registered Industry Associations, societies/trusts associated with promotion and development of MSME sector.
- As per the existing guidelines, the eligible organizations are facilitating visit/participation of MSMEs in international exhibitions /trade fairs/buyer-seller meet etc. abroad and also holding International conferences/seminars/ workshops in India, for technology infusion, exploring business opportunities, joint ventures etc.

Note:

'Blue Flag' Certification

Union Environment Ministry has selected 12 beaches in India to contend for a 'Blue Flag' certification.

- The **Blue Flag** is one of the world's most recognised voluntary **eco-labels awarded to beaches, marinas, and sustainable boating tourism operators.**
- In order to qualify for the Blue Flag, a series of stringent environmental, educational safety, and accessibility criteria must be met and maintained.
- There are nearly 33 criteria that must be met to qualify for a Blue Flag certification, such as the water meets certain quality standards, having waste disposal facilities, being disabled-friendly, have first aid equipment etc.
- Spain tops the list with 566 such beaches; Greece and France follow with 515 and 395, respectively.
- To help Indian beaches meet these criteria, the Ministry has allowed structures such as container toilet blocks, change rooms, shower panels, mini greywater treatment plants in an enclosed structure, mini solid waste recycling plants and off-grid solar photovoltaic panels, provided they are a minimum 10 metres from the high tide line.

- The **Blue Flag Programme** for beaches and marinas is run by the international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).
- FEE (the Foundation for Environmental Education) was established in France in 1985 and got extended to areas outside Europe since 2001

White Label ATM

In order to enhance the viability of **White Label ATMs (WLAs)**, the **RBI** has allowed White Label ATM Operators (WLAOs) to buy wholesale cash from the RBI and currency chests.

- This will provide the functionality to WLATMs, as they are cash-starved because the banks used to give preference to the ATMs deployed by them.
- Until now cash Management at the WLAs was the responsibility of the Sponsor Bank.
- By allowing WLAO to source cash directly from RBI, will encourage more WLATM to be opened across the country, thereby leading to deepening of financial inclusion.

White Label ATMs

- Automated Teller Machines (ATMs) set up, owned and operated by non-bank entities are called "**White Label ATMs**" (WLAs).
- Non-bank entities incorporated in India under the Companies Act 1956 are allowed to operate WLAs.
- In September 2015, Government permitted Foreign Direct Investment (FDI), up to 100%, under the automatic route.
- Non-bank entities are permitted to set up WLAs in India, after obtaining authorisation from RBI under the **Payment and Settlement Systems (PSS) Act 2007.**
- Such non-bank entities should have a minimum net worth of Rs. 100 crore.
- **Tata Communications Payment Solutions Limited (TCPSL)** was the first company authorized by the Reserve Bank of India (RBI) to open White Label ATMs in the country. It got launched under the brand name '**Indicash**'.
- White Label ATMs are like normal ATM. However, cash deposit or cash acceptance facility is not permitted at the WLA. The difference is this ATM machine does not have any branding of Bank. These machines are usually deployed by **NBFC (Non-Banking Financial Institutions)**.
- The basic idea about White Label ATM is to increase the geographical spread of ATM to **enhance financial inclusion.**

Brown Label ATM

- Brown Label ATM is based on the concept of **sharing the cost.**
- In Brown Label, ATM hardware is owned by the service provider, but cash management and network connectivity are provided by the **sponsor bank.** The ATM machine contains Logo of sponsor bank.
- Brown Label ATM is a cost-effective solution for banks.

White label ATM	Brown Label ATM
White ATMs are owned and operated by non-bank entities but they are not doing 'outsourcing-contract' from a particular bank.	When banks outsourced the ATM operations to a third party.

Note:

The private company owns & operates the ATM machine, pays office rent. They negotiate with the landlord, electricity company, telecom company and so on.	Same
Sponsor bank provides the cash.	The bank (Which has outsourced this work) provides cash for that ATM.
No. White label ATM doesn't have such logo. Not even of the sponsor bank.	ATM has logo of that bank (which has outsourced this work).
They've to compulsory open a few ATMs in (tier 3 to tier 6) areas.	No such compulsion.
RBI directly involved because these white label Companies have to separately get license/permission from RBI to run business.	RBI not involved directly. These outsourcing companies have contractual obligation with their respective banks.

Mauritius Leaks

According to the recently released data by the **International Consortium of Investigative Journalists (ICIJ)**, as many as 50 entities, or one-fourth of those disclosed in the Mauritius leaks, had India as their only country or one of the countries of activity.

- Although investment in India through Mauritius is declining but Mauritius has seen a sizeable amount of funds getting routed through by entities operating or investing in India.

Mauritius Leaks

- In Mauritius Leaks, data of 200,000 leaked documents (in the form of emails, contracts and bank statements) reveals how one country's low tax rates (like Mauritius) were leveraged and misused by Multinational Companies for tax avoidance.
- After Swiss leaks, Panama papers and Paradise papers, Mauritius leaks show how the island nation was used by a long list of corporates to facilitate partnerships with multinationals and, **without paying any capital gains tax, remit profits as Foreign Direct Investment (FDI) to India.**

Tax treaty between India and Mauritius

- The **Double Taxation Avoidance Agreement (DTAA)** was signed between India and Mauritius in 1982. Under this, any entity could apply for tax residency and pay **zero capital gains tax**. This became the principal reason why Mauritius emerged as a top channel for investments being routed into India.
- In 2016 India amended its **Double Taxation Avoidance Agreement (DTAA)** with Mauritius, and the new provisions related to **capital gains tax** were introduced.
- **GAAR (General Anti Avoidance Rule):** It is an **anti-tax avoidance law** under **Income Tax Act, 1961** of India and is framed by the Department of Revenue under the Ministry of Finance.
- **Common Reporting Standard (CRS):** It is an information standard for the **Automatic Exchange Of Information (AEOI)** regarding bank accounts on a global level, between tax authorities with the objective of combating tax evasion.

Double Taxation

Avoidance Agreement (DTAA)

- A DTAA is a **tax treaty signed between two or more countries**. Its key objective is that tax-payers in these countries can avoid being taxed twice for the same income.
- A DTAA applies in cases where a **taxpayer resides in one country and earns income in another**.
- DTAA's can either be comprehensive to cover all sources of income or be limited to certain areas such as taxing of income from shipping, air transport, inheritance, etc.

International Consortium of Investigative Journalists (ICIJ)

- ICIJ is a **United States based nonprofit organization** with a global network of reporters and media organizations who work together to investigate the most important issues in the world.
- ICIJ has released several important investigations – including the **Pulitzer Prize-winning Panama Papers**.
- ICIJ is fully funded by donations.
- ICIJ encourages tips, leaks and story ideas from the public, whistleblowers, as well as from investigative journalists.

Note:



Global Innovation Index-2019

The Government of India, has launched the **Global Innovation Index (GII)** in New Delhi.

- This is the first time that the GI is being launched in an emerging economy.
- The **Department for Promotion of Industry and Internal Trade (DPIIT) of Ministry of Commerce and Industry**, Government of India, **World Intellectual Property Organization (WIPO)** and **Confederation of Indian Industry (CII)** are co hosting the event.

India's Performance

- India's ranking in the **Global Innovation Index** is **52** which shows an improvement of 5 points from last year's ranking (57).
- India's ranking has been **consistently improving** over the last few years and is among the top in the world in innovation drivers such as **Information and Communication Technology (ICT)**, services exports, graduates in science and engineering, the quality of universities, gross capital formation (a measure of economy-wide investments) and creative goods exports.
- India stands out in the world's top science and technology clusters, with Bengaluru, Mumbai, and New Delhi featuring among the top 100 global clusters.
- India continues to be the most innovative economy in central and southern Asia (a distinction held since 2011).

Global Performance

- **Switzerland tops** the GI index followed by Sweden, United States of America, Netherlands, United Kingdom, Finland, Denmark, Singapore, Germany and Israel.

Global Innovation Index

- The **theme of GI- 2019 (12th edition)** is **"Creating Healthy Lives - The Future of Medical Innovation"** which aims to explore the role of medical innovation as it shapes the future of medical sector.
- It is published annually by **Cornell University, INSEAD and the UN World Intellectual Property Organization (WIPO)**.
- The GI relies on two sub-indices:
 - Innovation Input Sub-Index.

- Innovation Output Sub-Index.
- These sub indices are built around several key pillars namely, Input pillar and Output pillar:
 - Input pillars capture elements of the national economy that enable innovative activities
 - Institutions
 - Human capital and research
 - Infrastructure
 - Market sophistication
 - Business sophistication.
 - Output pillars capture actual evidence of innovation outputs:
 - Knowledge and technology outputs
 - Creative outputs

Sahamati

Sahamati is a new platform developed by Nandan Nilekani which aims to make bank account operations paperless.

- Sahamati is a Collective of **Account Aggregator (AA)** ecosystem being set up as a non-government, private limited company. AA is a process by which information from all of an individual's or household's accounts is collected in one place.
- The architecture of AA is based on the **Data Empowerment and Protection Architecture (DEPA)** framework.

Data Empowerment and Protection Architecture (DEPA) Framework

- **Data Empowerment and Protection Architecture (DEPA)** is a new approach, a paradigm shift in personal data management and processing that transforms the current organization-centric system to **individual-centric system**.
- By giving people the power to decide how their data can be used, DEPA **enables the collection and use of personal data** in ways that empower people to access better financial, healthcare, and other important services in real-time while preserving the safety, security and privacy of the user.

Background

- The RBI in 2016 approved **Account Aggregator** as a new class of NBFC, whose primary responsibility is

Note:



to facilitate the transfer of user's financial data with their explicit consent.

- However, currently, no such mechanism exists, even if the user wishes to share data.
- Therefore this AA ecosystem will allow for the seamless sharing of data between financial bodies of all kinds centred around user consent (i.e 'Sahamati').
- The **main responsibilities of the account aggregator** are to provide services based on the explicit consent of individual clients.
- Account Aggregator (AA) is the construct/framework that **provides a digital platform for easy sharing and consumption of data** from various entities with user consent. This primarily includes transfer, but not storing, of a client's data.
 - An AA is '**data-blind**' as the data that flows through an AA is encrypted. Also, an AA does not and cannot store any user's data – thus, the potential for leakage and misuse of user's data is prevented.
- RBI and other **Financial Services Regulators (FSRs)** are providing the required regulatory support and guidance for the roll-out of AA.
- The scope of Sahamati can be expanded to accommodate other domains such as healthcare and telecom in future.

Need

- Currently, an individual's data is spread across silos and islands in banks, telcos, healthcare institutions with no framework in place for them to share with their benefactors. This data is essential to help build better products for the individual/entity.
- An individual/entity has to collect, collate and share data themselves either physically or electronically. This is slow, and an expensive exercise.
- There is no framework available to integrate and aggregate them that can provide a full view of an individual/entity's data.
- Also, there is no framework available that can let an entity access users' data even with users' permission.
- As a result, there is still friction in accessing data and a large amount of data is not effectively leveraged.

- Hence, the transition of 'data-rich society' to an 'economic rich society' is still not happening.

Seed Bankers for Conserving Native Crops

A total of 1597 varieties have been registered with [Protection of Plant Varieties and Farmers' Rights Authority](#) and certificates of registration have been issued.

India's Seed Bank

- India has established its own seed storage facility at **Chang La in Ladakh, Jammu and Kashmir**.
- It was built jointly by the **Defence Institute of High Altitude Research (DIHAR)** and the **National Bureau of Plant Genetic Resources (NBPGR)** in 2010 under the aegis of **Defence Research and Development Organisation (DRDO)**.
- It stores over 5,000 seed accessions (one accession consists of a set of seeds of a particular species collected from different geographical and demographic locations).

Note: **Svalbard Global Seed Vault** is the world's largest seed storage facility situated at Norway.

ICAR-National Bureau of Plant Genetic Resources (NBPGR)

- It is a **nodal organisation for the management of plant genetic resources in India** and functions under the control of **Indian Council of Agricultural Research (ICAR)**.
- It is conserving seed germplasm for long-term conservation (at -20°C) in its **National Gene Bank (NGB)**.
- It plans, organizes, conducts and coordinates exploration and collection of indigenous and exotic plant genetic resources.

Protection of Plant Varieties and Farmers' Rights Authority

- It is a **statutory body** created under the [Protection of Plant Varieties and Farmers Rights Act, 2001 \(PPV&FR Act\)](#).
- Plant Genome Saviour Reward is also given by it to the farmers engaged in the conservation of genetic resources of landraces and wild relatives of economic plants and their improvement.

Note:



Objectives

- Establishment of an effective system for the protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants.
- Recognition and protection of the rights of farmers with respect to their contribution in conserving, improving and making available plant genetic resources for the development of new plant varieties.
- Accelerate agricultural development in the country by stimulation of investment for research and development both in the public and private sector.
- Facilitate the growth of seed industry to ensure the availability of quality seeds and planting material to the farmers.

Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPV&FR Act)

- It has been enacted to fulfill India's obligation under the Agreement on **Trade Related aspects of Intellectual Property Rights (TRIPs)** of the **World Trade Organization** as also to stimulate investment in Research and Development for the development of new plant varieties which will facilitate the growth of the seed industry and ensure the availability of high quality seeds to the farmers.
- The Protection of Plant Varieties & Farmers' Rights Act, 2001 provides for the establishment of an effective system for the protection of plant breeders' rights.
- According to section 39 of the Act, farmers are allowed to save, use, sow, re-sow, exchange, share and even sell farm produce including seed of a protected variety. But when it is sold, it cannot be packaged and branded as such.

Microdots Technology

The **Ministry of Road Transport and Highways** has issued a draft notification to make microdots mandatory in vehicles.

- The draft rules amend the **Central Motor Vehicles Rules, 1989** and allow motor vehicles and their parts to be affixed with permanent and nearly invisible microdots that can be read physically with a microscope and identified with ultraviolet light.
- The microdots would have to comply with the **Automotive Industry Standard – 155 (AIS 155) requirements**.
 - The Standards are developed by the **Automotive Industry Standards Committee (AISC)** set up under **Central Motor Vehicles Rules - Technical Standing Committee (CMVR-TSC)** by the **Ministry of Road Transport & Highways**.
- Microdots are a **globally proven technology** to ensure originality in spare parts of machines and components, including in the **automobile sector**.
 - The microdot technology involves spraying thousands of microscopic dots onto vehicles or other assets to form a unique identification.
 - Each microdot carries this identification which is registered to the owner but is not visible to the naked eye.
 - **South Africa** has made it a **legal requirement** to have microdots fitted to all new vehicles sold since September 2012.
- The move is aimed at making India free from **vehicle thefts and spurious spare parts**.
 - The government has envisaged that with microdots becoming a permanent feature on vehicles, identifying them would become easier in case they are stolen.
 - Annually about 2.14 lakh vehicles are stolen across the country, with Delhi topping the list at 38,644 in 2016 followed by UP (34,480) and Maharashtra (22,435).
 - The move will ensure that consumers have a way of identifying original parts from fake ones and that contributes to overall safety as well.



Note:



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International Relations

Highlights

- India Ratifies Convention to Prevent BEPS
- Eastern Economic Forum
- Rakhine State Development Programme
- India Connects Bangladesh and Bhutan
- Next Dalai Lama
- SAGAR MAITRI
- Palau Joins ISA

India Ratifies Convention to Prevent BEPS

Recently India has ratified the **Multilateral Convention to Implement Tax Treaty Related Measures (MLI)** to prevent **Base Erosion and Profit Shifting (BEPS)**.

- The MLI is aimed to prevent firms from moving profit out of the country.
 - It ensures that profits are taxed where substantive economic activities generating the profits are carried out.
- Out of 93 tax treaties notified by India, 22 countries have already ratified the MLI so far and the **Double Taxation Avoidance Agreement (DTAA)** with these countries will be modified by MLI.
 - For the remaining countries which have tax treaties with India, the MLI will come into force when they ratify it.
- The MLI will come into force for India from Oct 1, 2019.

The Multilateral Convention to Implement Tax Treaty Related Measures (MLI)

- The multilateral convention is an outcome of the **OECD/G20 Project** to tackle base erosion and profit shifting.
- This project was designed to work on anti-evasion measures that could curb tax planning strategies which exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations.
 - Such geographies have little economic activity, resulting in little or no overall corporate tax being paid.
- The MLI will be applied alongside existing tax treaties, modifying their application, in order to implement the BEPS measures.

- It will lead to amendments to **DTAA** with the countries signatories to the convention to plug revenue leakages.

Eastern Economic Forum

The **Eastern Economic Forum** will be held from 4th-6th Sept 2019 in **Vladivostok, Russia**. The Indian Prime Minister has been invited as the chief guest to the Forum.

- In a build-up to the **Prime Minister's Vladivostok** visit, India and Russia held a **Strategic Economic Dialogue** in New Delhi on 10th July 2019.

Eastern Economic Forum

- The **Eastern Economic Forum** was established by the decree of the President of the Russian Federation in the year 2015.
- It takes place each year in **Vladivostok**.
- It serves as a platform for the discussion of key issues faced by the world economy like regional integration, and the development of new industrial and technological sectors, as well as of the global challenges faced by Russia and other nations.
- The Forum Business programme includes a number of business dialogues with leading partner countries in the **Asia-Pacific region**, and with the **Association of Southeast Asian Nations (ASEAN)** – a key integration organization of dynamically developing nations in Southeast Asia.
- Over the years, it has emerged as an international platform for discussing the strategy for developing political, economic and **cultural ties between Russia and the Asia Pacific**.

India-Russia Strategic Economic Dialogue

- The **India-Russia Strategic Economic Dialogue (IRSED)**

Note:



was established following a bilateral **Memorandum of Understanding (MoU)** signed between the **NITI Aayog** and the **Ministry of Economic Development of the Russian Federation** during the **19th edition** of the annual India-Russia Bilateral Summit in the year 2018.

- The **first India-Russia Strategic Economic Dialogue** was held in **St. Petersburg** in the year 2018.
- The recent one is the second such dialogue and focuses on **six core areas** of cooperation, namely,
 - Development of transport infrastructure and technologies;
 - Development of Agriculture and Agro-Processing sector;
 - Small and medium business support;
 - Digital transformation and frontier technologies;
 - Cooperation in trade, banking, finance, and industry;
 - Tourism & Connectivity.

India-Russia Relations

- **India-Russia cooperation** is based on the solid foundations of the:
 - **1971 Treaty of Peace, Friendship and Cooperation** between the **Republic of India and the USSR**,
 - **1993 Treaty of Friendship and Cooperation** between the Republic of India and the Russian Federation,
 - **2000 Declaration on Strategic Partnership** between the Republic of India and the Russian Federation, and
 - **2010 Joint Statement elevating the Partnership to a Special and Privileged Strategic Partnership.**
- Cooperation between India and Russia spans across varied sectors and rests on the fundamental pillars of political and strategic cooperation, military and security cooperation, cooperation in the spheres of economy, energy, industry, science and technology, and cultural and humanitarian cooperation.

Rakhine State Development Programme

Recently, India has handed over 250 pre-fabricated houses to **Myanmar** that could be used by the displaced returnees from Bangladesh.

- The Indian government had taken up the project under its **Rakhine State Development Programme (RSDP)**.
- India signed a development programme for **Rakhine State with Myanmar** in late 2017. The agreement

was designed to assist the Myanmar government to build housing infrastructure for displaced **Rohingyas** in Rakhine State.

- The program includes the creation of an infrastructure in the areas of education, health, agriculture and allied activities, agro-processing, community development sectors and related training in these areas.

Historical context

- More than 700,000 minority Rohingya Muslims fled from Myanmar's Rakhine state to neighbouring Bangladesh since August 2017, **triggering a massive refugee crisis.**

India Connects Bangladesh and Bhutan

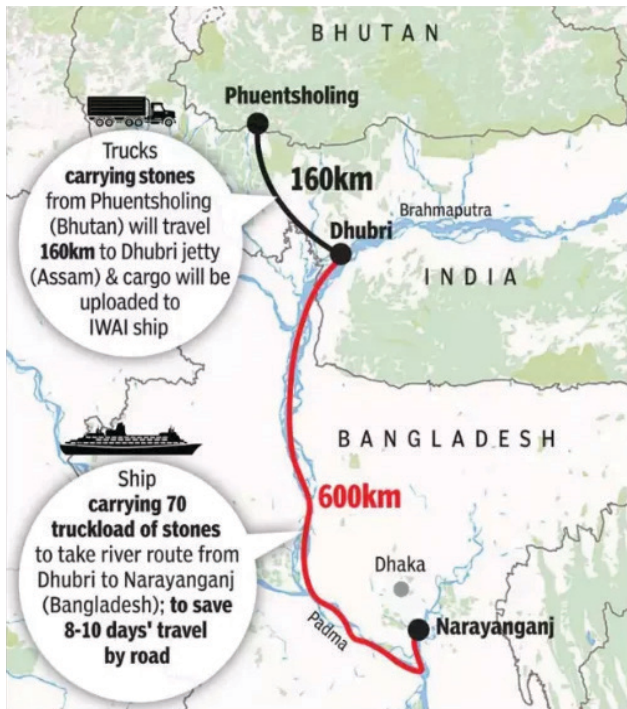
The **Minister of State for Shipping**, digitally flagged off a ship of the **Inland Waterways Authority of India (IWAI)**, carrying a stone from **Bhutan to be delivered in Bangladesh.**

- This is the **first time** an Indian waterway is being used as a channel for transport of cargo between the two countries, using India for transit.
- This is beneficial to India as well as Bhutan and Bangladesh. It will strengthen relations between the neighbouring countries. Also, waterways are more friendly mode of transport.
- The ship '**MV AAI**' has set sail over **river Brahmaputra** from **Dhubri in Assam** to **Narayanganj in Bangladesh.** It follows the **Indo Bangladesh Protocol Route.**
- The transport of cargo through this route will cut short the travel time by 8-10 days, and reduce transportation cost by 30%, consequently, bringing down the logistics costs.
- It also opens up an alternate route to the North-Eastern states, making it easier and cheaper to transfer goods to these places from other parts of the country.
- Till now, Bhutan has been exporting significant quantity of stone aggregates to Bangladesh through the land route.

The Indo Bangladesh Protocol Route

- It is an inland water transit and trade protocol that exists between India and Bangladesh. Under this, inland vessels of one country can transit through the specified routes of the other country.

Note:



- The existing protocol routes include Kolkata-Pandu-Kolkata, **Kolkata-Karimganj - Kolkata, Rajshahi-Dhulian-Rajshahi, and Pandu-Karimganj-Pandu**. The other routes can be prescribed by the **Competent Authorities** from time to time.
- For inter-country trade, an equal number of ports of call have been designated in each country that includes **Haldia, Kolkata, Pandu, and Karimganj in India, and Narayanganj, Khulna, Mongla, and Sirajganj in Bangladesh**.
 - A port of call is an intermediate port where ships customarily stop for supplies, repairs, or transshipment of cargo.
- Under the Protocol, 50:50 cargo sharing by **Indian and Bangladeshi vessels is permitted** both for transit and inter-country trade.
- **Inland Waterways Authority of India (IWAI) is the Competent Authority of India.**
 - The **IWAI** came into existence on 27th October 1986 for development and regulation of inland waterways for shipping and navigation.
 - The Authority primarily undertakes projects for development and maintenance of **Inland Water Transport (IWT)** infrastructure on **national waterways** through grant received from the Ministry of Shipping.
 - The head office of the Authority is located in **Noida**.

Initiatives to Increase the Use of Inland Waterways

- The Government is taking various initiatives to increase the use of inland waterways and coastal shipping for greater cargo shipment. These include providing the assured depth of water in the channels, navigation aids like Global Positioning System (GPS) and River Information System, terminals at regular intervals, facilities for mechanized handling of cargo, etc.
- A minimum 40% discount and priority in berthing is being given to coastal vessels at major ports.
- Licensing relaxations have been made under section 406 and 407 of the Merchant Shipping Act 1958 for fertilizers, agricultural products, fisheries, horticultural, and animal husbandry products, empty containers and containers being transhipped from another Indian port.

Next Dalai Lama

Recently, China has urged India not to recognize a successor to the Tibetan spiritual leader that it doesn't endorse.

- China has held that it will reject any reincarnation of the Dalai Lama born among Tibetan exiles in India or elsewhere.
- The reincarnation of the Dalai Lama is a historical and controversial issue.
- Following the Buddhist belief in the **principle of reincarnation**, the current Dalai Lama is believed by Buddhists to be able to choose the body into which he is reincarnated.
 - That person, when found, will become the next Dalai Lama.

Dalai Lama

- Dalai Lama is a title given by the **Tibetan people** for the foremost spiritual leader of the **Gelug or "Yellow Hat"** school of Tibetan Buddhism- the newest of the classical schools of **Tibetan Buddhism**.
- The 14th and current Dalai Lama is **Tenzin Gyatso**.
- The Dalai Lamas are believed to be manifestations of **Avalokiteshvara or Chenrezig**, the **Bodhisattva of Compassion** and the **patron saint of Tibet**.
 - **Bodhisattvas** are enlightened beings inspired by a wish to attain **Buddhahood** for the benefit of all sentient beings, who have vowed to be reborn in the world to help humanity.

Note:

- According to Buddhist scholars, it is the responsibility of the High Lamas of the Gelugpa tradition and the Tibetan government to seek out and find the next Dalai Lama following the death of the incumbent one.
- If more than one candidate is identified, the true successor is found by officials and monks drawing lots in a public ceremony.
- Once identified, the successful candidate and his family are taken to **Lhasa (or Dharamsala)** where the candidate studies about Buddhist scriptures in order to prepare for spiritual leadership.
- But, according to China, there was a well-established procedure for recognizing the reincarnation of the Dalai Lama,
 - One of the conditions was that the name of the successor was pulled out of golden urns found in the **Jokhang Temple** (one of the most sacred monasteries of Tibetan Buddhism situated in Lhasa) and the **Potala Palace**, which was the residence of the Dalai Lama till he fled to India in 1959.
 - The second was the reincarnation getting the approval of the Chinese government.

SAGAR MAITRI

- Oceanographic research vessel of **Defence Research and Development Organisation (DRDO)**, **INS Sagardhwani**, embarked on a two-month-long **SAGAR MAITRI Mission-2**.
- SAGAR MAITRI is a unique initiative of DRDO with the broad objective of **“Safety And Growth for All in the Region (SAGAR)”**. It promotes closer co-operation in socio-economic aspects as well as greater scientific interaction especially in ocean research among **Indian Ocean Rim Association (IORA)** countries.
- **“MAITRI (Marine & Allied Interdisciplinary Training and Research Initiative)”** is the specific scientific component of DRDO.

Objectives of SAGAR MAITRI

- The prime objectives of the **SAGAR MAITRI Mission** are data collection from the entire **North Indian Ocean**, focusing on the **Andaman Sea and adjoining seas**, and establishing a long-term collaboration with eight **IOR countries** in the field of ocean research and development.

- The programme also aims at establishing long term scientific collaboration with these countries in the field of **‘Ocean Research & Development’** and data collection with a focus on the Andaman Sea.

Palau Joins ISA

- **Palau** became the **76th country** to sign the **International Solar Alliance** framework agreement.
- Palau will host the 2020 edition of the **‘Our Oceans conference’**, (based on the concept of partnership - **“big brothers working with small brothers to address sustainable development issues”**) which will focus on issues such as climate change, sustainable fisheries and marine pollution.
- The ISA was jointly launched by India and France at the **UN Climate Change Conference** in Paris on November 2015.
- The **First Assembly of the ISA was held in New Delhi in 2018**.

Palau

- **Palau** is a country in the western Pacific Ocean that consists of **coral and volcanic islands** surrounded by a single barrier reef.
- Palau lies in the **southwest corner of Micronesia** (country spread across the western Pacific Ocean comprising more than 600 islands), with New Guinea to the south, and the Philippines to the west.



- Its major populated islands are **Babelthuap (Babeldaob), Koror, Malakal, Arakabesan, and Peleliu**.
- There is a concern that the **low-lying islands** could be badly affected by rising sea levels possibly due to climate change.



Note:

Science and Technology

Highlights

- NASA's PUNCH Mission
- National Centre for Polar and Ocean Research (NCPOR)
- Total Solar Eclipse 2019
- Ascent Abort Test-2
- Schizophrenia
- Project Manav
- A New Way of Predicting Monsoon
- Agent Smith Malware
- Central Equipment Identity Register
- Spektr-RG
- Cape Verde Turtles and Climate Change
- Apollo 11: 50 Years
- Spent Pot Lining
- Ramanujan Machine
- Ploonet
- Rocket Fuel
- Chandrayaan-2: Launched Successfully
- Milky Way's Violent Birth Decoded
- China's First Commercial Rocket
- TOI 270 System

NASA's PUNCH Mission

Dipankar Banerjee, a solar physicist from **Indian Institute of Astrophysics** is a co-investigator of NASA's PUNCH mission.

- PUNCH, which stands for “**Polarimeter to Unify the Corona and Heliosphere**”, will study the transition of particles from the Sun's outer corona to the solar wind that fills interplanetary space.
- **PUNCH** will consist of a constellation of four suitcase-sized microsats that will orbit the Earth and study how the **corona**, which is the atmosphere of the Sun, connects with the interplanetary medium.
- The mission will also image and track the **solar wind and coronal mass ejections**. The coronal mass ejections can affect and drive space weather events near the Earth.
- There is also a plan to observe the Sun using joint observations from PUNCH and Indian **mission Aditya**, which is underway. India is planning to send up its own satellite **Aditya-L1** with an aim to study the Sun's corona.
- The mission is expected to be launched in the year 2022.

Note:

- **Corona:** It is the outermost region of the Sun's atmosphere, consisting of plasma (hot ionized gas).

- **Solar Wind:** It is the constant stream of solar coronal material that flows off the sun.
- **Interplanetary Medium:** It refers to thinly scattered matter that exists between the planets and other bodies of the solar system, as well as the forces (e.g., magnetic and electric) that pervade this region of space. The material components of the interplanetary medium consist of **neutral hydrogen, plasma gas** comprising electrically charged particles from the Sun, cosmic rays, and dust particles.

National Centre for Polar and Ocean Research (NCPOR)

The six **Himalayan glaciers**, monitored by the **National Centre for Polar and Ocean Research (NCPOR)**, have been retreating in the range of 13 to 33 millimetres per year.

- Six glaciers i.e. **Sutri Dhaka, Batal, Bara Shigri, Samudra Tapu, Gepang Gath and Kunzum** are monitored for mass, energy and hydrological balance.
 - Debris of thickness above two centimetres has reduced the melting rates up to 70%, whereas the debris cover of below two centimetres thickness has accelerated melting up to 10% of the total melting.
- The NCPOR has undertaken studies in the Western Himalaya in Chandra basin in **Lahaul-Spiti (Himachal Pradesh)** since 2013.

Note:



- The NCPOR has also established a high altitude research station named '**Himansh**' in Himalaya at 4,000 metres altitude at Sutri Dhaka.

National Centre for Polar and Ocean Research

- It was established as an **autonomous Research and Development Institution** of the Ministry of Earth Sciences in 1998.
- Earlier known as **National Centre for Antarctic and Ocean Research (NCAOR)**, NCPOR is India's premier R&D institution responsible for the country's research activities in the Polar and Southern Ocean realms.
- It is the nodal agency for **planning, promotion, coordination and execution** of the entire gamut of polar and southern ocean scientific research in the country as well as for the associated logistics activities.
- Its responsibilities include:
 - Management and upkeep of the Indian Antarctic Research Bases "**Maitri**" and "**Bharati**", and the Indian Arctic base "**Himadri**".
 - Management of the Ministry's ocean research vessel (ORV) **Sagar Kanya** as well as the other research vessels chartered by the Ministry.

Note: The **ORV Sagar Kanya** is an ocean observing platform equipped with technologically advanced scientific equipment and related facilities.

- It plays a facilitatory role in the scientific research activities being undertaken by several national institutions and organizations in Antarctica, the Arctic and in the Indian Ocean sector of the Southern Ocean.
- It plays a lead role in the **geoscientific surveys** of the country's **Exclusive Economic Zone (EEZ)** and it has extended continental shelf beyond 200m, deep-sea drilling in the Arabian Sea basin through the **International Ocean Discovery Program (IODP)**, exploration for ocean non-living resources such as **gas hydrates** and multi-metal sulphides in mid-ocean ridges.
- It's headquarters is located in Goa.

International Ocean Discovery Program (IODP)

- It is an international marine research collaboration that explores Earth's history and dynamics using ocean-going research platforms to recover data recorded in seafloor sediments and rocks and to monitor subseafloor environments.

- It is in Phase II (tenured 2013-2023) of what was formerly known as the **Integrated Ocean Drilling Program – Phase I**.
 - Phase I which was envisioned in the year 2003, ceased in October 2013, after which its 26 participating nations have continued collaboration through the International Ocean Discovery Program: Exploring the Earth under the sea. India joined the Phase I in the year 2009 as an Associate Member.
- India's continued participation in Phase II as a member of the International Ocean Discovery Program is a result of an agreement signed in September 2014.
- **NCPOR** is the **nodal agency** for all the IODP related activities in India.

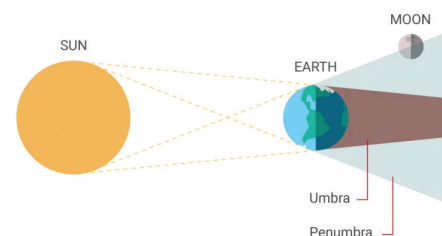
Total Solar Eclipse 2019

A total Solar Eclipse was witnessed in the region of the South Pacific and parts of **South America (Mainly Chile and Argentina)**.

- This was the only total solar eclipse observed in 2019.
- It was viewed from the world's clearest skies (**Atacama desert**).
- The Total Solar Eclipse was not visible in India.

Solar and Lunar Eclipse

- **Solar eclipses** occur when the **Sun, Moon and earth** all fall in the same line so that the Moon passes between Earth and the Sun, leaving a moving region of shadow on Earth's surface.
- **Lunar eclipses** occur when the Sun, Moon and earth all fall in the same line and Earth passes between the Sun and the Moon, **casting a shadow on the Moon**.
- Eclipses may be classified into 4 types i.e. Annular, Total, Partial and Hybrid.
- The type of eclipse we experience depends on the type of shadow that is involved.
 - Both the Moon and Earth cast 3 shadows: **umbra, penumbra, and an antumbra**.



Note:



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- The umbra is a **shadow's dark core**. The light source is not visible and the object blocks all direct light rays.
- The penumbra is a **half-shadow** that occurs when a light source is only partly covered by an object
- **Antumbra** – the **lighter part of the shadow** that begins where the umbra ends.

Total or Annular Solar Eclipse

- The Moon completely covers the Sun but whether an eclipse is total or annular depends on the distance between these three objects (Sun, Moon and Earth).
 - Earth travels in an elliptical orbit around the Sun, and the Moon travels in an elliptical orbit around Earth, so the distance between these celestial bodies changes.

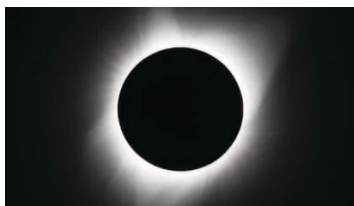
➤ **Annular solar eclipse:**

- When the Sun is nearest to Earth and the Moon is at or near its greatest distance, the Moon appears smaller than the Sun in the sky. When an eclipse of the Sun happens in this situation, the Moon will not appear large enough to cover the disk of the Sun completely, and a rim or ring of light will remain visible in the sky.



Total Solar Eclipse

- Total solar eclipses occur when the New Moon comes between the Sun and Earth and casts the darkest part of its shadow, the umbra, on Earth. A full solar eclipse, known as a totality, is almost as dark as night.
- During a total eclipse of the Sun, the Moon covers the entire disk of the Sun. In partial and annular solar eclipses, the Moon blocks only part of the Sun.
- When the Moon completely covers the disk of the Sun, only the Sun's corona is visible.



- It is called Total eclipse because at the maximum point of the eclipse (midpoint of time of totality), the sky goes dark and temperatures can fall.
- The reason why solar eclipses are so rare is that the Moon's umbra rarely hits the Earth's surface. Even during a total solar eclipse, the umbra only covers a small area on earth(path of totality).
- That's why viewing a solar eclipse often depends upon where the viewer observes the event. A partial eclipse may be seen by viewers who stand outside of the region of shadow created by the umbra—the path of totality—but for those who remain within the large region of shadow covered by the penumbra, a region of lesser shadow where some light still penetrates.

Hybrid Eclipse

- A hybrid eclipse is a rare type of solar eclipse that changes its appearance as the Moon's shadow moves across the Earth's surface.
- A hybrid eclipse is a type of solar eclipse that looks like an annular solar eclipse or a total solar eclipse, depending on the observer's location along the central eclipse path.
- During a hybrid solar eclipse, the Earth's curvature brings some sections of the eclipse path into the Moon's umbra, the darkest part of its shadow that creates total solar eclipses, while other areas remain outside the umbra's reach, causing an annular eclipse.

Partial Eclipse

- Both solar and lunar eclipses may also occur as Partial Eclipses.
 - A partial eclipse of the Sun also results when the Moon's penumbra falls on Earth but its umbra does not.
 - A partial eclipse of the Moon occurs when the Moon passes through only part of Earth's umbra or only its penumbra.
- The Moon does experience total eclipses. If the eclipse is a total lunar eclipse, the Moon will pass through the umbra (area of total shadow) created by Earth over the course of about two hours.
- There are no Annular lunar eclipse because the Earth is much bigger than the Moon, and its shadow will never be small enough to leave a ring.
- Since the Moon is much smaller than Earth, there is no path of totality in a lunar eclipse. The eclipse will

Note:



be visible to any observer on the night side of Earth when the eclipse occurs.

- During a lunar eclipse, Moon does not typically go completely dark; it often takes on a red colour, because the redder parts of sunlight that penetrates the Earth's atmosphere are refracted into the umbra, and this light reaches the Moon.

Ascent Abort Test-2

NASA has carried out a successful test of a **Launch-Abort System (LAS)** for the **Orion capsule** designed to take U.S. astronauts to the Moon.

- The test of the Orion's LAS is also called the **Ascent Abort Test-2 (AA-2)**.
- The aim was to test in almost real-life conditions the evacuation of astronauts from the capsule in the event of an explosion or rocket booster failure.
- The test is a milestone in NASA's preparation for **Artemis missions** to the Moon that will ultimately lead to astronaut missions to Mars.

Note:

The Artemis program will send the first woman and the next man to the Moon by the year 2024 and develop a sustainable human presence on the Moon by the year 2028.

Orion Capsule

- The safest spacecraft ever built, Orion, will execute the **Artemis program**.
- An integral part of ensuring safe spaceflight is **Orion's Launch Abort System** or LAS. This state-of-the-art crew escape system is attached to the top of the spacecraft and can propel the crew escape from the rocket within milliseconds should a life-threatening event arise during the launch.

Demonstration by the Test

- In the test, an unmanned Orion capsule was launched by a mini-rocket.
- Fifty-five seconds after the launch, at an altitude of 9,500 m, a rocket-powered tower on top of the crew module ignited its engines to quickly pull the Orion away from a hypothetical rocket experiencing problems.
- In just 15 seconds, the capsule gained two miles of altitude. Then the tower reoriented the capsule to

prepare it for descent and disengagement from the tower, finally, the crew module fell into the Atlantic Ocean.

- In real-life conditions, parachutes would also open to ease the manned capsule's fall toward the Atlantic Ocean.

Schizophrenia

Indian and Australian scientists have identified a new gene directly linked to **Schizophrenia**.

- Their study found a gene called **NAPRT1**, that encodes an enzyme involved in **vitamin B3 metabolism**, in a large genomic dataset of schizophrenia patients.
- The study has predominantly been done in populations with European ancestry.

Schizophrenia

- **A mental disorder:** It is a severe **mental disorder**, characterized by profound disruptions in thinking, affecting language, perception, and the sense of self. It affects more than 21 million people worldwide.
- **Cause:** Researchers believe that genetic, as well as environmental factors such as exposure to viruses, are the major causes, and also life stressors may play a role in the disorder's onset and course.
- **Onset:** It typically begins in late adolescence or early adulthood.
- **Impact:** Hallucinations, delusions, reduced speaking, reduced ability to understand information and decision making, trouble in focusing or paying attention etc.
- **Schizophrenia treatment:** Therapy and support can help people learn social skills, cope with stress, identify early warning signs of relapse and prolong periods of remission.

Project Manav

A human atlas initiative named **Manav** has been launched by the **Department of Biotechnology (DBT)** and **Persistent Systems**, a biotechnology company.

- The aim is to create a unified database of the molecular network of all the tissues in the human body and to derive a holistic picture of working of the human body.
- There is already a similar **Human Cell Atlas project** (launched in the year 2016), which is a collaborative

Note:



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effort between the world-leading scientists, to generate data pertaining to cellular and molecular activities of various cell types in the body in both its normal and disease state using techniques such as single-cell genomics.

- The Indian project, on the other hand, depends on the knowledge already available in scientific literature to derive information on the cellular network.

About the Project

- This mega project will **collate and integrate molecular information** on human tissues and organs that currently remain in research articles in an unstructured and disorganised form.
- The project would utilise large biological community, both students and scientists, for extracting and adding the information from scientific literature at the level of cells and organs.
- The database, that would get created, would eventually help researchers identify gaps in current knowledge and help in future projects in diagnostics and disease biology.
- Also, the information gathered in the project will help scientists to understand the differential molecular factors which vary between diseased states vis-a-vis a healthy state of an organ.
- The project will be executed by the **Indian Institute of Science Education and Research (IISER)** and the **National Center for Cell Sciences (NCCS)** based in Pune.
 - While the institutes will train students, the technology platform and data management will be provided by the private partner.
 - **IISER** is an autonomous institution established by the **Ministry of Human Resource Development**.
 - **NCCS** is an autonomous organisation aided by the **Department of Biotechnology, Ministry of Science and Technology**.
- This initiative will also help in creating a trained population of biologists, with the data curation and analytical **skills imparted during this project**, students will have better opportunities for jobs in the life science sector.
- The data methodology and technical platform developed during this project can also be extrapolated to do other science projects on biodiversity, ecology, environment etc. which may be relevant nationally or globally.

A New Way of Predicting Monsoon

A researcher at a science and technology conference organised in Vienna by the **Comprehensive Nuclear-Test-Ban Treaty Organisation** has come up with a new way of predicting the monsoon,

- The method measures how much **Beryllium-7**, an isotope of the element Beryllium, is present in the air.
- Be-7 is chosen because it is created only in the stratosphere when cosmic rays hit and **break** the nuclei of **nitrogen and oxygen**.
- During monsoons the air flows down from the stratosphere (upwards of 33,000 feet from the earth's surface), bringing some Be-7. Thereby making the prediction of monsoon more reliable.
- Research proposes that there is a strong connection between the amount of Be-7 and the timing of monsoons, which is yet to be proven.

Comprehensive Nuclear-Test-Ban Treaty Organization

- The Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) is an international organization, established upon the entry into force of the **Comprehensive Nuclear-Test-Ban Treaty in 1996**.
- Its headquarter is in **Vienna, Austria**.
- The organization is tasked with verifying the ban on nuclear tests and therefore operates a worldwide monitoring system and may conduct on-site inspections.
- The CTBTO runs the **International Monitoring System (IMS)** of 300-odd stations, which can sense vibrations, hear sounds or smell noble gases (such as Xenon, Krypton) 'radionuclides' (such as Beryllium-7).
- IMS can detect any **nuclear explosion globally**.

Agent Smith Malware

A study by Checkpoint research (a [cybersecurity services provider](#)) has revealed that "**Agent Smith**", a new variant of **smartphone malware**, has infected around 25 million Android devices globally, including 15 million mobile devices in India.

- Agent smith malware exploits known **android vulnerabilities** and automatically replaces installed

Note:



apps with malicious versions without the user's knowledge or interaction.

- **Malware** currently uses its broad access to the resources of the mobile device to show fraudulent ads for financial gain, and could easily be used for far more intrusive and harmful **cyberattacks** such as banking credential theft and eavesdropping.
- **Check Point Research** notes that the activity of Agent Smith resembles how other malware like **CopyCat, Gooligan, and HummingBad** have operated in the past.
 - All three malware campaigns have generated huge revenue through fraudulent ads on virus-infected Android devices.
- "Agent Smith" was originally downloaded from the widely used third-party app store, 9Apps and targeted mostly Hindi, Arabic, Russian and Indonesian-speaking users.
- Primary victims of malware are based in India though other Asian countries such as Pakistan, Bangladesh, the United Kingdom, Australia and the United States have also been impacted by the malware.

Central Equipment Identity Register (CEIR)

Department of Telecommunications (DoT) under the **Ministry of Communications** has initiated a **CEIR** for mobile service providers.

- The **National Telecom Policy of 2012** calls for the establishment of a **National Mobile Property Registry** to address the issue of security, theft, and other concerns including reprogramming of mobile handsets.

Central Equipment Identity Register

- It will be a central repository or database of all mobile phones connected to networks across India.
 - Every mobile network provider in India has an **Equipment Identity Register (EIR)**, or a database of the phones connected to its network.
 - These EIRs will now share information with a single central database, i.e CEIR.
- CEIR will have information on the Device's:
 - International **Mobile Equipment Identity (IMEI) number**.
 - Model
 - Version

International Mobile Equipment Identity

- Every phone or mobile broadband device has this unique 15 digit code that precisely identifies the device.
- Mobile phone manufacturers assign IMEI numbers to each device based on ranges allotted to them by the **Global System for Mobile Communications Association**.
- Dual-SIM phones will have two IMEI numbers.

Objective of CEIR

- Such centralized databases are meant to identify and **block stolen or illegal mobile phones** across networks.
 - Presently, when a customer reports a mobile phone as missing or stolen, mobile service providers have the ability to blacklist the phone's IMEI in their EIRs and block it from accessing their network.
 - But if the SIM is changed to a new network, it can continue to be in use whereas in case of CEIR all network operators will be aware that the phone is blacklisted.
- The CEIR will also access the GSMA's database of IMEI numbers to check whether the phone is authentic.
 - There are cases of phones being in use with duplicate IMEI numbers or with all zeros instead of an authentic IMEI number.
- CEIR will be able to block services to subscribers, unlike the present system that allows only individual networks to block services in case of theft and or stolen mobiles.

Concerns

- The major issue with CEIR is to identify the authority that should maintain such a high-value database (whether the service provider or a neutral third party).
- Another major issue is cloning or reprogramming stolen or unauthorized mobile phones to attach existing genuine IMEI numbers.
 - As blocking cloned IMEI numbers could result in the authentic ones also being blocked.

Spektr-RG

Russia has launched a space telescope, named **Spektr-RG**, in a joint project with Germany.

Note:

- It is intended to replace Spektr-R, known as the Russian **Hubble**. The **Russian Space Agency, Roscosmos**, lost control of the Spektr-R in January 2019.
- Spektr-R was launched in the year 2011 to observe **black holes**, neutron stars and magnetic fields, aiding understanding of cosmic expansion.
- Spektr-RG will take up similar duties but will also work on mapping X-Rays across the sky.

Cape Verde Turtles and Climate Change

A recent study has warned that **Loggerhead turtles** born at a key breeding ground in **Cape Verde (an island country in the central Atlantic Ocean)** will all be turned female because of climate change.

- The sex of turtles is determined by the temperatures at which they are incubated and warm temperatures favour females.
- If high emissions continue, over 90% of turtles could be incubated at lethally high temperatures, killing youngsters before they hatch.
 - Even under a low emissions scenario, 99.86% of hatchlings would be female by 2100.
 - Currently, 84% of hatchlings at Cape Verde are female.
- Cape Verde has the **third-largest population** of nesting loggerhead turtles.
- The **International Union for Conservation of Nature (IUCN)** status of Loggerheads turtle is vulnerable

Loggerhead Turtles

- Loggerhead sea turtles are named for their large heads that support **powerful jaw muscles**, allowing them to crush hard-shelled prey like clams and sea urchins.
- Unlike other sea turtles, they are less likely to be hunted for their meat or shell.
- The accidental capture of marine animals in fishing gear is a serious problem for loggerhead turtles because they frequently come in contact with fisheries.
 - Many of their nesting beaches are under threat from tourism development.
- Loggerheads are the most common turtle in the **Mediterranean**, nesting on beaches from **Greece and Turkey to Israel and Libya**.

- Sea turtles are not only living representatives of a group of reptiles that have existed on Earth for the last 100 million years but are also a fundamental link in marine ecosystems and help maintain the health of coral reefs and seagrass beds.

Apollo 11: 50 Years

The year 2019 marked the **50th anniversary of Apollo 11**. It was the first manned mission to land on the Moon.

- On July 20, 1969, American astronauts **Neil Armstrong** and **Edwin "Buzz" Aldrin** became the first humans ever to land on the moon.
- As Neil Armstrong set took his first step on the moon, he famously said, "That's one small step for man, one giant leap for mankind."
- The Apollo program was designed to land humans on the Moon and bring them safely back to Earth.
- There were five more successful lunar landing missions, and one unplanned lunar swing-by, Apollo 13 (whose lunar landing was aborted due to technical difficulties) under Apollo missions.
- The last men to walk on the moon were astronauts Eugene Cernan and Harrison Schmitt of the Apollo 17 mission.
- Apollo mission was announced at the time (during the Cold War-era) when the United States was still trailing the Soviet Union in space developments.
 - The race was won by the United States when Apollo 11 from the US landed on the moon in 1969, until Apollo 11 landing on the moon, the Soviet Union had been ahead in every department of the space race.
 - Even the first animal put on the moon was a Russian (a **dog named Laika**).

Spent Pot Lining

- Recently, the **National Green Tribunal (NGT)** held a hearing regarding scientific disposal of **spent pot lining (SPL)** from the **aluminium industries**.
- It has also been classified as a hazardous waste under the Hazardous Waste Management Rules, 2016.
- Most SPL is currently stored at the aluminium smelter sites or placed in landfills. Dissolved fluorides and cyanides from SPL **landfill leachate** may have environmental impacts.

Note:



Spent Pot Lining

- Spent Pot Lining is produced by the smelting plants and contains a **high level of cyanide and fluoride and is carcinogenic in nature** and must be scientifically utilised or detoxified. Spent Pot lining is also known as spent **pot liner and spent cell liner**.
- The process of **extracting aluminium metal** from aluminium oxide takes place in electrolytic cells that are known as pots. The pots are made up of steel shells with two linings, an outer insulating or refractory lining and an inner carbon lining that acts as the cathode of an electrolytic cell.
- During the operation of the cell, substances, including aluminium and fluorides, are absorbed into the cell lining. After some years of operation, the pot lining fails and is removed. The removed material is spent pot lining.
- **Hazardous properties** of SPL are:
 - Toxic fluoride and cyanide compounds that are leachable in water and are carcinogenic.
 - Corrosive - exhibiting high pH due to alkali metals and oxides.
 - Reactive with water - producing inflammable, toxic and explosive gases.
- The toxic, corrosive and reactive nature of SPL means that particular care must be taken in its handling, transportation and storage.

pH Scale

- The pH is a scale used to specify how acidic or basic a water-based solution is.
- Acidic solutions have a lower pH, while basic solutions have a higher pH.
- The neutral value of the pH depends on the temperature.
- The usual range of pH values runs from 0 to 14, At room temperature (25°C), pure water is neither acidic nor basic and has a pH of 7.

Ramanujan Machine

Researchers from Technion – Israel Institute of Technology have developed a concept, which is described as a 'Ramanujan machine'.

- It is named after renowned **Indian Mathematician Srinivasa Ramanujan**.

Srinivasa Ramanujan

- Ramanujan was born on **22nd December 1887 in a village some Erode (400 km from Chennai, then known as Madras)**. He was passionate about mathematics from a very young age.
- In India, **December 22nd** is celebrated as **National Mathematics Day** in the memory of Srinivasa Ramanujan.
- The famous **British mathematician Godfrey Harold Hardy** recognised his talent in 1913. It was a turning point in his life. Ramanujan went to Cambridge, on Godfrey Harold Hardy's invitation.
- Ramanujan made substantial contributions to the **analytical theory of numbers and worked on elliptic functions**. He also worked on the partition of the whole number, hypo-geometric series and Euler's constant.
- His papers were published in English and European journals, and in 1918 he was elected to the **Royal Society of London**.
- He died on April 26th, 1920, at the age of 32, just after returning to India after a long illness.

- The Ramanujan machine is more of a concept than an actual machine. It exists as a **network of computers running algorithms** dedicated to finding **conjectures** about fundamental constants in the form of continued fractions.
- The purpose of the machine is to come up with conjectures that humans can analyze and hopefully prove to be true mathematically.
 - Typically, people provide the input and the algorithm finds the solution. The **Ramanujan machine reverses the process**. So if a constant such as π is fed into the machine, it will generate a series whose value would lead towards π .
- **Conjectures:** These are mathematical statements that are, as yet, unproven. New conjectures in mathematics, however, have been scarce and sporadic.
 - The machine is created in the hope that their idea will inspire future generations of mathematicians.

Ploonet

Astronomers have defined a **new class of celestial objects called "Ploonets,"** which are **orphaned moons** that have escaped the bonds of their planetary parents.

Note:

Planet + moon = Ploonet

- The researchers explain that the angular momentum between the planet and its moon results in the moon escaping the gravitational pull of its parent.
- A new study suggests that the moons of gas-giant exoplanets may break away into their own orbits.
- As the **gas giants move inward** toward their suns, the orbits of their moons are often disrupted, according to new computer models.
- The scientists think these objects should exist in solitary orbits around their host stars and could even be discovered in observations from past and present exoplanet-hunting surveys, like [Kepler](#) and [TESS](#).

Rocket Fuel

The fuel that will power the core (or the middle unit of the lower part) of the [GSLV Mk-III](#), the rocket to be used in the [Chandrayaan-2 mission](#) is UDMH (Unsymmetrical Di-Methyl Hydrazine).

- The [Indian Space Research Organisation \(ISRO\)](#) is using the highly toxic and corrosive fuel UDMH (Unsymmetrical Di-Methyl Hydrazine), along with the oxidiser Nitrogen Tetroxide. This is called a “dirty combination”.
- Elsewhere in the world, space programmes have moved to a cleaner and greener fuel — liquid methane or kerosene.
- Shifting to liquid methane would mean bringing in cryogenic engine because any gas would need to be kept in extremely low temperatures to stay liquefied.

Propellant Used in Rocket

The propellant is the chemical mixture burned to produce thrust in rockets and consists of a fuel and an oxidizer.

- Fuel is a substance that burns when combined with oxidiser for propulsion.

- [GSLV Mk III](#) is a three-stage heavy-lift launch vehicle developed by ISRO. The vehicle has two solid strap-ons, a core liquid booster and a cryogenic upper stage.
- [GSLV Mk III](#) is designed to carry 4 ton class of satellites into [Geosynchronous Transfer Orbit \(GTO\)](#) or about 10 tons to [Low Earth Orbit \(LEO\)](#), which is about twice the capability of [GSLV Mk II](#).

- The oxidizer is an agent that releases oxygen for combination with a fuel. The ratio of oxidizer to fuel is called the mixture ratio.

Propellants are classified according to their state - **liquid, solid, or hybrid**.

- **Liquid Propellants:** In a liquid propellant rocket, the fuel and oxidizer are stored in separate tanks and are fed through a system of pipes, valves, and turbopumps to a combustion chamber where they are combined and burned to produce thrust.

- **Advantages:** Liquid propellant engines are more complex than their solid propellant counterparts, however, they offer several advantages. By controlling the flow of propellant to the combustion chamber, the engine can be throttled, stopped, or restarted.

- **Disadvantages:** The main difficulties with liquid propellants are with oxidizers. Storable oxidizers, such as nitric acid and nitrogen tetroxide are extremely toxic and highly reactive, while cryogenic propellants being stored at low temperature and can also have reactivity/toxicity issues.

- Liquid propellants used in rocketry can be classified into three types: **petroleum, cryogens, and hypergolic**.

- Petroleum fuels are those refined from crude oil and are a mixture of complex hydrocarbons, i.e. organic compounds containing only carbon and hydrogen. The petroleum used as rocket fuel is a type of highly refined kerosene.
- Cryogenic propellants are liquefied gases stored at very low temperatures, most frequently liquid hydrogen (LH₂) as the fuel and liquid oxygen (LO₂ or LOX) as the oxidizer. Hydrogen remains liquid at temperatures of $-253\text{ }^{\circ}\text{C}$ ($-423\text{ }^{\circ}\text{F}$) and oxygen remains in a liquid state at temperatures of $-183\text{ }^{\circ}\text{C}$ ($-297\text{ }^{\circ}\text{F}$).
- Hypergolic propellants and oxidizers that ignite spontaneously on contact with each other and require no ignition source. The easy start and restart capability of hypergolic make them ideal for spacecraft manoeuvring systems.
- Since hypergolic remain liquid at normal temperatures, they do not pose the storage problems like cryogenic propellants. Hypergolic are highly toxic and must be handled with extreme care. Hypergolic fuels

Note:



commonly include **hydrazine, monomethyl-hydrazine (MMH) and unsymmetrical dimethyl-hydrazine (UDMH)**.

- **Solid propellant:** These are the simplest of all rocket designs. They consist of a casing, usually steel, filled with a mixture of solid compounds (fuel and oxidizer) that burn at a rapid rate, expelling hot gases from a nozzle to produce thrust. When ignited, a solid propellant burns from the centre out towards the sides of the casing.
 - There are two families of solids propellants: **homogeneous and composite**. Both types are dense, stable at ordinary temperatures, and easily storable.
 - Composites are composed mostly of a **mixture of granules of solid oxidizers** such as **ammonium nitrate, ammonium dinitramide, ammonium perchlorate, or potassium nitrate** in a polymer binding agent.
 - Single-, double-, or triple-bases (depending on the number of primary ingredients) are homogeneous mixtures of one to three primary ingredients.
 - **Advantages:** Solid propellant rockets are much easier to store and handle than liquid propellant rockets. High propellant density makes for compact size as well.
 - **Disadvantages:** Unlike liquid-propellant engines, solid propellant motors cannot be shut down. Once ignited, they will burn until all the propellant is exhausted.
- **Hybrid propellant:** These engines represent an intermediate group between solid and liquid propellant engines. One of the substances is solid, usually the fuel, while the other, usually the oxidizer is liquid. The liquid is injected into the solid, whose fuel reservoir also serves as the combustion chamber.
 - The main advantage of such engines is that they have high performance, similar to that of solid propellants, but the combustion can be moderated, stopped, or even restarted. It is difficult to make use of this concept for very large thrusts, and thus, hybrid propellant engines are rarely built.

Cryogenic Rocket

- A cryogenic rocket engine is a rocket engine that uses a cryogenic fuel or oxidizer, that is, its fuel or oxidizer (or both) are gases **liquefied and stored at very low temperature**.

- A Cryogenic rocket stage is more efficient and provides more thrust for every kilogram of propellant it burns compared to solid and earth-storable liquid propellant rocket stages. **Specific impulse** is achievable with cryogenic propellants (liquid Hydrogen and liquid Oxygen) is much higher compared to earth storable liquid and solid propellants, giving it a substantial payload advantage.
- Oxygen liquefies at -183 deg C and Hydrogen at -253°C also entails complex ground support systems like propellant storage and filling systems, cryo engine and stage test facilities, transportation and handling of cryo fluids and related safety aspects.

Specific Impulse

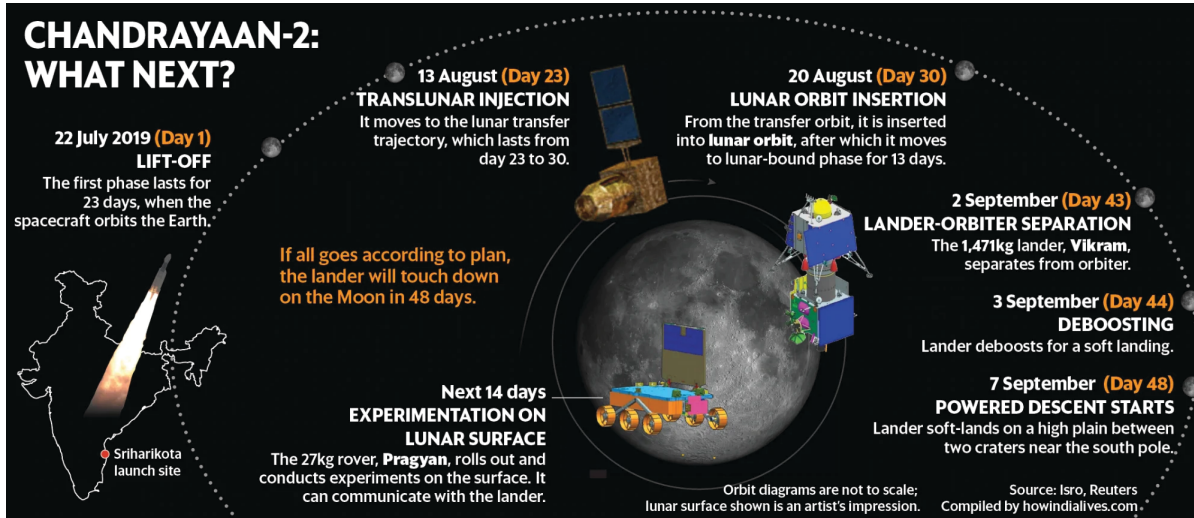
- The gauge for **rating the efficiency of rocket propellants** is specific impulse, stated in seconds. Specific impulse indicates how many pounds (or kilograms) of thrust are obtained by the consumption of one pound (or kilogram) of propellant in one second.
- **Specific impulse** is characteristic of the type of propellant, however, its exact value will vary to some extent with the operating conditions and design of the rocket engine.

Chandrayaan-2: Launched Successfully

India's Geosynchronous Satellite Launch Vehicle (GSLVMkIII-M1), successfully launched the **Chandrayaan-2** spacecraft into the earth orbit.

- The Chandrayaan-2 is now revolving around the earth with a **perigee (nearest point to Earth)** of 169.7 km and an apogee (farthest point to Earth) of 45,475 km.
- Chandrayaan-2 is India's second mission (after Chandrayaan-1) to the moon and comprises a fully **indigenous Orbiter, Lander (Vikram) and Rover (Pragyan)**.
 - The Rover Pragyan is housed inside Vikram lander.
- The mission aims to expand our knowledge and understanding of the origin and evolution of the Moon through a detailed study of its topography, mineralogy, surface chemical composition, thermo-physical characteristics and atmosphere.
- After Chandrayaan-2, the **Indian Space Research Organisation (ISRO)** has **planned the launch** of its

Note:



solar mission, Aditya-L1, in the first half of 2020 to study the Sun's corona.

Aditya-L1

- The satellite will be launched during 2019 – 2020 timeframe by PSLV-XL from Sriharikota.
- Aditya L-1 is a follow on mission to Aditya 1 (that was meant to observe only the solar corona). It will provide observations of the **sun's photosphere** (soft and hard X-ray), chromosphere (Ultra Violet) and corona (Visible and Near infrared rays).

Milky Way's Violent Birth Decoded

Based on the **Gaia space observatory data**, Scientist has observed that the **Milky Way**, home to our sun and billions of other stars, merged with another smaller galaxy in a **cosmic collision** roughly 10 billion years ago.

Gaia Space Observatory

- Gaia is a mission to chart a **three-dimensional map of our Galaxy**, the Milky Way, in the process revealing the composition, formation and evolution of the Galaxy.
- Gaia will provide unprecedented positional and radial velocity measurements with the accuracy needed to produce a census of about one billion stars in our Galaxy.
- According to scientists, the union of the Milky Way and the so-called **dwarf galaxy Gaia-Enceladus** increased our galaxy's mass by about a quarter and triggered

a period of accelerated star formation lasting about 2 to 4 billion years.

- Galaxies of all types, including the Milky Way, began to form relatively soon after the **Big Bang** explosion that marked the beginning of the universe some 13.8 billion years ago, but were generally smaller than those seen today and were forming stars at a rapid rate. Subsequent galactic mergers were instrumental in configuring galaxies existing now.
- Certain stars with higher content of elements other than hydrogen or helium arose in the Milky Way and others with lower such content originated in Gaia-Enceladus, owing to its smaller mass

China's First Commercial Rocket

Chinese startup **Interstellar Glory Space Technology** also known as **iSpace** has successfully launched the country's **first commercial rocket capable of carrying satellites into orbit**.

- The 20-metre (66-foot) rocket designed by iSpace named Hyperbola-1 reached an altitude of 300 kilometres (186 miles).
- Two other private Chinese rocket builders, **LandSpace and OneSpace**, have both failed to launch their rockets into orbit in 2018.
- Once dominated by state research agencies and the military, China allowed private companies to enter the space industry to build and launch satellites in 2014.
- Dozens of Chinese companies are competing for a share in the global space industry which according

Note:

to Morgan Stanley, is estimated to be worth about \$1 trillion by 2040.

- The sector is currently dominated by [SpaceX](#) and Blue Origin in the US.
- Chinese startups are mostly focused on building technology to launch microsatellites instead of space tourism like their US counterparts.

Microsatellites

- **Microsatellites** are typically no larger than a shoebox and are used to monitor crops, weather patterns or disaster sites or used by universities for research purposes.
- They are cheaper to build and easier to deploy than traditional **truck-sized versions** and their launch has become a lucrative market, currently dominated by the [Indian Space Research Organisation \(ISRO\)](#).

TOI 270 System

The National Aeronautics and Space Administration's (NASA) **Transiting Exoplanet Survey Satellite (TESS)** has discovered a new planetary system called **TESS Object of Interest (TOI) 270**.

- TOI 270 is about **73 light-years away from Earth** and is located in the constellation Pictor (Pictor is a constellation in the southern celestial hemisphere).
- TOI 270 system comprises of the dwarf star (TOI 270), which is 40% smaller than the Sun in size and mass and three new exoplanets planets (planets outside the solar system):

- **TOI 270 b:** It is the innermost planet, and is likely a rocky planet about 25% larger than Earth.
 - It orbits the TOI 270 (dwarf star) every 3.4 days at a distance of about 13 times closer than that of Mercury orbiting the Sun.
 - TOI 270 b has a mass of around 1.9 times greater than Earth's mass.
 - Due to its proximity to the star, planet b is an oven-hot planet and is not habitable.
- **TOI 270 c:** It is 2.4 times larger than Earth, orbits the star every 5.7 days and weighs around 7 times Earth's mass.
- **TOI 270 d:** It is 2.1 times larger than Earth, orbits the star every 11.4 days and weighs around 5 times Earth's mass.
- TOI 270 c and TOI 270 d both may be similar to Neptune in our solar system, with compositions dominated by gases rather than rock.
 - They might best be described as mini-Neptunes, a type of planet not seen in our own solar system.
- All of the planets in the TOI 270 system are expected to be tidally locked to the star, which means the planet's period of rotation on its axis is the same as its period of revolution around the star and keep the same side facing the star at all times, just as the Moon does in its orbit around Earth.
- TOI 270 system will provide better understand the formation and evolution of planetary systems.
- The TOI 270 system is so compact that the **orbits of Jupiter and its moons** in our own solar system offer the closest reasonable comparison.



Note:



drishti

Environment and Ecology

Highlights

- *Airplane Contrails and Global Warming*
- *Delhi Butterfly Corridors*
- *Hydrogen-Enriched Compressed Natural Gas*
- *Gangetic Dolphins Found in Mahananda River*
- *Immunocontraceptives for Wildlife Population Management*
- *Elephant Rehabilitation Centre*
- *Rhesus Macaque Declared 'Vermin'*
- *Declining Hangul Population*
- *Ratapani Wildlife Sanctuary*
- *Blood-oozing Tree*
- *Tiger Census Report*
- *Earth Overshoot Day*

Airplane Contrails and Global Warming

According to a recent study, the **aeroplane contrails** contribute **more to global warming** than the CO₂ emitted by an aircraft.

- The contrail's impact on climate change will triple by 2050 than it was in 2006 because of the following reasons:
 - Modern planes flying slightly higher than their predecessors, which is likely to lead to more contrail cloud formation over the tropics.
 - Increase in air traffic.
 - Improvements in fuel efficiency.
- The study also suggested that the impact on the atmosphere due to contrail cirrus clouds will be stronger over **Northern America and Europe** which are the busiest air traffic areas on the globe.
 - However, the impact will also increase in Asia as air travel is also growing in the region.
- The warming effect of cirrus clouds is also short-lived, and because it occurs in the upper atmosphere, it's not clear how much of a difference it actually makes for temperatures at Earth's surface.

Contrails

- The hot, humid exhaust from jet engines mixes with the atmosphere,

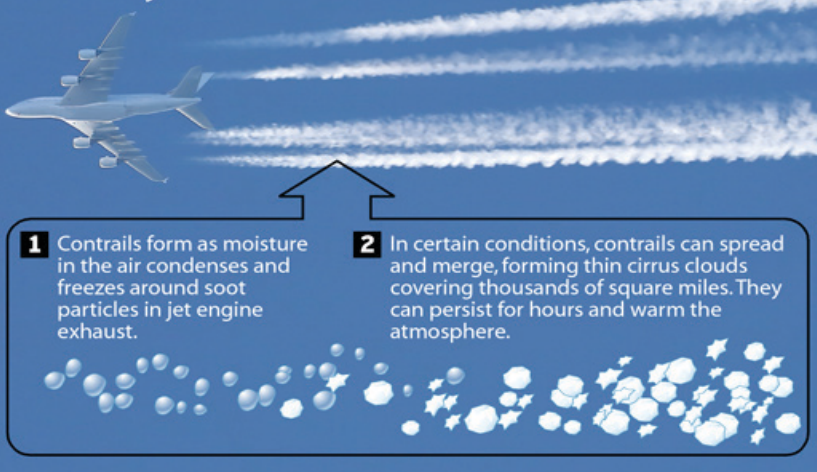
which at high altitude is of much lower vapour pressure and temperature than the exhaust gas.

- The water vapour contained in the jet exhaust condenses and may freeze, and this mixing process forms clouds.
- Most of these contrail cirrus clouds dissipate quickly, but under the right conditions they can remain for hours, and when that happens they warm the atmosphere by absorbing thermal radiation emitted by the Earth.

Significance

- Aviation contributes to about 5 percent of humans' influence on climate change.
- Despite contrails being the aviation industry's biggest climate influencer, even more than CO₂ emissions from planes, the policies focus on CO₂ emissions only.

Anatomy of a Contrail



Note:

- It is important to recognise the significant impact of non-CO₂ emissions, such as contrail cirrus, on climate and to take those effects into consideration when setting up emission trading systems or schemes like the [CORSIA Agreement](#).

Delhi Butterfly Corridors

As per **Bombay Natural History Society (BNHS)** report, the creation of butterfly corridors in Delhi with close to 100 hotspots is underway.

- At present, there are 17 hotspots where butterfly parks or gardens have been created in the last few years.
- In September 2017, the **first butterfly month** was observed in Delhi by BNHS and Delhi forest department, culminating in a record species count.
- In 2018, 75 species were recorded in urban and forested locations.
- The survey over the past two years has shown that the diversity of butterfly species was very low at new parks that have ornamental and exotic plants.
- The diversity is higher at places like the Ridge, which has native species of plants and trees.

The Bombay Natural History Society (BNHS)

- The BNHS, a **pan-India wildlife research organization**, has been promoting the cause of nature conservation since 1883.
- **BNHS Mission:** Conservation of nature, primarily biological diversity through action based on research, education and public awareness
- **BNHS Vision:** Premier independent scientific organization with a broad-based constituency, excelling in the conservation of threatened species and habitats.

Tamil Yeoman

Tamil Nadu has declared the **Tamil Yeoman butterfly species** (endemic to western ghats) as the state butterfly.

- **Tamil Yeoman (*Cirrochroa thais*)** is uniformly orange in colour with a dark brown outer ring. It is also known as **Tamil maravan** which means warrior.
- Butterflies are significant for the environment as they play the main role in pollination and food chain.

- Tamil Nadu is the **fifth state** in the country to announce its **state butterfly** and **Maharashtra** was the first in the country to announce its state butterfly (Blue Mormon) followed by **Uttarakhand** (Common Peacock), **Karnataka** (the Southern Birdwing) and **Kerala** (Malabar banded peacock or **buddha butterfly**).

Hydrogen-Enriched Compressed Natural Gas

Delhi will be the **first city** in the country to roll out hydrogen-enriched compressed natural gas (HCNG) buses for public transport from November 2020. This is a step towards combating air pollution.

- It will start as a pilot project with 50 CNG buses retrofitted with HCNG.
- Also, the Delhi government along with **Indian Oil Corporation Limited (IOCL)** and **Indraprastha Gas Limited (IGL)** began work to set up India's first semi-commercial HCNG station.
- Since hydrogen infrastructure and refuelling stations are not meeting the demand, the widespread introduction of hydrogen vehicles is not possible in the near future. One of the solutions for this hurdle is to blend hydrogen with methane
- However, **Hydrogen-Enriched Compressed Natural Gas (HCNG)** is still under research because even if it increases fuel efficiency and reduces carbon emission, it also leads to increased NOx emissions.

What is HCNG

- The **blending of hydrogen with CNG** provides a blended gas termed as **HCNG**.
- HCNG stands for hydrogen-enriched compressed natural gas and it combines the advantages of both hydrogen and methane.
- Hydrogen has been regarded as a **future secondary fuel** for power system due to carbon-free operation.
- The rapid increase in the emission of **greenhouse gases** and very strict environmental legislation are major motivating factors for the usage of hydrogen in fuel cells and internal combustion engines.
- Hydrogen is an excellent additive to improve the combustion of hydrocarbon fuel due to its **low ignition energy, high reactivity, diffusivity and burning velocity**.

Note:



Gangetic Dolphins Found in Mahananda River

For the first time, a population of Gangetic River Dolphins has been found in the Mahananda river, in Bihar's Kishanganj district.

- The presence of dolphins is the sign of a healthy river ecosystem.

Mahananda River

- Mahananda river is a tributary of the Ganga.
- It originates from the Himalayas in Darjeeling, West Bengal.
- The river flows through Bihar, West Bengal, and then continues south-eastward to join the Ganga at Godagari in Bangladesh.

Gangetic Dolphins

- The Ganges river dolphin is found in parts of the Ganges, Meghna, and Brahmaputra river systems in India, Nepal and Bangladesh.
 - They are locally known as **Susu**, which refers to the noise the dolphin is said to make when it breathes.
- The Gangetic river dolphin is **India's national aquatic animal**.
- **Behaviour and Habitat:**
 - They are generally blind and can detect only the direction of light.
 - They emit an ultrasonic sound which reaches the prey. The dolphin then registers this image in its mind and subsequently catches hold of its prey.
 - In fact, these dolphins live by **echolocation**. They navigate, feed, escape danger, find mates, breed, and nurse babies by echolocation.
 - Dolphins prefer water that is at least five to eight feet deep.
 - Gangetic dolphins live in a zone where there is little or no current, helping them save energy. If they sense danger, they can dive into deep waters.
- **Threats to dolphins:**
 - **Water Level:** Declining water in the river, putting more pressure on the dolphins to manage their life cycle.
 - **Climate change**
 - The increasing pollution due to large scale discharge of industrial and municipal waste, siltation, and

mechanised boats pose one of the biggest threats to these freshwater dolphins.

- **Poaching:** They frequently fall prey to poachers. Their carcasses are found frequently on river banks.
- **Protection Status:**
 - IUCN Status: **Endangered**
 - It is listed on **CITES Appendix I**
 - It is classified under **Schedule 1, Wildlife (Protection) Act, 1972** providing absolute protection as offences under these are prescribed the highest penalties.

Note:

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement which aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

- The **Gangetic river dolphin** is one of the four **freshwater dolphin species** in the world. The other three are found in the Yangtze River in China, the Indus river in Pakistan and the Amazon river in South America.

Vikramshila Gangetic Dolphin Sanctuary

- It is located in Bhagalpur district of **Bihar**, India.
- The sanctuary is a 50 km stretch of the Ganges River from **Sultanganj to Kahalgaon**.
- It was designated as a protected area for the endangered Gangetic dolphins in 1991.

Immunocontraceptives for Wildlife Population Management

The **Ministry of Environment, Forest and Climate Change (MoEFCC)** has launched a project for undertaking '**immunocontraceptive measures**' for population management of wild animals.

- The project includes four species of wild animals, viz. **Elephant, Wild boar, Monkeys and Blue Bull (Nilgai)**.
 - The pilot project will begin in Uttarakhand and then implemented in the remaining states.
- The **Wildlife Institute of India (WII)** and the **National Institute of Immunology (NII)** will develop a protocol of immunocontraception.

Note:



Immunocontraception

- Immunocontraception is a birth control method that uses the body's immune response to **prevent pregnancy**. It is a technology that uses a female animal's immune system to build a protein around the egg that prevents it from fertilising.
- It is a humane, **non-lethal solution** to conflicts between people and wildlife as well as a solution to local problems of animal overabundance.
- Immunocontraception can also help reduce the **overproduction of captive animals** in zoos and other facilities.

Need

- **The human-animal conflict** has emerged as a major challenge in managing wildlife in the country.
 - Human-elephant conflict causes the maximum number of casualties every year. According to reply tabled in Parliament on June 28, 2019, nearly 494 persons were killed by elephants in 2018.
 - Between 2014 and March 2019, 2,398 people died in elephant attack in the country, with West Bengal accounting for a maximum number of such deaths.

Challenges

- It requires mathematical modelling and knowing the adult female population in the group that has to be delivered the vaccine.
- The implementation of such a project in India will not be a simple task. It will involve multidisciplinary effort over a long period of time to deliver the contraceptive and manage the logistics around it
- Use of hormonal contraceptives in wildlife is easily passed from animal to animal. This can lead to unintended ecological consequences.

Elephant Rehabilitation Centre

India's first elephant rehabilitation centre is to be set up in **Kottoor, Kerala**.

- It is being planned on the lines of the **Pinnawala Elephant Orphanage in Sri Lanka**.
- The rehabilitation centre is aimed at providing protection to abandoned, orphaned, injured and older elephants.

- It is planning to give an opportunity for people to know more about elephants and will be a boon for wildlife researchers and veterinary students.
- The rehabilitation centre is expected to have an elephant museum, mahout training centre, super-speciality hospital, a retirement home and crematorium for the animals.
- Recently India has also opened its first **water clinic** for elephants suffering from arthritis, joint pain and foot ailments at a **wildlife SOS Elephant Hospital, Mathura, UP**.

Rhesus Macaque Declared 'Vermin'

The Union Environment Ministry has declared **Monkeys (Rhesus Macaque)** as 'vermin' in **Himachal Pradesh**.

- It will allow local authorities to cull this animal in certain identified non-forest areas in Shimla for one year.
- The state government reported harm to life and property including large-scale destruction of agriculture due to the overpopulation of this species outside forests.
- Rhesus Macaque monkeys are protected species under **Schedule II of the Wildlife (Protection) Act, 1972**. The law allows for it to be hunted by declaring it 'vermin' for a specific period if it poses a danger to human life or property.

Rhesus Macaques

- These are familiar brown primates with **red faces and rears**. They have close-cropped hair on their heads, which accentuates their very expressive faces.
- Their natural range includes **Afghanistan, Pakistan, India, Southeast Asia, and China**. A few troops of introduced rhesus macaques now live wild in Florida.
- It has a least concerned status in the **IUCN** red list.
- These **intelligent animals** can adapt to many habitats, and some can even become accustomed to living in human communities. This is most common in India, where Hindus regard the animals as sacred and usually leave them undisturbed.

Vermin Animal

- As per **Section 62** of the **Wildlife Protection Act, 1972**, States can send a list of wild animals to the Centre

Note:

requesting it to declare them vermin for selective slaughter.

- Wildlife laws divide species into 'Schedules' ranked from I to V. Schedule I members are the best protected, in theory, with severe punishments meted out to those who hunt them.
- Wild boars, nilgai and rhesus monkeys are Schedule II and III members. These are also protected but can be hunted under specific conditions.

Declining Hangul Population

The **Hangul** (or **Kashmiri Stag**) population monitoring exercise has revealed an alarming decline in the fawn-hind and stag-hind ratio of the hangul population in Kashmir.



- The exercise was conducted by the **Department of Wildlife Protection, Jammu & Kashmir (DWLP)** in collaboration with the **Wildlife Institute of India (WII)**.
- Fawn is a young deer in its first year and Hind is a female deer, over three years old and her counterpart, the mature male, is called a **stag**.
- The male-female and fawn-female ratios is crucial for the management and conservation of the deer population.
- Although hangul is limited to the **Dachigam Wildlife Sanctuary near Srinagar**, but a small population has also been witnessed in **Overa-Aru Wildlife Sanctuary in south Kashmir**.
- The Kashmir stag is the state animal of Jammu and Kashmir and is the only surviving species of red deer in India.

Dachigam Wildlife Sanctuary

- Dachigam (stands for 'ten villages') National Park is located about 22 km from Srinagar, Jammu and Kashmir.

- **Fauna:** The main animal species that Dachigam is most famous for is the hangul or the Kashmir stag.
- **Flora:** The floral wealth of the park is extremely diverse and a significant part of its ecosystem and includes walnut, apricot, apple, pear, and wild cherry, plum, chestnut, willow, oak and birch trees.

Ratapani Wildlife Sanctuary

The Madhya Pradesh government has decided to declare the **Ratapani Wildlife Sanctuary** a **tiger reserve**. The state received approval for the same from the **National Tiger Conservation Authority (NTCA)** 11 years ago.

- The sanctuary is spread over 890 sq.km. in Bhopal-Raisen forest division of **Madhya Pradesh**.
- The sanctuary has a population of about 40 tigers and the movement of 12 tigers has been reported in the forest area of Bhopal. The whole area will be combined as one to declare it as a tiger reserve.
- The area of about 3,500 sq.km. of **Raisen, Sehore and Bhopal districts** has been reserved for the same. The 1,500 sq km will be designated as a core area while 2,000 sq km as a buffer zone.
- The declaration of the sanctuary as a tiger reserve will help in better conservation of tigers in the area which is facing the problem of illegal mining and poaching.

Blood-oozing Tree

A trio of researchers from **Assam** has discovered **Dracaena cambodiana**, a dragon tree species in the **Dongka Sarpo area of West Karbi Anglong**. This is the first time that a dragon tree species has been reported from India.



Properties

- It is a tree that yields dragon's blood — a bright red resin (a precious traditional medicine in China) used since ancient times as medicine, body oil, varnish, incense and dye.
- Several antifungal and antibacterial compounds, antioxidants, flavonoids, etc. have been extracted from various parts of the plant.

Note:

Location

- In India, the *Dracaena* genus belonging to the family **Asparagaceae** is represented by nine species and two varieties in the Himalayan region, the northeast and Andaman and the Nicobar Islands. But according to a study, *Dracaena cambodiana* is the only true dragon tree species, the study said.

Threat

- Recent over-exploitation to meet the increasing demand for dragon's blood has resulted in rapid depletion of the plant. For this reason, the species is already listed in the inventory of Rare and Endangered Plants of China.
- The population size of the **dragon tree species in Assam** was estimated to be fewer than 50 mature plants. The habitat of the plant is severely fragmented due to open excavation of a stone quarry and there is continuing decline in its area of occupancy and number of mature plants.
- The *Dracaena* seeds are usually dispersed by birds. But due to the large fruit size, only a few species of birds are able to swallow the fruits, thus limiting the scope of its natural conservation.

Tiger Census Report

The results of the fourth cycle of **All India Tiger Estimation - 2018** have been released on the occasion of **Global Tiger Day - 2019**.

- According to results of the **Tiger census**, the total count of tigers has risen to 2,967 from 2,226 in 2014 — an increase of 741 individuals (aged more than one year), or 33%, in four years.
- India has achieved the target of doubling the tiger count four years ahead of the deadline of 2022.
- This is by far the biggest increase in tiger count in terms of both numbers and percentage (since the four-yearly census using camera traps and the capture-mark-recapture method began in 2006).

Need for Tiger Conservation

- Tigers are at the top of the food chain and are sometimes referred to as "**umbrella species**" resulting in the fact that their conservation also conserves many other species in the same area.

- More than 80% of the world's wild tigers are in India, and it's crucial to keep track of their numbers.

Tigers in India

- India accounts for the majority of the 3,500-odd tigers that are scattered among Bangladesh, Bhutan, Cambodia, China, Indonesia, Laos PDR, Malaysia, Myanmar, Nepal, Russian Federation, Thailand and Vietnam.
- India's five tiger landscapes are Shivalik Hills and Gangetic Plains, Central Indian Landscape and Eastern Ghats, the Western Ghats, North-East Hills and Brahmaputra Plains, and the Sundarbans.

Key Findings

- **Top Performers:** Madhya Pradesh saw the highest number of tigers (526) followed by Karnataka (524) and Uttarakhand(442).
 - Increase in tiger population: Madhya Pradesh (71%) > Maharashtra (64%) > Karnataka (29%).
- **Worst Performers:** Chhattisgarh and Mizoram saw a decline in tiger population.
 - Chhattisgarh is the only state out of the 20 tiger-bearing states where the 2018- census counted 19 tigers, significantly fewer than the 46 of 2014.
 - The decline in tiger numbers in Chhattisgarh can be attributed to the law and order problem as large parts of the state are hit by the Maoist insurgency.
 - Greater conservation efforts are needed in the "**critically vulnerable**" Northeast hills and Odisha.
- **Tiger Sanctuaries:** An evaluation of India's 50 tiger sanctuaries was also released along with the **4th National Tiger Estimation (Tiger census)**.
 - The Dampa and Rajaji reserves, in Mizoram and Uttarakhand respectively are at the bottom of the list in terms of Tiger count.

Global Tiger Day

- Global Tiger Day was observed for the first time in 2010 at the **St. Petersburg Tiger Summit in Russia** when all 13 tiger range countries came together for the first time with the commitment of doubling the number of wild tigers by 2022.
- It is celebrated annually on July 29th.
- **Global Tiger Recovery Plan** which outlines how each country can contribute to the ambitious goal is known as TX2.

Note:

- No tiger has been found in the Buxa (West Bengal), Palamau (Jharkhand) and Dampa (Mizoram) reserves.

Earth Overshoot Day

The **Earth Overshoot Day** fell on 29th July 2019. The day marks the date when humanity's demand for ecological resources (fish and forests, for instance) and services in a given year exceeds what the Earth can regenerate in that year.

- The concept of Earth Overshoot Day was first conceived by **Andrew Simms of the UK think tank New Economics Foundation**, which partnered with Global Footprint Network in 2006 to launch the first global Earth Overshoot Day campaign. At that time, Earth Overshoot Day fell in October.

- **World-Wide Fund for Nature (WWF)**, the world's largest conservation organization, has participated in Earth Overshoot Day since 2007.
- It is computed by **Global Footprint Network** by dividing the **planet's biocapacity** (the amount of ecological resources Earth is able to generate that year), by humanity's Ecological Footprint (humanity's demand for that year), and multiplying by 365, the number of days in a year:

Earth Overshoot Day = (Planet's Biocapacity / Humanity's Ecological Footprint) × 365 Global Footprint Network

- Global Footprint Network is an international non-profit organization founded in the year 2003. Its key strategy has been to make available robust Ecological Footprint data.
 - The Ecological Footprint is a metric that comprehensively compares human demand on nature against nature's capacity to regenerate.



Note:



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Art & Culture

Highlights

- Jaipur: A World Heritage Site
- International Indigenous Film Festival
- Jagannath Rath Yatra
- Kangra Painting
- Evidence of Ancient Human Cognition
- World Heritage Committee's Concerns
- Sangeet Natak Akademi Awards – 2018
- Markandeshwar Temple
- Seva Bhoj Yojna
- Kakinada Hope Island
- PATA Gold Award 2019
- Protection and Preservation of Endangered Language
- Iconic Tourist Sites
- GI Tag for Odisha Rasagola

Jaipur: A World Heritage Site

The Pink City, Jaipur (Rajasthan), has been declared a **UNESCO World Heritage Site**.

- The decision was taken at the 43rd session of the **UNESCO World Heritage Committee (WHC)** taken place in the city of **Baku, Azerbaijan**, from 30th June - 10th July, 2019.
- The city was nominated for its value of being an exemplary development in town planning and architecture that demonstrates an amalgamation and important exchange of ideas in the late medieval period.

Important Points

- Jaipur has become the **second city** of the country **after Ahmedabad** to get the recognition.
- With Jaipur's inclusion as a cultural site, the number of **heritage sites across India** that are on the **UNESCO World Heritage list**, has grown to 38, including 30 cultural properties, 7 natural properties and 1 mixed site.
- The walled city of Jaipur in Rajasthan was founded in 1727 AD under the **patronage of Sawai Jai Singh II**. It also serves as the capital city of the state of Rajasthan.
- Unlike other cities in the region located in hilly terrain, Jaipur was established on the plain and built according to a grid plan interpreted in the light of Vedic architecture.

- Its streets feature rows that intersect in the centre and create large public squares called **chaupars**.
- The city's urban planning shows an exchange of ideas from ancient Hindu and modern Mughal as well as Western cultures.
- Designed to be a commercial capital, the city has maintained its local commercial, artisanal and cooperative traditions to this day.
- The iconic monuments in the city include the Govind Dev temple, City Palace, Jantar Mantar, Hawa Mahal etc.

UNESCO World Heritage Committee (WHC)

- The **World Heritage Committee** is composed of representatives of 21 States Parties to the **World Heritage Convention** who meet annually.
 - The Convention Concerning the Protection of the World Cultural and Natural Heritage is an international agreement that was adopted by the **General Conference of UNESCO in 1972**.
 - It is based on the premise that certain places on Earth are of outstanding universal value and should, therefore, form part of the common heritage of humankind.
 - It basically defines the kind of natural or cultural sites which can be considered for inscription on the **World Heritage List**.
- The Committee is in charge of implementing the Convention.
- To date, 1,092 sites in 167 countries have been inscribed on the **World Heritage List**.

Note:



International Indigenous Film Festival

International Indigenous Film Festival of Kuching, **Malaysia** is showcasing films on **indigenous Indian communities**.

- Four Indian films showcased at International Indigenous film festival (held in Kuching, Malaysia) are:
 - Dibi Durga by Niranjan Kujur.
 - Niyamgiri-The Mountain of Law by Surya Shankar Dash (Odisha).
 - Shot Awake by Anungla Zoe (Nagaland).
 - Strength in Diversity by Chentei (Nagaland).
- Festival showcases films made by indigenous filmmakers in collaboration with the indigenous communities with the intent to shed a light on and celebrate the huge and diverse native tribes and indigenous cultures, their issues and concerns and the problems afflicting them.
- The festival aims to be a platform for indigenous communities from the world over to share, have a dialogue, collaborate and to use cinema as a mode of **united assertion, resistance, and activism against exploitative forces**.
- **India's first international indigenous film festival** was held in Bhubneswar, **Odisha in February 2019**.

Jagannath Rath Yatra

- The festival is celebrated on the second day of **Shukla Paksha of Ashadh**, the third month, according to the traditional Oriya calendar.
- The **Rath Yatra (Chariot Festival)** is 9 day-long event during which the three holy chariots carrying idols of **Lord Jagannath**, his brother **Balaram (Balabhadra)** and **sister Subhadra** are pulled by thousands of devotees from India and abroad.
- The festival honours the Lord Jagannath's visit along with his siblings to the temple of **Gundicha Devi**, the place of their aunt's house where they revel in a nine-day stay.
- Jagannath Puri temple is called '**Yamanika Tirtha**' where, according to the Hindu beliefs, the power of 'Yama', the god of death has been nullified in Puri due to the presence of Lord Jagannath.

- There are four gates to the temple- Eastern '**Singhdwara**' which is the main gate with two crouching lions, Southern '**Ashwadwara**', Western '**Vyaghra Dwara**' and Northern '**Hastidwara**'. There is a carving of each form at each gate.
- In front of the entrance stands the Aruna stambha or sun pillar, which was originally at the **Sun Temple in Konark**.

Kangra Painting

Kangra Miniature painting is one of the schools of Pahari paintings along with **Guler, Basholi, Mandi, Chamba and Bilaspur**.

- Miniatures are small-sized paintings, generally done with watercolour on cloth or paper.
- **Nadir Shah's invasion** and conquest of Delhi in 1739 resulted in the migration of Mughal artists to the hills to escape the uncertainties in the plains.
 - These artists found patrons in the hills which led to the founding of the Kangra school of painting.
 - By the mid-eighteenth century the Kangra artists developed a new style wherein the source of inspiration was the Vaishnavite traditions. Soft colours including cool blues and greens and lyrical treatment of themes distinguished Kangra painting.
- The name Kangra style is given to this group of painting for the reason that they are identical in style to the portraits of **Raja Sansar Chand** of Kangra.

Evidence of Ancient Human Cognition

Recently, In **China**, archaeologists have found the earliest evidence of **Ochre on bone engravings**.

- The discovery of abstract engravings is considered an indicator of modern human cognition which researchers say led to the development of symbols, drawings, art and language.
- The bones discovered there had seven engraved lines with the presence of a red residue.
- Population which inhabited the region might have used the bone as a medium on which they could permanently record sequential markings and used ochre as a way of highlighting them.

Note:



- **Human cognition** refers to the capacity of making **complex tools and producing different art forms** such as painting, engraving and music.
- Ochre is a natural clay earth pigment which is a mixture of ferric oxide and varying amounts of clay and sand. It ranges in colour from yellow to deep orange or brown.

World Heritage Committee's Concerns

The **World Heritage Committee (WHC)** has flagged some concerns related to the conservation of the **heritage site** of Hampi and the **Darjeeling Himalayan Railway (DHR)**.

- The WHC has regretted the lack of response from local authorities on concerns raised about developmental projects in the world heritage site of **Hampi**.
- The Indian Railways, despite requests, have not furnished information between the years 2017 and 2019 regarding the lack of monitoring and general maintenance, and encroachment and waste dumping along the tracks – all considered violation of global heritage conservation norms.

Hampi

- The site of Hampi comprises mainly the remnants of the **capital city of the Vijayanagara Empire (14th-16th Cent CE)**, the last great **Hindu Kingdom**.
- It encompasses an area of 4187, 24 hectares, located in the **Tungabhadra** in **Central Karnataka, Bellary District**.
- Hampi's spectacular setting is dominated by river Tungabhadra, craggy hill ranges and open plains, with widespread physical remains.
- The sophistication of the varied urban, royal and sacred systems is evident from the more than 1600 surviving remains that include forts, riverside features, royal and sacred complexes, temples, shrines, pillared halls, Mandapas etc.

The Darjeeling Himalayan Railway

- The Mountain Railways of India, the world heritage site, includes three railways:
 - Darjeeling Himalayan Railway located in the foothills of the Himalayas in West Bengal (Northeast India),

- Nilgiri Mountain Railways located in the Nilgiri Hills of Tamil Nadu (South India).
- Kalka Shimla Railway located in the Himalayan foothills of Himachal Pradesh (Northwest India).
- The Darjeeling Himalayan Railway is the most outstanding example of a hill passenger railway. Opened in 1881, its design applies bold and ingenious engineering solutions to the problem of establishing an effective rail link across a mountainous terrain of great beauty.

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Sangeet Natak Akademi Awards – 2018

Recently, the General Council of the Sangeet Natak Akademi has announced its awards in the field of performing arts for the year 2018.

- The awards are: **Sangeet Natak Akademi Fellowships** (Akademi Ratna), **Sangeet Natak Akademi Awards** (Akademi Puraskar), and **Ustad Bismillah Khan Yuva Puraskar 2018**.

Sangeet Natak Akademi Fellowships (Akademi Ratna)

- The Akademi conferred this award on four eminent personalities:
 - **Zakir Hussain**: Tabla
 - **Sonal Mansingh**: Indian **classical dancer** (Bharatanatyam, Odissi, Manipuri, Kuchipudi)

Note:

- **Jatin Goswami:** Sattriya dance and music
- **K. Kalyanasundaram Pillai:** Bharatanatyam

Sangeet Natak Akademi Awards (Akademi Puraskar)

- These awards have been given to forty-four artists from the field of Music, Dance, Theatre, Traditional/Folk/Tribal Music/Dance/Theatre, Puppetry and Overall contribution/scholarship in the Performing Arts.

Sangeet Natak Akademi

- The Sangeet Natak Akademi is India's national academy for music, dance and drama.
- It was created by a resolution of the (then) **Ministry of Education**, Government of India, in 1952 with **Dr. P.V. Rajamannar as its first Chairman**.
- It is presently an **Autonomous Body** of the **Ministry of Culture**, Government of India and is fully funded by the Government for implementation of its schemes and programmes.
- The Akademi establishes and looks after institutions and projects of national importance in the field of the performing arts. Few important ones are:
 - **National School of Drama, New Delhi** was set up in 1959.
 - **Jawaharlal Nehru Manipur Dance Academy** in Imphal - 1954.
 - **Kathak Kendra (National Institute of Kathak Dance)** in New Delhi - 1964.
 - National Projects of Support to **Kutiyattam (Sanskrit theatre of Kerala)**, Chhau dances of eastern India, Sattriya traditions of Assam, etc.
- These forty-four artists include three joint awards as well.
- **Diwan Singh Bajeli (Theatre)** and **Puru Dadhich (Author/ Kathak)** have been selected for the Akademi Award 2018 in the field of Overall Contribution/ Scholarship in the Performing Arts.

Ustad Bismillah Khan Yuva Puraskar

- The academy has selected 32 (Including one joint Award) artists of India who have made a mark as young talents in their respective fields of the performing arts for Ustad Bismillah Khan Yuva Puraskar 2018.
- It is conferred upon artists below the age of 40 years with the objective of identifying and encouraging outstanding young talents in diverse fields of performing

arts and giving them national recognition early in their lives, so that they may work with greater commitment and dedication in their chosen fields.

Markandeshwar Temple

The [Archaeological Survey of India](#) is taking up the restoration work of **Markandeshwar temple in Maharashtra**.



- Markandeshwar Temple is situated on the bank of River Wainganga in district Gadchiroli of Maharashtra.
- It is also known as the "**Khajuraho of Vidarbha**".
- Markandeshwar temple belongs to the **Nagara group of temples** of North India.
- The temples belong to **Saiva, Vaishnava and Sakti faith**.
- Most of the temples have a simple plan, with **ardha mandapa, mandapa, antarala** and **garbhagriha** forming the component of the entire set up.

Key Terms

- **Ardha mandapa:** In Hindu temple architecture, Ardha mandapa is an entrance porch that forms a transitional area between the outside world and the mandapa or hall of the temple.
- **Mandapa:** It is a porch-like structure through the gopuram leading to the temple. It is used for religious dancing and music and is part of the basic temple compound.
 - **Gopuram** is a monumental entrance tower, usually ornate, at the entrance of a Hindu temple, in the Dravidian architecture.
- **Garbhagriha:** It is the sanctum sanctorum, the innermost sanctum of a Hindu temple where resides the murti (idol or icon) of the primary deity of the temple.

Note:



Seva Bhoj Yojna

The **Union Ministry of Culture**, Government of India has introduced '**Seva Bhoj Yojna**' that seeks to reimburse **Central share of Central Goods and Services Tax (CGST)** and **Integrated Goods and Service Tax (IGST)** on food/prasad/langar/Bhandara offered by charitable religious institutions.

- **Seva Bhoj Yojna** aims to lessen the financial burden of such charitable religious institutions (such as Temples, Gurudwara, Mosque, Church, Dharmik Ashram, Dargah, Matth, Monasteries etc) that provide food/prasad/langar (community kitchen)/bhandara free of cost without any discrimination to public/devotees.

Eligibility

- The **Charitable religious institutions** which have been in existence for at least three years before applying for financial assistance/grant.
- The charitable religious institution who serve free food to at least 5000 people in a month.
- Institutions need to be covered under Section 10 of the Income Tax Act or are registered as a society under the **Societies Registration Act** or as a **Public Trust** under any law for the time being in force of statutory religious bodies constituted under any Act or institutions registered under **Section 12AA of Income Tax Act**.

Kakinada Hope Island

The project named "**Development of Kakinada Hope Island, Konaseema (Andhra Pradesh) as World Class Coastal & Eco-Tourism Circuit**" which was sanctioned under the **Swadesh Darshan Scheme** has been completed.

About Hope Island

- It is tadpole-shaped island formed 200 years ago by the sand formation in the **East Godavari district**.
- It is situated 10 km from **Coringa Wildlife Sanctuary** and **Sri Kukkuteswara Swamy Temple**.

Swadesh Darshan Scheme

- The **Ministry of Tourism (MoT)** launched the **Swadesh Darshan Scheme** as a **Central Sector Scheme** in 2014-15 with the objective of improving connectivity and infrastructure of tourism destinations to enrich

overall tourist experience, enhance livelihood and employment opportunities and to attract domestic as well as foreign tourists to the destinations.

- The projects for development are identified in consultation with the State Governments/UT Administrations.
- **Theme based circuits** include Buddhist, Coastal, Desert, Eco, Heritage, Himalayan, Krishna, North-eastern, Ramayan, Rural, Spiritual, Sufi. Tirthankar, Tribal and Wildlife circuits

PATA Gold Award 2019

The **Ministry of Tourism's** campaign, "**Find the Incredible you**" has been declared the winner of **PATA (Pacific Asia Travel Association) Gold Award 2019**.

- It received an award in the "**Marketing - Primary Government Destination**" category.
- The campaign is a part of its promotional initiatives that are released under the 'Incredible India' brand-line in the Television, Print, Digital and Social Media, in key and potential source markets overseas.
- The campaign focuses on digital and social media and the promotion of **Niche Tourism** products of the country.

Niche Tourism

- A 'niche' tourism strategy is one that appeals to a small number of people who are especially interested in something. Another way to describe 'niche' tourism is 'specialised' tourism.
- Examples of niche tourism: Eco & Wildlife Tourism, MICE Tourism, Sustainable Tourism, Cruise Tourism, Golf Tourism, Polo Tourism, Medical Tourism, Wellness Tourism etc.
- The term "MICE" in the context of travel is an acronym for meetings, incentives, conferences, and exhibitions. The MICE market refers to a specialized niche of group tourism dedicated to planning, booking, and facilitating conferences, seminars, and other events, which is a big moneymaker in the travel industry.

About PATA

- It was founded in 1951, its **headquarters is in Bangkok, Thailand**.
- PATA is a **not-for-profit membership association** that acts as a catalyst for the responsible development of travel and tourism to, from and within the Asia Pacific region

Note:

- The Association provides aligned advocacy, insightful research and innovative events to its more than 800 member organisations, including 95 government, state and city tourism bodies, 20 international airlines and airports, 102 hospitality organisations and 70 educational institutions, as well as over a hundred **Young Tourism Professional (YTP)** members across the world.

Protection and Preservation of Endangered Language

The Government of India is running a scheme known as “**Protection and Preservation of Endangered Languages**” for the conservation of threatened languages.

Background

- According to the census 1961, India has around 1652 languages. But by 1971, only 808 languages were left.
- According to the **People’s Linguistic Survey of India 2013**, around 220 languages have been lost in the last 50 years and 197 has been categorised as Endangered.
- **Government of India** currently defines a language as one that is marked by a **script and effectively neutering oral languages**. Therefore, the **government recognizes 122 languages** which is far lower than the 780 counted by the **People's Linguistic Survey of India** (along with a further 100 suspected to exist).
 - This discrepancy is caused primarily because the Government of India doesn't recognise any language with less than 10,000 speakers.
- According to the criteria adopted by the **UNESCO**, a language becomes extinct when nobody speaks or remembers the language. The UNESCO has categorized languages on the basis of endangerment as follows:-
 - **Vulnerable**
 - **Definitely Endangered**
 - **Severely Endangered**
 - **Critically Endangered**
- UNESCO has recognised 42 Indian languages as **Critically Endangered**.

Causes For Decline

- GOI does not recognize languages with less than 10,000 speakers.

- In and out migration of communities which leads to the dispersal of traditional settlement.
- **Changing employment pattern** which favours majority language.
- Changes in **social and cultural values**.
- Growth of “**individualism**”, which puts self-interest over that of community.
- **Encroachment of materialism** in traditional communities allowing spiritual, moral and ethical values being overshadowed by consumerism.

What needs to be done?

- The proven method to ensure the survival of the language is the development of schools that teach in languages of minority (tribal languages) which enables the speakers to preserve and enrich the language.
- A **vast digital project** - on the lines of Project Tiger - for preserving and growing India's endangered languages must be launched.
- **Audio-visual documentation** of the important aspects of such language - like storytelling, folk literature and history.
- Existing work from groundbreaking initiatives like **Global Language Hotspots** can be used to enhance such documentation efforts.

Scheme for Protection and Preservation of Endangered Languages (SPPEL)

- It was instituted by the **Ministry of Human Resource Development (Government of India)** in 2013.
- The sole objective of the Scheme is to document and archive the country's languages that have become endangered or likely to be endangered in the near future.
- The scheme is monitored by **Central Institute of Indian Languages (CIIL)** located in **Mysuru, Karnataka**.
- **University Grants Commission (UGC)** provides financial assistance for creation of centres for endangered languages at Central and State Universities to undertake research projects.

Central Institute of Indian Languages (CIIL)

- Central Institute of Indian Languages (CIIL) was established in 1969.
- It is under the administrative control of **Ministry of Human Resource Development**.

Note:



Purpose

- To coordinate the development of the **Indian Language**.
- To bring about the essential unity of Indian languages through scientific studies.
- Promote interdisciplinary research.
- Contribute to the mutual enrichment of languages and contribute towards the emotional integration of the people of India.
- Protects and documents minor, minority and tribal languages.

Iconic Tourist Sites

The government will develop 17 “**Iconic Tourist Sites**” in the country as a world-class tourist destination which in turn would serve as a model for other tourism sites.

Iconic Tourist Sites Initiative

- The Tourism Ministry is the nodal ministry for the implementation of the initiative.
- The 17 sites identified by the Ministry are:
 - **Taj Mahal** and Fatehpur Sikri (Uttar Pradesh),
 - Ajanta & Ellora (Maharashtra),
 - Humayun’s Tomb, Red Fort and Qutub Minar (Delhi),
 - Colva (Goa),
 - Amer Fort (Rajasthan),
 - Somnath and **Dholavira** (Gujarat),
 - **Khajuraho** (Madhya Pradesh),
 - **Hampi** (Karnataka),
 - Mahabalipuram (Tamil Nadu),
 - **Kaziranga** (Assam),
 - Kumarakom (Kerala) and
 - The Mahabodhi Temple (Bihar)
- The initiative is aimed at enhancing **India’s soft power**.
- **Vision:** The Ministry shall be developing the sites in a holistic manner with a focus on issues concerning connectivity to the destination, better facilities/experience for the tourists at the site, skill development, involvement of local community, promotion & branding and by bringing in private investment.
- **Execution:** The monuments taken up for development under the initiative fall under the jurisdiction of **Archaeological Survey of India (ASI)** and **State**

Archaeology Departments. The Ministry will carry out interventions at these monuments in collaboration with the ASI and State Government, and all development plans will have elements of universal accessibility, cleanliness at the monuments, use of Green Technology and enhanced security for the tourists.

Need for the Initiative

- **Slowdown:** As per the **Economic Survey 2018-19**, the **tourism** sector witnessed a sharp slowdown in the year 2018.
 - The growth rate of **Foreign Tourist Arrival (FTA)** declined from 14.2% in 2017-18 to 2.1% in 2018-19, year on year basis.
- **Declining Investment:** The Survey also showed that the **Foreign Direct Investment (FDI)** in hotel and tourism declined from \$1,132 million in 2017-18 to \$1,076 million in 2018-19.
- **Lukewarm Response to Schemes:** Low momentum under ‘**Adopt a Heritage**’ scheme: Many of the identified monuments were opened up for adoption in late 2017 under the Ministry of Tourism’s **Adopt a Heritage Scheme**. It seems that the momentum of the scheme has slowed down as only 11 MoUs have been signed so far.
 - The **Red Fort** was adopted by the **Dalmia Group**, while the **Qutub Minar** and the **Ajanta Caves** were adopted by **YatraOnline**.
- **Less Allocation:** The Tourism Ministry has been allocated Rs. 1,378 crore for 2019-20 for the development of tourism infrastructure. This is only marginally more than the allocations in 2017-18 (Rs. 1,151 crore) and 2018-19 (Rs. 1,330 crore).

Way Forward

- There is a need to strengthen the coordination mechanism of various Ministries and stakeholders to resolve issues in the promotion of tourism in the country.
- The State governments also need to be sensitized about tourism being a major driver of employment and poverty alleviation in the country.

GI Tag for Odisha Rasagola

Odisha has received the **Geographical Indication tag (GI)** from the Registrar of Geographical Indication.

Note:

- **Odisha Rasagola** is a sweet made of chhena (cottage cheese) cooked in sugar syrup using the principle of **caramelisation of sugar** (caramelization is the browning of sugar which is used extensively in cooking for the resulting sweet nutty flavour and brown colour).
- Odisha Rasagola is associated with world-famous **Puri Jagannath Temple**.
- Both Odisha and West Bengal have been contesting the origin of the rasagola.
 - West Bengal received GI tag for its variety of Rasgulla in November 2017.
- The reference of Rasagola is found in the late **15th-century Odia Ramayana** written by **Balaram Das**.
 - Balaram Das's Ramayana is known as **Dandi Ramayana** or **Jagamohana Ramayana** as it was composed and sung at the Jagamohana (Assembly Hall) of the Puri Temple.
- A religious script named "**Ajodhya Kanda**" gives elaborate descriptions of chhena and chhena-based products including Rasagola.
- Famous Odia writer **Fakir Mohan Senapati**, in his writing **Utkal Bhramanam** (1892) also mentioned about the plentiful use of Rasagola in Odisha during those days.
- '**Bali Jatra**', a poem written by **Damodar Pattanayak** on Cuttack's famous, historic fair, Bali Jatra (Journey to Bali Island of Indonesia) also mentions the presence of Rasagola and other sweets.
- The **first Odia product to receive a GI tag** was **Kandhamal Haldi**, a type of turmeric produced in the state's Kandhamal district.



Note:



Social Issues

Highlights

- WHO's Self Care Guidelines
- Scheme for Trans-Disciplinary Research for India's Developing Economy (STRIDE)
- Non-Communicable Diseases in India
- Disability and RTE: UNESCO Report
- NMEICT
- Feminization of Agriculture
- Manual Scavenging in India
- Measles
- Global Report on Income Inequality
- Global Multidimensional Poverty Index - 2019
- LaQshya: Labour Room Quality Improvement Initiative
- Midday Meal Scheme
- Rotavirus Vaccination Drive
- Controlling Chikungunya and Dengue through Bacteria
- Declining Sex Ratio and Fertility Rates
- Food Security and Nutrition
- Ebola: Global Health Emergency
- Tribal Education
- Child Labour in Film and Television Industry
- Special Courts for POCSO Cases
- New Tool to Reduce Maternal Mortality
- Kan Sikul, Kan Huan

WHO's Self Care Guidelines

The **World Health Organisation (WHO)** has launched its first guidelines on **self-care interventions for health**.

- Self-care intervention guidelines are based on scientific evidence for the health benefits of certain interventions that can be done outside the conventional sector.
- Self-care intervention guidelines are not intended to replace high-quality health services nor are they a shortcut to achieving **universal health coverage**.

Self-Care

- As per WHO "the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with illness and disability with or without the support of a health-care provider" is self-care.
- Self-care interventions have a unique potential in **reducing inefficiencies** in health expenditure, improving the quality of health coverage and increasing the agency and autonomy of even the **most vulnerable populations** to make informed decisions about their health.
- **Self Care Intervention Guidelines:** In its first volume, the guidelines focus on sexual and reproductive health and rights. Some of the interventions include:

- Self-sampling for **human papillomavirus (HPV)** and sexually transmitted infections.
- Self-injectable contraceptives.
- Home-based ovulation predictor kits.
- **Human immunodeficiency virus (HIV)** self-testing and self-management of medical abortion.

Need for self-care

- Guidelines are a response to an estimate that by 2035 the world will face a shortage of nearly 13 million healthcare workers and presently at least 400 million people worldwide lack access to the most essential health services.
- According to WHO in the near future, 1 in 5 of the world's population will be living in settings that are experiencing humanitarian crises (series of events that are threatening in terms of health, safety or well being of a community or large group of people) hence self-care interventions guidelines will act as the first line of defence and will prevent health crisis.

Significance of Self-Care

- **Autonomy and timely intervention:** Self-care interventions represent a significant push towards new and greater self-efficacy, autonomy and engagement in health for self-carers and caregivers.

Note:



- **Accessibility:** It could expand access to health services, including for vulnerable populations.
- **Right to health:** People will be able to access, control, and have affordable options to manage their health and well-being.
- **Equality:** Self-care is also a means for people who are negatively affected by **gender, political, cultural and power dynamics**, including those who are forcibly displaced, to have access to sexual and reproductive health services, as many people are unable to make decisions around sexuality and reproduction.

Scheme for Trans-Disciplinary Research for India's Developing Economy

The **University Grants Commission (UGC)** has approved a new initiative, **Scheme for Trans-Disciplinary Research for India's Developing Economy (STRIDE)**, to support socially relevant, local need-based, nationally important and globally significant research projects.

- The UGC has set up an advisory committee under its Vice-Chairman **Bhushan Patwardhan**, to oversee the entire scheme.

Components of the Scheme

- **Component 1:** The Scheme will provide for research capacity building in diverse disciplines by mentoring, nurturing and supporting young talents to innovate pragmatic solutions for local, regional, national and global problems. Grant available is up to Rs. 1 crore.
- **Component 2:** It will mainly focus on enhancing problem-solving skills with the help of social innovation and action research to improve the wellbeing of people and contribute to India's developing economy. Grant up to Rs. 50 lakh to 1 crore is available for projects under this component.
- **Component 3:** It will fund high impact research projects in the identified thrust areas in humanities and human sciences through a national network of eminent scientists from leading institutions. Grant available under this component is up to Rs. 1 crore for one Higher Educational Institution and up to Rs. 5 crores for a multi-institutional network.

Expected Benefits from the Scheme

- It will help **strengthen transdisciplinary research culture** in colleges and universities.
- Transdisciplinary research is a team effort of investigators from different disciplines to create new **conceptual, theoretical, methodological innovations** that integrate and transcends beyond discipline-specific approaches to address a common problem.
- It goes beyond the mere production of knowledge and extends to the practical use of the knowledge outside academic endeavour.
- It will provide an opportunity to build **multi-sectoral linkages** between university-government-community-industry for national development and wellbeing of people.
- It will give a major impetus to high impact research in **Humanities and Human Sciences**.

University Grants Commission (UGC)

The **University Grants Commission (UGC)** came into existence on 28th December 1953 and became a statutory organization of the Government of India by an **Act of Parliament in 1956**, for the coordination, determination and maintenance of standards of teaching, examination and research in university education.

- The head office of the UGC is located in **New Delhi**.

Non-Communicable Diseases in India

According to **Indian Council of Medical Research (ICMR)** report titled "**India: Health of the Nation's States**" contribution of Non-Communicable Diseases (NCDs) to total death in the Country was 61.8% in 2016, as compared to 37.9% in 1990.

- Some examples of common NCDs, i.e. **diabetes, hypertension and cancers (Oral, Breast and Cervical)** are on the rise in India.
- Risk factors for NCDs include ageing, unhealthy diet, lack of physical activity, high blood pressure, high blood sugar, high cholesterol and obesity.
- Also In the States of Kerala, Goa and Tamil Nadu, due to epidemiological transition, fewer deaths are recorded for communicable, maternal, neonatal and nutritional diseases, thereby raising the share of NCDs in total deaths.

Note:



Epidemiologic Transition

- The epidemiologic transition is that process by which the **pattern of mortality and disease is transformed** from one of high mortality among infants and children to one of the **degenerative and man-made diseases** (such as those attributed to smoking) affecting principally the elderly.
- Though public health is a State subject, Central Government supplements the efforts of the State Governments. For example:
 - **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under the **National Health Mission (NHM)**.
 - The objectives of the programme include **health promotion activities** and **opportunistic screening** for common Non-Communicable Diseases (NCDs) including cancer.
 - Key components of population-based screening include **community-based risk assessment, screening, referral, and follow up** of all individuals of 30 years and above for common NCDs
 - The initiative will help in early diagnosis and will **generate awareness** on risk factors of NCDs.
- Citing the growing occurrence of cancer in India, the Union government sought to enhance the facilities for tertiary care of cancer.
 - The Central Government is strengthening of tertiary care cancer facilities scheme to support setting up of **State Cancer Institutes (SCI)** and **Tertiary Care Centres (TCC)** in different parts of the country.
 - Oncology is now being focussed in new AIIMS and many upgraded institutions under **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)**.
 - **Affordable Medicines and Reliable Implants for Treatment (AMRIT)** Deendayal outlets have been opened at 159 Institutions/Hospitals with an objective to make available **Cancer and Cardiovascular Diseases drugs** and implants at discounted prices to the patients.
 - **Jan Aushadhi stores** are set up by the Department of Pharmaceuticals to provide generic medicines at affordable prices.

Disability and RTE: UNESCO Report

The **United Nations Educational, Scientific and Cultural Organization (UNESCO)** and the **Tata Institute of Social Sciences** have released a report titled '**State of the Education Report for India 2019: Children with Disabilities**'.

- The report states that in India, 75% of five-year olds with disabilities and a quarter (more than one in four) of children with disabilities (in the age group of 5 to 19 years) do not attend any educational institution.
 - The report is in synchronization with the **Sustainable Development Goal-4** which aims to ensure "**inclusive and equitable quality education**" and promote lifelong learning opportunities for all.

Key Findings

- There are more than 78 lakh children with disabilities in India between 5-19 years.
 - Only 61% of them were attending an educational institution.
 - About 12% had dropped out, while 27% had never been to school at all.
- There are fewer girls with disabilities in schools than boys but when it comes to school enrollment, more girls with disabilities get left behind than boys.
- According to UNESCO, India is home to 8 million children with disabilities, and 45% of them fail to attain literacy. Globally 15% of people are disabled.
- There are also differences among various types of disabilities like:
 - 20% of children with visual and hearing impairments had never been in school.
 - The percentage of children attending schools is the lowest among those with multiple disabilities, mental illnesses, and mental retardation (more than 50% do not attend school).
- A large number of children with disabilities do not go to regular schools but are enrolled at the National Institute of Open Schooling (NIOS).
 - Enrolment figures at NIOS show a decline for most categories of disabilities between 2009 and 2015.

Note:

National Institute of Open Schooling

- NIOS is an "Open School" to cater to the needs of a heterogeneous group of learners up to pre-degree level.
- It was started as a project by the **Central Board of Secondary Education (CBSE)**.
- The **National Policy on Education** suggested strengthening of the Open School System for extending open learning facilities at secondary level all over the country as an independent system with its own curriculum and examination leading to certification.

Challenges

- The **Right to Education Act** mandates enrolment, but not the provision of resources needed for the actual education of a child with disabilities.
- In many parts of rural India, if a parent opts for home-based education, the child may not be getting an education at all.
- Laws relating to the right to education and disabilities have certain ambiguities in terms of:
 - Where children with disabilities should study.
 - Who should teach them?
 - Gaps in terms of appropriate norms and standards applicable to all educational institutions.
- Lack of accessible physical infrastructure, assistive technologies, information and communication technology, and devices aggravates the situation of school dropout among disabled children.
- Inadequate allocations, delays in releasing funds and under-utilization of allocation are key challenges in financing education for children with disabilities.

Recommendations

- Amendments to the **Right of Children to Free and Compulsory Education Act (RTE)**, so that it can be aligned with the **Rights of Persons with Disabilities Act, 2016**.
- Need for **structural, funding and attitudinal changes** to ensure that no child is left out of the right to education.
- There should be concentrated campaigns and large scale awareness drives which can improve the attitude towards children with disabilities in the classroom and beyond.

- **Transformation of teaching practices** is the need of the hour to aid the inclusion of diverse learners.
- Establish a coordinating mechanism under the **Ministry of Human Resource Development** for effective convergence of all education programs of children with disabilities.

NMEICT

The Ministry of Human Resource Development administers the programme, **National Mission on Education through Information and Communication Technology (NMEICT)**, to leverage the potential of Information and Communication Technology to make the best quality content accessible to all learners in the country free of cost.

Initiatives under the Program

- **SWAYAM: The Study Webs of Active Learning for Young Aspiring Minds' (SWAYAM)** is an integrated platform for offering online courses, covering school (9th to 12th) to Postgraduate Level. The online courses are being used not only by the students but also by the teachers and non-student learners, in the form of lifelong learning.
- **SWAYAM Prabha:** It is an initiative to provide 32 High-Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on a 24x7 basis.
- **National Digital Library of India (NDL):** It is a project to develop a framework of virtual repository of learning resources with a single-window search facility. Presently, there are more than 3 crore digital resources available through the NDL.
- **Spoken Tutorial:** They are 10-minute long, audio-video tutorial, on open source software, to improve the employment potential of students. It is created for self-learning, audio dubbed into 22 languages and with the availability of online version.
- **Free and Open Source Software for Education (FOSSEE):** It is a project promoting the use of open-source software in educational institutions. It does that through instructional material, such as spoken tutorials, documentation, such as textbook companions, awareness programmes, such as conferences, training workshops, and internships.

Note:



- **Virtual Lab:** This is a project to develop a fully interactive simulation environment to perform experiments, collect data, and answer questions to assess the understanding of the knowledge acquired. There are about 225 such labs operational, with more than 1800 experiments that benefited more than 15 lakhs students.
- **E-Yantra:** It is a project for enabling effective education across engineering colleges in India on embedded systems and robotics. More than 275 colleges across India have benefited from this initiative.

Feminization of Agriculture

As per the **10th Agriculture Census (2015-16)**, the percentage of **female operational holdings** in the country has increased from about 13% during 2010-11 to around 14% during 2015-16.

- Agriculture, contributing around 16% to the GDP, is increasingly becoming a female activity.
- The agriculture sector employs 80% of all economically active women; they comprise 33% of the agricultural labour force and 48% of self-employed farmers.
- About 18% of the farm families in India, according to **NSSO Reports** are headed by women.
- According to the Economic Survey 2017-18, a rise in migration of men from rural to urban areas has resulted in feminization of agriculture.

Agriculture Census

- It is conducted at an interval of every five years by the Department of Agriculture, Cooperation and Farmers Welfare.
- Data on structural aspects of operational holdings in the country is collected through the census.
- The first census was conducted with reference year 1970-71.

Operational Holding

- All land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location is called an operational holding.

Challenges Faced by Women Farmers

- Lack of ownership of land

- Lack of access to financial credit
- Lack of access to resources and modern inputs (most farm machinery is difficult for women to operate)
- Increased work burden (on-farm and off-farm productive activities) with lower compensation

Steps Taken by Government

- **Mahila Kisan Sashaktikaran Pariyojana (MKSP)**
 - Implemented by the **Ministry of Rural Development**, it is a programme exclusively for women farmers.
 - It is a sub-component of **Deendayal Antyodaya Yojana-National Rural Livelihood Mission**.
 - It aims to empower women by enhancing their participation in agriculture and to create sustainable livelihood opportunities for them.
 - Up to 60% (90% for the North Eastern States) of the funding support for such projects is provided by the government.
 - It is in line with the provisions of the **National Policy for Farmers (2007)**.
- At least 30% of the budget allocation has been earmarked for women beneficiaries in all ongoing schemes/programmes and development activities.
- Government has increased its focus on women **self-help group (SHG)** to connect them to micro-credit through capacity-building activities and to provide information and ensuring their representation in different decision-making bodies.
- Also, recognizing the critical role of women in agriculture, the **Ministry of Agriculture and Farmers Welfare** has declared **15th October** of every year as **Women Farmer's Day**.

Way Forward

- Provision of credit without collateral under the **microfinance initiative** of the **National Bank for Agriculture and Rural Development** should be encouraged.
- Manufacturers should be incentivised to produce tools and machinery suited to women's needs.
- **Krishi Vigyan Kendras** in every district can be assigned an additional task to educate and train women farmers about innovative technology along with extension services.
- Government flagship schemes such as the **National Food Security Mission**, **Sub-mission on Seed and**

Note:

Planting Material and the **Rashtriya Krishi Vikas Yojana** should include women-centric strategies and dedicated expenditure.

Manual Scavenging in India

According to the **Social Justice and Empowerment Ministry**, despite a ban on manual scavenging from 1993, 620 cases of deaths of sanitation workers (while cleaning septic tanks and sewers) have been reported, of which 88 occurred in the past three years.

Manual scavenging

- Manual scavenging refers to the practice of manually cleaning, carrying, disposing or handling in any manner, human excreta from dry latrines and sewers.
- The practice of manual scavenging is linked to India's caste system where so-called lower castes were expected to perform this job.
- Manual scavengers are amongst the poorest and most disadvantaged communities in India.
- Frequent deaths occur as manual scavengers don't even have adequate tools and protective gear to do their work. It often involves using the most basic of tools such as buckets, brooms and baskets.

Issues Related to Manual Scavenging

- However, while manual scavenging for many may have ended as a form of employment, the stigma and discrimination associated with it still linger on.
 - This makes it difficult for liberated manual scavengers to secure alternative livelihoods.
 - People could once again return to manual scavenging in the absence of other employment opportunities to support their families.
- Correctly identifying manual scavengers remains a key challenge.

Government Interventions

- In 1993, the Government of India enacted the **Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act**.
 - The act prohibited the employment of manual scavengers for manually cleaning dry latrines and also the construction of dry toilets (that do not operate with a flush).

- It provided for imprisonment of up to a year and a fine.
- In 2013, this was followed by the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013**, which is wider in scope and importance, acknowledging the urgency of rehabilitating manual scavengers.
 - The act seeks to reinforce this ban by prohibiting manual scavenging in all forms and ensures the rehabilitation of manual scavengers to be identified through a mandatory survey.
 - **Key features of the Act:**
 - Prohibits the construction or maintenance of insanitary toilets.
 - Prohibits the engagement or employment of anyone as a manual scavenger and violation could result in a years' imprisonment or a fine of INR 50,000 or both.
 - Prohibits a person from being engaged or employed for hazardous cleaning of a sewer or a septic tank.
 - Offences under the Act are cognizable and non-bailable.
 - Calls for a survey of manual scavengers in urban and rural areas within a time-bound framework.
- A **Supreme Court order** in March 2014, makes it mandatory for the government to identify all those who died in sewerage work since 1993 and provide Rs.10 lakh each as compensation to their families.
- The Government of India has adopted a **two-pronged strategy** of eliminating in-sanitary latrines through demolition and conversion into sanitary latrines and developing a comprehensive rehabilitation package for manual scavengers through a survey.
 - A **comprehensive rehabilitation package** has been put together that includes livelihoods and skill development, access to education for children of former manual scavengers and alternate livelihoods.

Measles

The **World Health Organization (WHO)**, has declared **Sri Lanka**, a **measles-free country**.

- Sri Lanka is the fifth country in the WHO Southeast Asia region to eliminate **measles**.

Note:



- The elimination of a disease means that there have been zero new cases of the disease in the last three years.
- The country reported its last case of measles in May 2016.
- The other countries in the region which have eliminated measles in their geographical area are **Bhutan, Maldives, DPR Korea and Timor-Leste**.
- Sri Lanka has also become the **fourth country in the region, after Bhutan, Maldives and Timor-Leste**, to eliminate measles and control rubella, a flagship priority programme of WHO in the region, ahead of the 2020 regional target.
 - Rubella control is achieved when a country reduces the number of rubella cases by 95% as compared to cases in the year 2008.
- Sri Lanka's achievement has come at a time when globally measles cases are increasing.
- According to the latest Global Measles and Rubella Update, India had 56,399 confirmed measles cases and 1,066 confirmed rubella cases in the year 2018, thus quite far from eliminating the diseases completely.

Rubella and Measles

- Rubella is a contagious, generally mild viral infection that occurs most often in children and young adults.
- Measles is a highly contagious viral disease and is a cause of death among young children globally.
- Though the diseases are caused by different viruses but share more or less the same symptoms, including the red rashes.
- The Measles & Rubella Initiative, a global program, aims at eliminating both these diseases.
- The vaccine for the diseases are provided in the form of **measles-rubella (MR)**, **measles-mumps-rubella (MMR)**, or **measles-mumps-rubella-varicella (MMRV)** combination.

Global Report on Income Inequality

The International Labour Organisation in its **Labour Income Share and Distribution** dataset has revealed that top 10% earners in India made over 69% of the country's labour income in 2017, in contrast to 0.25% made by the bottom 10% earners.

- **Labour Income Share and Distribution** dataset developed by ILO offers two new indicators for major trends in the world of work, at national, regional and global levels:
 - One provides the first internationally comparable figures of the share of Gross Domestic Product that goes to workers rather than capital through wages and earnings.
 - The second looks at how labour income is distributed.

Key Findings

- The share of national income going to workers is declining, from 53.7% in 2004 to 51.4% in 2017.
- Worldwide, the income share of the middle 60% workers grew to 30.2% in 2017 from 23.6% in 2004, while the share of the richest 20% of workers came down by 6.8 percentage points.
- Countries, where top earners saw their share of national pay rise by at least one percentage point, include Germany, Indonesia, Italy, Pakistan, the United Kingdom and the United States
- Poorer countries tend to have much higher levels of pay inequality, something that exacerbates the hardships of vulnerable populations.
 - In Sub-Saharan Africa, the bottom 50% of workers earn only 3.3% of labour income, compared to the European Union, where the same group receives 22.9% of the total income paid to workers.

Income Inequality in India

- Pay inequality has remained consistent in India since 2004, although it has reduced at the global workplace in the last 13 years.
- **ILO report** has found that between 2000 and 2017, income inequality rose six times.
- India's richest 10% own as much as 80.7% of the country's total wealth, while 90% own only 19.3% of its total wealth

Global Multidimensional Poverty Index – 2019

Global Multidimensional Poverty Index - 2019 (MPI), released by the **United Nation Development Programme (UNDP)** has revealed that there are **vast inequalities** across countries, and among the poorer segments of societies.

Note:



- MPI-2019 edition is a revised version of [MPI-2018](#).
- The MPI captures both the **incidence and intensity of poverty** and tracks 101 countries on deprivations across ten indicators in health, education and standard of living.

This index is developed by the **Oxford Poverty and Human Development Initiative (OPHI)** and the **United Nations Development Programme (UNDP)**.

- As per the report, a single measure is not a sufficient guide to both inequality and multidimensional poverty, and studies such as the MPI, [Human Development Index](#), and the [Gini coefficient](#) (which measures countries wealth-income distribution), can contribute important and distinctive information for policy action to effectively reduce poverty.

Key Findings

- As per the index, 1.3 billion people in the world are still **multidimensionally poor**.
 - Multidimensionally poor means that poverty is defined not simply by income, but by a number of indicators, including poor health, poor quality of work and the threat of violence.
- Level of Inequality and poverty is **very high** in **Sub-Saharan Africa and South Asia**.
- **Bangladesh, Cambodia, Democratic Republic of Congo, Ethiopia, Haiti, India, Nigeria, Pakistan, Peru and Vietnam** (10 selected countries have a combined population of around 2 billion people) have shown significant progress towards achieving [Sustainable Development Goal 1](#) i.e ending poverty in all its forms, everywhere.
- One in every three children (under the age of 10) and every second child below the age of 18 years is multidimensionally poor in the world.
- About 34% of the world's children and 17.5% adults covered under MPI survey are multidimensionally poor.
- One adult in six is multidimensionally poor compared with one child in three, hence children are more prone to multidimensional poverty than adults.
- Multidimensionally poor children are concentrated more in **Sub-Saharan Africa and South Asia**.
- In African countries such as **Burkina Faso, Chad, Ethiopia, Niger and South Sudan** 90% or more children (under the age of 10) are multidimensionally poor.

- Trends in poverty reduction is uneven in all 10 countries (**Bangladesh, Cambodia, Democratic Republic of Congo, Ethiopia, Haiti, India, Nigeria, Pakistan, Peru and Vietnam**) as rural areas are poorer than urban areas.
 - In **Cambodia, Haiti, India and Peru** poverty reduction in rural areas outpaced urban areas.

Indian Scenario

- India lifted **271 million people out of poverty** between 2006 and 2016, (reduced from 0.283 in 2005-06 to 0.123 in 2015-16) recording the fastest reductions in the multidimensional poverty index values during the period with strong improvements in areas such as **assets, cooking fuel, sanitation and nutrition**.
- Among 10 selected countries **India and Cambodia** reduced their MPI values the fastest and they did not leave the poorest groups behind.
- **Jharkhand** has reduced the **incidence of poverty at a faster pace** than other regions (reduced the incidence of **multidimensional poverty** from 74.9% in 2005-06 to 46.5% in 2015-16).
- **India (along with Ethiopia and Peru)** significantly reduced deprivations in all 10 indicators, namely nutrition, sanitation, child mortality, drinking water, years of schooling, electricity, school attendance, housing, cooking fuel and assets.
 - MPI reduced from 640 million people (55.1%) in 2005-2006 to 369 million people (27.9%) in 2015-16.

LaQshya: Labour Room Quality Improvement Initiative

Recently, the **Union Ministry of Health and Family Welfare** has launched "**LaQshya**" (**Labour room Quality Improvement Initiative**) to improve the quality of care in the labour room and maternity operation theatres in public health facilities.

- The aim of the LaQshya program is to reduce preventable maternal and newborn mortality, morbidity and stillbirths associated with the care around delivery in the labour room and maternity **Operation Theatre (OT)** and ensure respectful **maternity care**.

Implementation

- The LaQshya program will be implemented by all Medical College Hospitals, District Hospitals and First

Note:



Referral Unit (FRU), and Community Health Centres (CHCs) and will benefit every pregnant woman and new-born delivering in public health institutions.

- Under the initiative, a multi-pronged strategy has been adopted such as improving infrastructure up-gradation, ensuring the availability of essential equipment, providing adequate human resources, capacity building of health care workers and improving quality processes in the labour room.
- The **Quality Improvement in the labour room and maternity OT** will be assessed through **NQAS (National Quality Assurance Standards)**.

Background

- India has come a long way in improving maternal survival as **Maternal Mortality Ratio (MMR)** has reduced from 167 in 2011-13 to 130 in 2014-16, an impressive decline of 22% in the last few years.
- India is further committed to ensuring safe motherhood to every pregnant woman in the country.

Maternal Mortality Ratio

- The **Maternal Mortality Ratio (MMR)** is a key performance indicator for efforts to improve the health and safety of mothers before, during, and after childbirth.
- MMR is the annual number of maternal deaths per 100,000 live births.
- Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy.

Midday Meal Scheme

The **Human Resource Development (HRD)** Ministry has received 35 complaints from 15 States and Union Territories (UTs) regarding substandard food quality in mid-day meals in the past three years.

- The Midday Meal Scheme comes under the **HRD Ministry's Department of School Education and Literacy**.
- Launched in the year 1995 as a **centrally sponsored scheme**, it provides that every child within the age group of six to fourteen years studying in classes I to VIII who enrolls and attends the school, shall be provided hot cooked meal having nutritional standards of 450 calories and 12 gm of protein for primary (I-V class) and 700 calories and 20 gm protein for upper

primary (VI-VIII class), free of charge every day except on school holidays.

- The scheme covers all government and government-aided schools and also **Madarsa and Maqtab**s supported under the **Sarva Shiksha Abhiyan (SSA)**.
- The last Mid Day Meal Rules were notified in the year 2015 under the **National Food Security Act, 2013** but amendments have been made from time to time.
- The rules provide that
 - The place of serving meals to the children shall be school only.
 - The meal shall be prepared in accordance with the Mid Day Meal guidelines issued by the Central Government from time to time.
 - The latest guidelines provide instructions on procuring **AGMARK** quality items for preparation of midday meals, tasting of meals by two or three adult members of the school management committee, including at least one teacher, before serving to children.
 - If the Mid-Day Meal is not provided in school on any school day due to non-availability of food grains or any other reason, the State Government shall pay food security allowance by 15th of the succeeding month.
 - The School Management Committee mandated under **Right to Free and Compulsory Education Act, 2009** shall also monitor implementation of the Mid-day meal Scheme.
 - The **State Steering-cum Monitoring Committee (SSMC)** shall oversee the implementation of the scheme including the establishment of a mechanism for the maintenance of nutritional standards and quality of meals.
- The government provides **financial support** to the eligible schools/implementing agencies in the form of free food grains and by bearing cooking-related costs.

Rotavirus Vaccination Drive

The government of India is set to launch a rotavirus vaccine drive across all states and Union territories by September 2019.

- The vaccine is currently being administered in Himachal Pradesh, Haryana, Odisha, Andhra Pradesh, Assam, Tripura, Rajasthan, Madhya Pradesh, and Tamil Nadu.

Note:



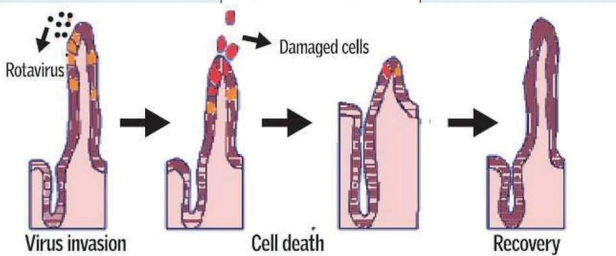
HOW ROTAVIRUS ATTACKS

The rotavirus attacks the villus tip cells of the small intestine, and obstructs digestion and absorption

1 Once rotavirus enters the small intestine, it sticks to glycolipids on villus cells (see figure) lining small intestine

2 It invades the villus tip cells, causing atrophy, loss of digestive enzymes, and a dip in absorption

3 Once the villi become blunted, the resulting malabsorption of carbohydrates results in diarrhoea



Source: Principles and Practices of Clinical Virology, 5th ed. 2004

- The **Rotavac** has been introduced in **India's Universal Immunisation Programme (UIP)** including **Inactivated Polio Vaccine (IPV)**, **Measles, Rubella (MR) vaccine**, **Adult Japanese Encephalitis (JE) vaccine**, **Tuberculosis**, **Diphtheria**, **Pertussis**, **Hepatitis B**, **Pneumonia** and **Meningitis due to Haemophilus Influenzae type b (Hib)**.

Rotavirus

- Rotavirus can cause **diarrhoea**, which can lead to dehydration (not having enough water in the body).
- Rotavirus is a **contagious disease** that spreads easily from child to child.
- Rotavirus spreads when a person comes in contact with the faeces of someone who has rotavirus and then touches their own mouth. For example, rotavirus can spread when a child with rotavirus doesn't wash their hands properly after going to the bathroom and then touches food or other objects.
- Symptoms include:
 - Severe diarrhoea
 - Throwing up
 - Dehydration
 - Fever
 - Stomach pain
- **World Health Organisation (WHO)** recommends that the first dose of **rotavirus vaccine** be administered as soon as possible after 6 weeks of age, along with **DTP vaccination (tetanus and pertussis)**.
- The **WHO has recommended** the inclusion of rotavirus vaccine in the National Schedules of the countries

where under-five mortality due to diarrhoeal diseases is more than 10%.

- Currently, two vaccines are available against rotavirus:
 - **Rotarix (Glaxo Smith Kline)**: is a monovalent vaccine recommended to be orally administered in two doses at 6-12 weeks.
 - **Rota Teq (Merck)** is a pentavalent vaccine recommended to be orally administered in three doses starting at 6-12 weeks of age.

Monovalent vaccine and Pentavalent vaccine

- **Monovalent vaccines** are designed to immunize against a single antigen or single microorganism.
- The **pentavalent vaccine** provides protection to a child from five life-threatening diseases – **Diphtheria**, **Pertussis**, **Tetanus**, **Hepatitis B** and **Haemophilus Influenzae type b (Hib)**.

Controlling Chikungunya and Dengue through Bacteria

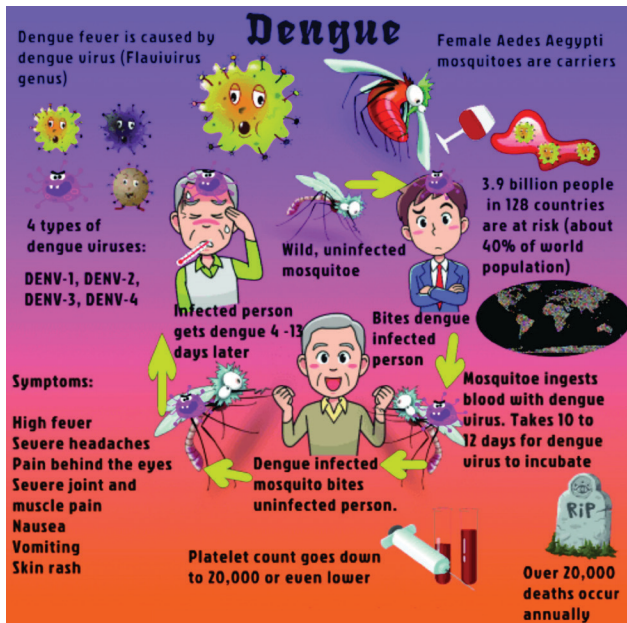
- To control the spread of dengue and chikungunya, scientists at the **Indian Council of Medical Research (ICMR)** have developed a strain of **Aedes aegypti mosquito** into which a naturally occurring bacteria, **Wolbachia**, is introduced.
- This variant of **Aedes aegypti** mosquito has been named the **Puducherry strain** since it was developed at the **Vector Control Research Centre (VCRC)**, Puducherry in collaboration with **Monash University** in Australia.
- **Aedes aegypti** mosquito is the main vector that transmits the viruses that cause dengue.

Mechanism

- The bacteria **Wolbachia** "**inhibits**" viral infection, that is, even if people encounter mosquito bite, they will not be infected. This happens because bacteria do not allow the **virus to replicate in the mosquito** thereby minimising its number within the mosquito and hence virus won't be transmitted through a bite.
- Over a period of time, the population of **Aedes aegypti mosquitoes** in India will be slowly replaced by this new strain carrying **Wolbachia** bacteria. This is called a population replacement strategy.
- This strain will specifically help in reducing the number of dengue cases across the country.

Note:





Bacteria Wolbachia

- Wolbachia is natural bacteria present in up to 60% of insect species, including some mosquitoes.
- However, Wolbachia is not usually found in the *Aedes aegypti* mosquito, the primary species responsible for transmitting human viruses such as **Zika, dengue, chikungunya and yellow fever**.
- Wolbachia is safe for humans, animals and the environment.

About Dengue

- **Dengue** is transmitted by several species of mosquito within the genus *Aedes*.
- Symptoms include **fever, headache, muscle and joint pains**, and a characteristic skin rash that is similar to measles. There are four strains and Type-II and IV are considered more severe and normally require hospitalisation.
- **Dengvaxia** has been approved by the **US Food & Drug Administration**, the first dengue vaccine to get the regulatory nod in the US. The Indian drug controller has yet to grant approval to Sanofi's dengue vaccine - Dengvaxia.
- India has reported 6,210 cases and six deaths from dengue until June 9, 2019.

Indian Council Of Medical Research

- The **Indian Council of Medical Research (ICMR)** is the **apex body** in India for the formulation, coordination

and promotion of biomedical research, one of the oldest medical research bodies in the world.

- It is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare.

Declining Sex Ratio and Fertility Rates

As per the **Sample Registration System (SRS)** data from the Registrar General of India, the **country's sex ratio at birth (SRB) declined to 898 in triennium (three year period) ending 2017**.

- The fertility rate reduced from 2.3 in the year 2016 to 2.2 in the year 2017, close to the **replacement level of fertility** of 2.1.
- This trend is in line with the population **projections by the United Nations**, which have been revised downward in recent years. The year in which India will surpass China in population has been extended from 2022 (according to 2015 report) to 2027 (according to the 2019 report).
- This trend also indicates that Indians want fewer children now but want them as sons. The Economic Survey 2017-18 underlined the meta preference towards son in detail.
- It is **Telangana, Delhi, Kerala along with Bihar**, that has shown the sharpest worsening in sex ratio at birth in recent years.
- Though the use of sex-selection techniques is the biggest cause, social norms that prefer male children is a reason behind poor sex ratio in states like Bihar whereas in urbanised states, the richer households prefer more sons due to flawed social and economic reasons.

Note:

The SRS data also demonstrated that the proportion of the economically active population (15-59), as well as the old age population (60+) in India, is rising. While the former constitutes 65.4 % of the populace, the latter was at 8.2 % in 2017.

The Sample Registration System

- The **Office of Registrar General (under the Ministry of Home Affairs)** initiated the scheme of sample registration of births and deaths in India popularly

Note:

known as **Sample Registration System (SRS)** in 1964-65 on a pilot basis and on full scale from 1969-70. The SRS since then has been providing data on a regular basis.

- The revision of the SRS sampling frame is undertaken every ten years based on the results of the latest Census.

Food Security and Nutrition

According to the latest **UN report, The State of Food Security and Nutrition in the World 2019**, more than 821 million people suffered from hunger worldwide in the year 2018.

- The report was prepared by the **UN Food and Agriculture Organization (FAO)** and other United Nations agencies including the **World Health Organization (WHO)**.

Key Findings

- **Undernourishment:** After decades of steady decline, the trend in world hunger – as measured by the prevalence of undernourishment – reverted in the year 2015, remaining virtually unchanged in the past three years at a level slightly below 11%, posing a challenge to achieving the **SDG Goal 2** (End hunger, achieve food security and improved nutrition and promote sustainable agriculture).
 - Hunger is on the rise in almost all African subregions, making Africa the region with the highest prevalence of undernourishment, at almost 20%.
 - In Asia, despite great progress in the last five years, Southern Asia is still the subregion where the prevalence of undernourishment is highest, at almost 15%.
 - It is projected that undernutrition will reduce Gross Domestic Product (GDP) by up to 11% in Africa and Asia.
 - Most countries (65 out of 77) that experienced a rise in undernourishment between 2011 and 2017 simultaneously suffered an economic slowdown or downturn.
 - Economic shocks have also prolonged and worsened the impact of conflict and climate events on acute food insecurity.

- **Breastfeeding:** Only 40% of infants under six months are exclusively breastfed, which is far from the 2030 target of 70%.
- **Low Birthweight:** No progress has been made in reducing the prevalence of low birth weight since 2012. One in seven live births, or 20.5 million babies globally, suffered from low birth weight in 2015.
- **Stunting:** The number of stunted children has declined by 10% over the past six years. In the year 2018, Africa and Asia accounted for more than nine out of ten of all stunted children globally, representing 39.5% and 54.9 % of the global total, respectively.
- **Food Insecurity:** About 2 billion people in the world experience moderate or severe food insecurity.
 - In every continent, the prevalence of food insecurity is slightly higher among women than men, with the largest differences found in Latin America.
 - **Moderate food insecurity:** People experiencing moderate food insecurity face uncertainties about their ability to obtain food, and have been forced to compromise on the quality and/or quantity of the food they consume.
 - **Severe food insecurity:** People experiencing severe food insecurity have typically run out of food and, at worst, gone a day (or days) without eating.
- **Obesity:** Overweight and obesity continue to increase in all regions, particularly among school-age children and adults. In 2018, an estimated 40 million children under five were overweight.
 - Throughout the world, most school-age children do not eat enough fruit or vegetables, regularly consume fast food and carbonated soft drinks, and are not physically active on a daily basis.
- **Anaemia:** It currently affects 33 % of women of reproductive age – more than double the 2030 target of 15 %.

India Specific Findings

- The prevalence of **undernourishment** in India declined from 22.2% in 2004-06 to 14.5% between 2016 and 2018.
- In Southern Asia, food insecurity increased from less than 11% in 2017 to more than 14% in 2018. This possibly reflects an increase in the unemployment rate in India between 2017 and 2018, and especially in Pakistan, where growth is expected to slow down significantly.

Note:



- In the Indian Himalayas, economic slowdown coupled with natural resource depletion and climate change negatively impacted on food production and employment opportunities. This resulted in increased threats to food security due to lower purchasing power.

Suggestions

- Reducing **gender inequalities** and those inequalities arising from social discrimination.
- Creating **synergies** between poverty reduction, hunger and malnutrition eradication.
- Policies to protect, promote and support breastfeeding and to increase the availability and affordability of nutritious foods that constitute a healthy diet are required, along with measures to create healthier food environments and limit consumption of harmful fats, salt and sugars.
- **Safeguarding food security and nutrition** through economic and social policies that help counteract the effects of economic slowdowns or downturns, including guaranteeing funding of social safety nets and ensuring universal access to health and education.

Ebola: Global Health Emergency

The [World Health Organization](#) has announced the Ebola outbreak in the Democratic Republic of Congo (a country in Central Africa) as the global health emergency.

- **WHO defines a global emergency** as an “extraordinary event” which constitutes a risk to other countries and requires a coordinated international response.
- A declaration of a **global health emergency** brings greater international attention and aid (both financial and technical) but should not be used to **stigmatise or penalise** the people by imposing travel or trade restrictions as those restrictions actually restrict the flow of goods and health care workers into affected countries and turn counter-productive.
- It can be noted that recently, the **World Health Organisation (WHO)** has released a list of “[Ten threats to global health in 2019](#)” which also included Ebola.

Ebola Virus Disease

- Ebola virus disease, formerly known as Ebola haemorrhagic fever, is transmitted to people from wild animals and spreads in the human population through human to human transmission.

Ebola Outbreak

- The 2014-2016 outbreak in West Africa was the largest Ebola outbreak since the virus was first discovered in 1976.
- The outbreak started in Guinea and then moved across land borders to Sierra Leone and Liberia.
- The current 2018-2019 outbreak in the Eastern Democratic Republic of Congo is highly complex.

- **Transmission:** [Fruit bats of the Pteropodidae family](#) are natural Ebola virus hosts.

- **Animal to human transmission:** Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as fruit bats, chimpanzees, gorillas, monkeys, forest antelope or porcupines found ill or dead or in the rainforest.

- **Human-to-human transmission:** Ebola spreads via direct contact (through broken skin or mucous membranes) with:

- Blood or body fluids of a person who is sick with or has died from Ebola.
- Objects that have been contaminated with body fluids (like blood, feces, vomit) from a person sick with Ebola or the body of a person who died from Ebola

- **Symptoms:** Symptoms of Ebola can be sudden and include:

- Fever
- Fatigue
- Muscle pain
- Headache
- Sore throat
- Vomiting
- Diarrhoea
- Symptoms of impaired kidney and liver function
- In some cases, both internal and external bleeding

- **Diagnosis:** It can be difficult to clinically distinguish Ebola from other infectious diseases such as [malaria](#), typhoid fever and meningitis but confirmation that symptoms are caused by Ebola virus infection are made using the following diagnostic methods:

- ELISA (antibody-capture enzyme-linked immunosorbent assay)
- Antigen-capture detection tests
- Serum neutralization test

Note:

- Reverse transcriptase-polymerase chain reaction (RT-PCR) assay
- Electron microscopy
- Virus isolation by cell culture.

Tribal Education

Tribals in Wayanad district of Kerala are close to achieving 100% literacy rate.

Scheduled Tribes

- President under Article 342 is empowered to declare communities as scheduled tribes. While Parliament by law can amend the list.
- According to Census 2011, tribes constitute 8.6% of our total population and out of which only 58.96% are literate.

Challenges in Tribal Education

- Education is one of the primary agents of transformation towards development.
- Education is in fact, an input not only for economic development of tribes but also for inner strength of the tribal communities which helps them in meeting the new challenges of life.
 - **Medium of Instruction:** Language has been the biggest constraints in tribal education. All the curriculums and teachers' modules are designed in official/regional language which is alien for tribal students.
 - **Economic Condition:** The economic conditions of tribal people are so bad that they do not desire to spare their children or their labour power and allow them to attend schools.
 - **Teacher Absenteeism:** In the remote tribal areas the teacher absenteeism is a regular phenomenon and this affects largely the quality of education.
 - **Attitude of the Parents:** As education does not yield any immediate economic return, the tribal parents prefer to engage their children in remunerative employment which supplements the family income.
 - **Infrastructural Challenges:** Most of the schools located in tribal areas have minimal infrastructural facilities. These schools are not equipped with teaching learning materials, study materials, even minimum sanitary provisions are not maintained.

Government Intervention

- **Eklavya Model School:** Residential School based on Navodaya Model to be opened in each tribal block by 2022.
- **Rajiv Gandhi National Fellowship Scheme (RGNF):** It was introduced in 2005-2006 with the objective to encourage the students belonging to the ST community to pursue higher education.
- Pre and Post Matric Scholarship Schemes.
- **Vocational Training Center in Tribal Areas:** The aim of this scheme is to develop the skills of ST students depending on their qualifications and present market trends.

Recommendations

- **Kothari Commission** stressed to pay special attention to the education of STs.
- **XaXa Committee** recommended a greater focus on removing gender disparity in education.
- **Awareness Campaigns** like street drama, Camps Counselling session to bring attitudinal change in parents.
- Emphasis should be given to **career or job-oriented courses**.
- Teachers should be **locally recruited** who understand and respect tribal culture and practices. Most importantly they should be acquainted with the local language.

Child Labour in Film and Television Industry

The government is working to ensure “**strict compliance**” of norms on working conditions for children by film and television industry, as well as the inclusion of mandatory disclaimers when they appear on the screen.

- The Ministry has expressed concern over violations of child labour rules in film and television.

Child Labour

- The term ‘**Child Labour**’ is defined as a work that **deprives children of their childhood, potential, dignity and is harmful to their physical and mental development.**
- It refers to the work that is **mentally, physically, socially or morally dangerous, harmful to children,**

Note:



interferes with schooling by depriving them of the opportunity to attend school and compels them to leave school prematurely or to combine school attendance with excessively long and heavy work.

Child Labour (Prohibition and Regulation) Amendment Rules, 2017

- Under the **Child Labour (Prohibition and Regulation) Amendment Rules, 2017**, child artistes are supposed to work for a maximum of five hours a day and not more than three hours without rest.
- The rules also require permission from the **District Magistrate** and an undertaking by the producer, as well as the deployment of one person each, for ensuring the safety and security of a maximum of five children.
- Children should not be away from schooling for more than 27 days and 20% of their income should be deposited in a fixed deposit in their name, as per the rules.
- If a child was involved in filming, the film should include a disclaimer saying that all measures were taken to ensure that no abuse, neglect or exploitation of the child took place during shooting.

Special Courts for POCSO Cases

The **Supreme Court** has directed the Centre to set up special courts to deal exclusively with **Protection of Children from Sexual Offences (POCSO)** cases.

- **Special courts** will be established under a Central scheme (fully funded by the Centre) in each district across the country that had over a 100 cases of child abuse and sexual assault pending trial under the **Protection of Children from Sexual Offences (POCSO) Act**.
- The Centre would have to appoint trained, sensitized prosecutors and support persons to deal with the POCSO cases (*deals with crime against minor*).
- Supreme court has also directed states to ensure there is **no delay in Forensic Sciences Laboratories (FSL)** releasing test reports in POCSO cases.
- Supreme Court has found that the **National Commission for the Protection of Child Rights (NCPCR)**, which is mandated to monitor implementation of the Protection of Children from Sexual Offences (POCSO) Act, does not have any data on POCSO cases in the country.

Problems in NCPCR

- NCPCR still follows an **outdated format of data collection**, which only lists out state wise number of nodal officers, special courts, special prosecutors, whether the victim has received compensation, etc.
- It **doesn't collect or maintain district-wise data** on POCSO cases before the police or courts, nor does it have disaggregated data as per various sections of POCSO Act.
- NCPCR has started **the process of developing a new online tool** and format for data collection in 2018 but the portal is still in its testing period.

Pendency in POCSO Cases

- Nearly 1.5 lakh cases under POCSO Act are pending.
- Uttar Pradesh has the most cases pending (over 44,000) followed by Maharashtra (over 19,000 cases).
- According to **National Crime Records Bureau** around 89% (in 2016) of the total cases before the courts are pending trial while the pendency rate at the police investigation stage is 31%.

The National Commission for the Protection of Child Rights

- NCPCR was established in March 2007 as a statutory body under the Commission for Protection of Child Rights Act, 2005.
- It was set up to protect, promote and defend child rights in the country.

Functions of NCPCR under POCSO Act

- To monitor the implementation of the provisions of the POCSO Act.
- Monitor the designation of Special Courts by state governments.
- Monitor the appointment of Public Prosecutors by state governments.
- Monitor formulation of the guidelines described in the Act by the state government.

New Tool to Reduce Maternal Mortality

The use of **Non-pneumatic Anti- Shock garment (NASG)** controls blood loss due to **postpartum haemorrhage (PPH)**, thus saving the lives of new mothers.

Note:

- Postpartum haemorrhage (PPH) leads to continuous and **excessive bleeding**. The rapid loss of blood because of PPH reduces the **body's blood pressure** and can even cause death.
- The **NASG applies pressure to the lower body and abdomen**, thereby forcing the blood that was getting accumulated in the pelvic area to other essential organs of the body. Thus, NASG **quickly stabilizes patient** and gives enough time to doctors for treatment.
- NASG is part of a **local initiative named Sahara**, by the district's development officer (Arun Mahesh Babu) of Ahmedabad district in Gujarat. The officer has started the initiative in November 2018.
- While there were 8 maternal deaths in the district because of PPH between January and November 2018, since the introduction of this initiative there have been no PPH deaths.
 - A lot of mothers were **anaemic** in the Ahmedabad district because of **poor nutrition**. This weakness compounds the damage caused by **excessive and sudden bleeding**.
 - Moreover, women delivering children in rural areas are far away from district hospitals when such complications occur. Data showed that almost 30% of maternal deaths in the state were because of PPH and these primarily took place within the first 4 to 24 hours after childbirth.
- Today, 40 PHCs (Primary Health Care Centres) in Ahmedabad have an NASG suit each - each suit can be used 140 times - and the government has spent Rs 14,500 per suit under the **Janani Shishu Suraksha Karyakram (JSSK)**.

Janani Shishu Suraksha Karyakram (JSSK)

- The Government of India has launched **Janani Shishu Suraksha Karyakram (JSSK) on 1st June, 2011**.
- It is an initiative to provide completely free and cashless services to pregnant women including

normal deliveries and caesarean operations and sick newborn (up to 30 days after birth) in Government health institutions in both rural & urban areas.

- It will motivate those who still choose to deliver at their homes to opt for institutional deliveries.
- According to **Sample Registration System** results of 2016-17, Gujarat's **IMR** (per 1,000 live births) was 30 and **MMR** (per 100,000 live births) was 91 — better than the national averages but quite high for a relatively more prosperous state.

Kan Sikul, Kan Huan

Mizoram's Lawngtlai district administration's project **Kan Sikul, Kan Huan (My School, My Farm)** has been made the model for all schools and colleges in Mizoram.

- Kan Sikul, Kan Huan **aims to curb the problem of shortage of fruits and vegetables** in the region by setting up the kitchen/ nutrition gardens in every school.
- The project seeks to make Lawngtlai self-sufficient in the local variety of fruits and vegetables and fight **malnutrition** among children (by March 2020) by letting every **school, Anganwadi, child care institutions and hostel** in Lawngtlai to grow their own fruits and vegetables with the help of teachers, parents and community members.
- Project is in consonance with the objectives of central governments **Poshan abhiyan**.
- Lawngtlai, is Mizoram's most backward and disaster-prone district with 35.3% stunted, 21.3% underweight and 5.9% severely wasted (low weight-for-height) children under 5 (highest on all counts in Mizoram).
- Kitchen /nutrition gardens have yielded in **improving the nutritional content** of the **midday meal** served in the schools.



Note:



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Security

Highlights

- *INS 'Shivalik' and INS 'Sindhukirti'*
- *INS Viraat to be Scrapped*
- *LCU L-56 Commissioned into Indian Navy*
- *National Defense Authorisation Act*
- *Third Generation NAG Missile*
- *Bhabha Kavach*
- *Social Engineering Attacks*
- *Security Pedia*
- *Maharashtra to Adopt AMBIS*

INS 'Shivalik' and INS 'Sindhukirti'

Defence Minister visited the Indian Navy's indigenously designed stealth frigate, INS 'Shivalik' and INS 'Sindhukirti'.

INS Shivalik

- **INS Shivalik** is India's first stealth frigate in the Shivalik series under project 17 with 80% indigenous content.
 - Stealth frigates can escape detection by normal radars and surveillance equipment.
- INS Shivalik is armed with missiles, helicopter support, mounted guns and a combat management system that can effectively coordinate all weapons and sensors onboard, giving it the ability to deal with multiple threats.
- Special aerodynamics, equipment, and materials used in designing and building INS 'Shivalik' makes it very difficult to monitor their movements.
- Apart from India, only the US, Russia, UK, France, Sweden, Japan, Italy, and China have the capability to build stealth warships of this size and class.

Project 17 – Shivalik class Frigate

- The **Shivalik class or Project 17** is a class of multi-role frigates in service with the Indian Navy.
- Stealth Frigates under Shivalik class series are **INS Shivalik, INS Sahyadri, and INS Satpura**. These are the first stealth warships built in India (by Mazagon Dock Limited).

INS Sindhukirti

- Acquired in 1990, INS Sindhukirti is among the oldest operational submarines in the Navy. It is a diesel-electric class submarine that can launch torpedoes, missiles, and even mines.

INS Viraat to be Scrapped

The Union Ministry of Defence has decided to scrap **INS Viraat** after consultation with Indian Navy.

- There had been demands from various quarters to not let Viraat go the INS Vikrant way, India's first carrier that was eventually scrapped.
- INS Vikrant, a Centaur class, was maintained by the Navy in Mumbai for 17 years as various proposals to convert it into a museum went back and forth unsuccessfully before the ship was eventually sent to a scrapyard in 2014.

Reasons for Scrapping INS Viraat

- **Expenditure:** The Navy has been incurring expenditure on its upkeep such as the provision of electricity and water, and repairs till date.
- **Space:** The Navy has stated that it cannot keep Viraat indefinitely as it would block space in the already crowded Mumbai dockyard.
- **No Viable Alternative:** Efforts to keep it intact by converting it into a museum or other means have not been successful. INS Viraat could not be handed over to any State Government because of non-receipt of a self-sustaining financially complete proposal.

Note:

INS Viraat

- Viraat, a Centaur class aircraft carrier weighing 27,800 tonnes, had served in the **British Navy as HMS Hermes** for 25 years from 1959 to 1984.
 - The Centaur class was the light fleet carrier designs built for the **Royal Navy (British Navy)** in the closing years of the Second World War.
 - After refurbishment, it was commissioned into the Indian Navy in May 1987.
 - It was decommissioned from the Navy in March 2017 at Naval Dockyard, Mumbai.
 - It holds the **Guinness Books of record** for being the longest-serving warship in the world.
 - Viraat has played a major role in **Operation Jupiter in 1989** in the Sri Lankan peacekeeping operation.
 - It has been instrumental in sharpening the art of flying operations from a carrier deck in the Navy, which resulted in the seamless induction of **INS Vikramaditya**.
- Andhra Pradesh submitted a proposal in 2016 for the conversion of Viraat as an aircraft museum, including tourist and hospitality components on a commercial basis through a joint venture with the Union government. But the Defence Ministry rejected the proposal.
 - In 2018, the Maharashtra Cabinet approved a proposal to convert the carrier into a museum and hospitality centre on a **public-private partnership (PPP)** basis, but there were no takers.

LCU L-56 Commissioned into Indian Navy

Indian Navy has recently commissioned the ship LCU L-56, which is the 100th warship built by the **Garden Reach Shipbuilders and Engineers (GRSE)**.

- **LCU 56** is an amphibious ship with its primary role being transportation and deployment of main battle tanks, armoured vehicles, troops and equipment from ship to shore.
- It is the sixth of eight indigenously built Landing Craft Utility (LCU) MK IV class ships.
- The LCU Mk-IV Class of ships are fitted with close to 90% **indigenous content**, in line with the Government of India's 'Make in India' initiative towards achieving self-reliance and indigenisation.

- The induction of LCU 56 will add to maritime and **Humanitarian Assistance and Disaster Relief (HADR)** capability of **Andaman Nicobar Command**.
- The ship will be deployed for multi-role activities such as beaching operations, search and rescue missions, disaster relief operations, coastal patrol, and surveillance operations along the Andaman and Nicobar Group of Islands.

National Defense Authorisation Act

The U.S. Senate has passed the **National Defense Authorisation Act (NDAA)** for the fiscal year 2020 that brings **India at par with America's NATO allies** and countries like **Israel and South Korea** for increasing defence cooperation.

- The amendment provides for increased U.S.-India defence cooperation in the Indian Ocean in the areas of humanitarian assistance, counterterrorism, counter-piracy and maritime security.
- The bill would be signed into law after both the chambers of the U.S. Congress, i.e. the House of Representatives and the Senate passes it.
- The "upgrade" will also smoothen the passage of sales to India of high-end US military hardware to India.
- The US has already given India **Strategic Trade Authorization-1(STA Tier-1) status**, a move that facilitates the exchange of high technology and strengthens defence collaboration, and also designated India as a "**Major Defence Partner**" in 2016.
- While the major **non-Nato** ally status or its equivalent, does not automatically enjoins a **mutual defence pact** with the United States (as it does with Nato allies), it still confers a variety of military and financial advantages that otherwise are not obtainable by non-NATO countries.

Third Generation NAG Missile

India has successfully carried out trials of NAG Missile.

- The **Nag missile** has been indigenously developed under the Indian Ministry of Defence's **Integrated Guided Missile Development Programme (IGMDP)**, which also involved the development of four other missiles that are **Agni, Akash, Trishul** and **Prithvi**.

Note:

About Nag Missile

- Nag is a third-generation, **fire-and-forget, anti-tank guided missile** developed by India's state-owned **Defence Research and Development Organisation (DRDO)** to support both mechanised infantry and airborne forces of the Indian Army.
- It is an all-weather condition with day and night capabilities and with a minimum range of 500m and a maximum range of 4 km.
- Nag can be launched from land and air-based platforms. The land version is currently available for integration on the **Nag missile carrier (NAMICA)**.
- The helicopter-launched configuration, designated as **helicopter-launched NAG (HELINA)**, can be fired from **Dhruv advanced light helicopter (ALH)** and **HAL Rudra (ALH WSI) attack helicopter**.

Bhabha Kavach

India's **lightest and cheapest** bulletproof jacket 'Bhabha Kavach' was displayed at the **International Police Expo 2019** held at Pragati Maidan in New Delhi.

- The expo was organised by **Nexgen Exhibitions** (Asia's leading and established trade fair, exhibition and conference organizer).
- The bulletproof jacket weighs just 6.6 kg (in comparison to traditional jackets which weigh around 17 kg).

Production and Development

- Bhabha Kavach was **developed indigenously** by Defence organizations like Ordnance Factory Board and Mishra Dhatu Nigam Limited (MIDHANI) with the transfer of **carbon-nanomaterial technology** from **Bhabha Atomic Research Centre (BARC)**.
 - **MIDHANI**, is a (public sector undertaking) specialized metals and metal alloys manufacturing facility in India, located in Hyderabad, Telangana.
 - **Ordnance Factory Board** is an industrial organisation, functioning under the Department of Defence Production, **Ministry of Defence** (headquartered in Kolkata).

Manufacturing

- **Bhabha Kavach** is built from layers of high-density, high-tenacity polyethylene, which are fused together at high temperatures to form a thick, hard armour

plate, which is then sprayed with BARC's carbon nanomaterial.

- The material used in the jacket are hard boron carbide ceramics, carbon nanotubes and composite polymer (polymer made up of two or other types of polymer).

Bhabha Atomic Research Centre

- BARC is India's premier **nuclear research** facility based in Mumbai, Maharashtra.
- It is a multi-disciplinary research center with extensive infrastructure for advanced research and development.
- Its core mandate is to sustain peaceful applications of nuclear energy, primarily for power generation.

Need

- In the backdrop of several terrorist attacks (like Uri, Pulwama), Indian security forces are in the dire need to develop an advanced, **efficient and cost-effective security system** which can potentially deal with the fast-changing threats of the 21st century.
- **Central Armed Police Forces** like Central Reserve Police Force, **Border Security Force**, Indo-Tibet Border Police, and Sashastra Seema Bal, which secure our border areas are more exposed to security threats and hence, Bhabha Kavach has been designed to protect Indian defence forces against:
 - **AK-47 rifle**: 7.62 mm hard steel core or bullets fired from an AK-47 rifle.
 - **INSAS bullet**: 5.56 mm Indian Small Arms System (INSAS) bullet.
 - **SLR**: 7.65 mm bullet of self-loading rifle (SLR).

Social Engineering Attacks

Recently, the **Ministry of Home Affairs (MHA)** has issued warning to government officials against '**social engineering**' attacks.

- To prevent the leak of sensitive information, the MHA has asked officials to avoid unsolicited phone calls, visits or email messages from unknown persons claiming to represent some organisation.

What is Social Engineering Attack?

- **Social engineering attack** involves manipulating people into breaking normal security procedures

Note:



and best practices in order to gain access to systems, networks or physical locations, or for financial gain. It relies heavily on **human interaction**.

- Social engineering attack **manipulates government** officials to obtain sensitive information without letting them realise that a security breach is occurring.
- The MHA held that hackers often ask for information **through Phishing by sending** an email or text message.
- **Phishing:** The email or text message carrying a link appears to come from a trusted source like a bank.
 - The link takes you to a fake website and once details like login name and passwords are entered, the login credentials reach to the hacker.
- **Quid pro quo attack:** In this case, a hacker comes posing as a technician and uploads malware with the intention to steal information from the system.

Security Pedia

The **Central Industrial Security Force (CISF)** has launched an **online encyclopedia** called **Securitypedia**.

- Securitypedia is a **website** which incorporates a wide range of security-related issues, best practices and latest technologies (in the domain of security) available across the world.
- It is not just a static website containing data archives but is more of a dynamic platform where a force member can contribute by writing blogs on relevant security-related professional issues.
 - Just like Wikipedia, any member could post information or edit articles after citing authentic and verifiable sources.

- As a supplement to Securitypedia, **CISF has also developed CISF Tube** which is an online video database of all videos relevant to CISF.
- The videos available on CISF Tube enables CISF personnel to learn on various subjects related to their area of functioning.

Maharashtra to Adopt AMBIS

Maharashtra became the first state to adopt an **Automated Multi-modal Biometric Identification System (AMBIS)** to aid police investigations.

- The **Automated Multi-modal Biometric Identification System (or AMBIS)** adopted by the Maharashtra police will soon be replicated by other state police forces in the country.
- An AMBIS unit comprises a computer terminal, a camera, and iris, fingerprint, and palm scanners.
- It also includes a **portable system** to dust off and capture fingerprints from crime scenes.
- AMBIS (with **facial recognition** from CCTV cameras), enables the police to cross-refer criminals whose fingerprints have been captured on paper over the decades, apart from solving fresh crimes.
- AMBIS with **facial recognition technology** feature is an updated version of the **Automated Fingerprint Identification System (AFIS)**, which has been used by Indian law enforcement agencies to search finger and palm prints.
 - AFIS has limited utility, providing only **one-to-one fingerprint** matches as compared multimodal matches possible with AMBIS.



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Miscellaneous

Highlights

- *European Heatwave*
- *Longest Electrified Railway Tunnel*
- *Garuda VI*
- *Automated Facial Recognition System*
- *Plan Bee*
- *World Population Day*
- *Operation Thirst*
- *Anshula Kant*
- *World Youth Skills Day*
- *Subansiri Dam*
- *Jal Marg Vikas Project*
- *JATAN: Virtual Museum Software*
- *Eruption on Mount Etna*
- *International Charter on Space and Major Disasters*

European Heatwave

France has recorded the hottest temperature of 45.9°C amid European heatwaves.

- The **heatwave** in Europe has caused flash floods and forest fires.

European heatwave

- According to the **World Meteorological Organization (WMO)**, heatwaves in Europe are the result of warm air masses from Africa and extreme heat condition in India, Pakistan, parts of the Middle East and Australia.
- According to weather experts, heatwaves are being amplified by a rise in **global temperature**.
- A scientific study on Europe-wide heatwave by the **World Weather Attribution group** concluded that high temperatures in the region were made more likely by human activities that contributed to **climate change**.
- If the current trend were to continue, heatwaves across Europe could occur as often as every other year by the 2040's, with the possibility that temperatures may rise by 3-5 degrees Celsius by 2100.

Longest Electrified Railway Tunnel

The **South Central Railway (SCR)** had commissioned the longest electrified tunnel of 6.6 km between **Cherlopalli and Rapuru stations** in the state of Andhra Pradesh.

- The tunnel is part of the recently completed Obulavaripalli-Venkatachalam new railway line.
- The new line also facilitates direct and viable connectivity between the South Coast and West Coast.
- It also opens up the viable rail connectivity between Krishnapatnam port and its hinterland for freight train services.

Garuda VI

Indian Air Force (IAF) has participated in the 6th edition of bilateral exercise **Garuda** hosted by **France**.

- It is aimed at enhancing the **interoperability level of French and Indian crews** in air defence and ground attack missions.
- The **Garuda exercise** is alternately held in France and India, under the framework of bilateral cooperation between the two nations.
- Participation of IAF in the exercise will promote professional interaction, exchange experiences and operational knowledge besides strengthening bilateral relations with the French Air Force.

Automated Facial Recognition System

The **National Crime Records Bureau (NCRB)** has released a request for proposal of an **Automated Facial Recognition System (AFRS)** to be used by police officers across the country.

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- Automated Facial Recognition System can play a very vital role in crime prevention, criminal identification and verification (identifying criminals, missing people, and unidentified dead bodies) by facilitating easy recording, analysis, retrieval and sharing of information between different organizations.

Automated Facial Recognition System (AFRS)

- AFRS will be a mobile and web application hosted in NCRB (which manages data for police) data centre in Delhi but used by all police stations in the country.
- AFRS works by comparing the new image of an unidentified person often taken from CCTV footage with the existing database (AFRS maintains a database with photos and videos of people faces) to find a match and identify the person.
 - The **artificial intelligence technology** used for pattern-finding and matching is called “neural networks”.

Integrating AFRS with Existing Database

- NCRB has proposed integrating automated facial recognition system with multiple existing databases like:
 - Crime and Criminal Tracking Network & Systems (CCTNS)
 - Integrated Criminal Justice System (ICJS)
 - State-specific database systems
 - Khoya paya portal

Criminal Tracking Network & Systems

- CCTNS is a countrywide integrated database on crime incidents and suspects, connecting FIR registrations, investigations, and charge sheets of all police stations and higher offices.
- CCTNS also plans to offer citizen services, such as passport verification, crime reporting, online tracking of case progress, grievance reporting against police officers.

Integrated Criminal Justice System (ICJS): It is any computer network, system or architecture that allows justice practitioners and agencies to electronically access and share information between systems and/or across jurisdictional lines.

Khoya Paya Portal: Khoya Paya portal is a citizen-based website to exchange information on missing and found children developed by the **Ministry of Women and Child Development** and the **Department of Electronics and Information Technology (DeitY)**.

Concerns

- Cyber experts have cautioned against government abuse of facial recognition technology, as it can be used as a tool of control and risks citizens privacy and data.
- In the absence of data protection law, Indian citizens are more vulnerable to privacy abuses.

Plan Bee

Plan Bee, a unique strategy adopted by **Northeast Frontier Railway (NFR)** to keep **wild elephants** away from railway tracks, has won the best innovation award by Indian Railways.

- **Northeast Frontier Railway (NFR)**'s Plan Bee, involves setting up of devices (an amplifying system imitating the buzz of a swarm of honey bees) near tracks, which emit the ‘**buzzing**’ sound of swarming bees, considered as a natural repellent of elephants (elephants have a natural fear of the perilous stings of insects).
 - First one was installed near the Guwahati railway station.
- The sound is audible to elephants 600-700 meters away and thus helps them in keeping away from the tracks.
- According to **wildlife experts**, India has the **highest number of train accidents** involving elephants in the world.

World Population Day

11 July is celebrated as **World Population Day**.

- In 1989, the **Governing Council** of the **United Nations Development Programme** recommended that 11 July be observed by the international community as World Population Day, a day to focus attention on the urgency and importance of population issues.
- The **United Nations Population Fund (UNFPA)** seeks to create awareness about the **issues associated with population**.

Present Population Trends

- Current estimates indicate that roughly 83 million people are being added to the world’s population every year.
- Even assuming that fertility levels will continue to decline, the global population is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100.

Note:



United Nations Population Fund

- The **United Nations Population Fund (UNFPA)**, formerly the **United Nations Fund for Population Activities**, is a UN organization. It was created in **1969**.
 - UNFPA works to support family planning by ensuring a steady, reliable supply of quality contraceptives; strengthening national health systems; advocating for policies supportive of family planning; and gathering data to support this work.
 - UNFPA also provides global leadership in increasing access to family planning, by convening partners – including governments – to develop evidence and policies, and by offering programmatic, technical and financial assistance to developing countries.
- According to the 'World Population Prospects 2019' published by the **Population Division** of the **UN Department of Economic and Social Affairs**, India is projected to surpass China as the world's most populous country by 2027.
- But according to the Economic Survey 2018-19, India's population growth rate will **decline faster** than assumed as the fertility rate in many states has reached the replacement rate.

Operation Thirst

Indian Railways have launched "**Operation Thirst**", as an all India drive to curb the menace of selling unauthorized packaged drinking water in railway premises.

- With the increase in the number of passengers travelling by railways (due to the closure of schools & festive/marriage season) during peak summer, the demand for drinking water also increases.
- The operation thirst drive was carried out in all major railway stations of the country on 8 and 9th July 2019.
- During the drive, 1371 persons were arrested by the railway protection force for selling of packaged drinking water of unauthorized brands.
- Stalls on platforms were also found selling packaged drinking water bottles of brands which are not authorized by the Indian Railway.

Anshula Kant

India's Anshula Kant has been appointed as the **Managing Director (MD)** and **Chief Financial Officer (CFO)** of the **World Bank**.

- Anshula Kant will be the **first woman** Chief Financial Officer of the World Bank.
- As Managing Director and Chief Financial Officer, she will be responsible for:
 - Financial and risk management of the World Bank Group.
 - Oversight of financial reporting.
 - Working closely with the World Bank Chief Executive Officer on the mobilization of financial resources.

World Youth Skills Day

On the **World Youth Skills Day (15th July)**, the **Ministry of Skill Development and Entrepreneurship (MSDE)** celebrated the fourth anniversary of the **Skill India Mission**.

- During the celebration, team for **World Skills International Competition**, to be held from 22th-28th August 2019 in Kazan, Russia, was announced.
- A Degree Apprenticeship Program that will have apprenticeship/on-the-job training embedded in a 3 or 4-year University degree program, was launched. This program is designed by the **MSDE** and the **Ministry of Human Resource and Development (MHRD)**.
- Announcement regarding the establishment of a new **Japan India Institute for Manufacturing (JIIM)** in Haryana and new courses in (Industrial Training Institutes) ITIs around training on Electric Vehicles (EVs), in line with the government's intention to work for greener energy sources, was also made.

Skill India Mission

- Launched in the year 2015, it is an initiative of the Government of India to empower the youth of the country with skill sets which make them more employable and more productive in their work environment.

World Youth Skills Day

- The **United Nations**, at its **General Assembly** in November 2014, declared 15 July as **World Youth Skills Day (WYSD)**.
- The aim of WYSD is to advocate for skills as an important factor to improve young people's transitions to decent work and to highlight the crucial role of skilled youth in addressing today's most challenging global issues.
- The theme for the year 2019 is "**Learning to learn for life and work**".

Note:



Subansiri Dam

- **Subansiri Lower Hydroelectric Project (SLHEP)**, is an under-construction gravity dam on the Subansiri river along the **border of Assam and Arunachal Pradesh**.
 - Subansiri River (**gold river**), originates in the Tibet Plateau and enters India through Miri hills in Arunachal Pradesh.
 - It is the **largest tributary of Brahmaputra River**.
- Subansiri Lower Hydroelectric Project had been kept pending due to local agitation over several **dam safety** and administrative issues involved in the implementation of the project like:
 - SLHEP contravenes the 1980 **Brahmaputra Board Act** by transferring the work of Water Resources Department of **Subansiri Basin** from the Brahmaputra Board to the public and private sector.
 - The **seismic threat level** to the dam, assessed by Indian Institute of Technology at Roorkee.

Gravity Dam

- Gravity dam is constructed from concrete or cement (unlike mud and masonry stones used in embankment).
- It is designed to hold back water by primarily utilising the weight of the material alone to resist the horizontal pressure of water pushing against it.

Other Controversial Dams

- **Sardar Sarovar Dam:** The Sardar Sarovar Dam is a gravity dam (2nd largest concrete gravity dam by volume in the world) on the Narmada river near Navagam, Gujarat.
 - Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan, receive water and electricity supplied from the dam.
 - The dam is alleged to displace around 2.5 lakh villagers.
- **Mullaperiyar Dam:** It is a gravity dam on the Periyar River in Idukki district of Kerala but it is owned and operated by the Tamil Nadu government.
 - There is an ongoing contention between Kerala and Tami Nadu governments over the height of the dam.
- **Polavaram project:** It is an under-construction multi-purpose National project on the Godavari River in the West Godavari District and East Godavari District in Andhra Pradesh.

- The project will submerge villages in Chhattisgarh and Odisha.
- **Kishanganga Hydroelectric Plant** is a run-of-the-river hydroelectric scheme that is designed to divert water from the Kishanganga River to a power plant in the Jhelum River basin and is located in Jammu and Kashmir.
 - **The World Bank's** court of arbitration failed to resolve the dispute between India and Pakistan over the Indus water treaty issue.

Jal Marg Vikas Project

The **Jal Marg Vikas Project (JMVP)** for capacity augmentation of navigation on **National Waterway-1 (NW-1)** is being implemented by the support of the **World Bank**.

- One of the major problems for commercially viable and safe navigation on NW-1 is low depth upstream of **Farakka barrage** due to low discharges from tributaries and difficult **hydro morphological** characteristics of the river Ganga.
- The project will contribute to bringing down the logistics cost in the country and will provide an alternative mode of transport which will be **environment-friendly and cost-effective**.
- It is being implemented by the **Inland Waterways Authority of India** (Ministry of Shipping).
- The project envisages fairway development through a performance-based contract for the least assured depth of 2.2 metres to 3 metres and bottom channel width of 45 metres, bank protection works, and provisions of navigation aids.
- The states that are being covered under the Project are Uttar Pradesh, Bihar, Jharkhand, West Bengal.
- The Project is expected to be completed by March, 2023.

JATAN: Virtual Museum Software

- Archaeological site museums under **Archaeological Survey of India (ASI)** have been digitised through JATAN software.
- **JATAN** is a **virtual museum builder software**, that enables the creation of a digital collection management

Note:



system for Indian museums and is deployed in several national museums across India.

- It's objective is to make a digital imprint of all the objects preserved in museums and help researchers, curators and other people interested in the field.
- Designed and developed by Human Centres Design and Computing Group, **Centre for Development of Smart Computing (C-DAC)** Pune.
- The digital imprints (of preserved objects and monuments) created using the **JATAN software** are integrated into the national digital repository and portal for making them accessible to the public.
 - The **National portal and digital repository** (developed by C-DAC, Pune) for museums of India provide integrated access to **theme-based collections and artefacts** (in terms of sculptures, paintings, manuscripts, weapons, coins and numerous other categories of artefacts) irrespective of the physical and geographical locations of museums.
- **Centre for Development of Smart Computing (C-DAC)** Pune has also developed "**Darshak**", a mobile-based application aimed at improving the museum visit experience among the differently-abled.
 - It allows real-time museum visitors to gather all details about objects or artefacts simply by **scanning a QR code** placed near the object.

Centre for Development of Advanced Computing

- C-DAC is the premier Research & Development organization of the Ministry of Electronics and Information Technology (MeitY) for carrying out R&D in IT, Electronics and associated areas.
- India's first supercomputer PARAM 8000 was indigenously built (in 1991) by the Centre for Development of Advanced Computing.

Eruption on Mount Etna

Recently, **Mount Etna** in **Sicily (Italy)** has erupted. It spewed a plume of ash and lava as two fractures opened at the base of its crater (a bowl-shaped depression, or hollowed-out area, produced by the impact of volcanic activity).

- Eruptions of Etna follow a variety of patterns. Most occur at the summit, where there are currently (as of 2019) five distinct craters.

- Other eruptions occur on the flanks, which have more than 300 vents, ranging in size from small holes in the ground to large craters hundreds of metres across.

Mount Etna

- Mount Etna is the highest Mediterranean island mountain and the most active **stratovolcano** in the world. It is about 3,326 metres high and is the highest peak in Italy south of the Alps.
- The **eruptive history** of the volcano can be traced back 500,000 years and at least 2,700 years of this activity has been documented.
- The almost continuous eruptive activity of Mount Etna continues to influence **volcanology, geophysics and other Earth science disciplines**.
- The volcano also supports important terrestrial ecosystems including endemic flora and fauna and its activity makes it a natural laboratory for the study of ecological and biological processes.

Volcano

- A volcano is an opening on the surface of a planet or moon that allows material warmer than its surroundings to escape from its interior.
- When this material escapes, it causes an eruption. An eruption can be explosive, sending material high into the sky. Or it can be calmer, with gentle flows of material.
- On Earth, the erupted material can be liquid rock ("lava" when it's on the surface, "magma" when it's underground), ash, cinders, and/or gas. There are **three reasons why magma might rise and cause eruptions onto Earth's surface**.
- Magma can rise when pieces of Earth's crust called **tectonic plates slowly move away from each other**. The magma rises up to fill in space. When this happens underwater volcanoes can form.
- Magma also rises when these **tectonic plates move toward each other**. When this happens, part of Earth's crust can be forced deep into its interior. The high heat and pressure cause the crust to melt and rise as magma.
- A final way that magma rises is over **hot spots**. Hot spots are the hot areas inside of Earth. These areas heat up magma. The magma becomes less dense. When it is less dense it rises. Each of the reasons for rising magma is a bit different, but each can form volcanoes.

Note:

International Charter on Space and Major Disasters

India, by virtue of being a member of the **International Charter 'Space and Major Disasters'** has received satellite data related to the Assam floods from other member nations including France, Russia and China.

- Whenever there is a natural or man-made disaster, the **National Remote Sensing Center (NRSC)** and **member space agencies** of other countries which are a part of the International Charter Space and Major Disasters can activate the platform.
- **National Remote Sensing Center** represents **Indian Space Research Organisation (ISRO)** as a member of the charter which has been set up under the **UN-SPIDER (United Nations Platform for Space-based Information for Disaster Management and Emergency Response)**.

International Charter 'Space and Major Disasters'

- World's first coordinated multi-satellite operational setup for emergency response Introduced at Space Assembly (**UNISPACE III**) in 1999 and is Operational since Nov 1, 2000.

Purpose

- It is an **International Agreement among Space Agencies** to support with space-based data and information for relief efforts in emergencies caused by major disasters, on the humanitarian ground at no cost.

Need

- No single space agency can provide imaging capability to meet the spatial and temporal requirements of different types of disasters.
 - Different space sensors (Thermal, Microwave, Optical) are required for different disasters (Fire, Floods, EQ).
- Hence the need for a global system for disaster management, supported by multi-satellite and multi-imaging capabilities.

Members

- Currently, 16 global space agencies including India's ISRO are its members.
- The members cooperate on a **voluntary basis**.
- **UN-SPIDER** and **UNITAR** (United Nations Institute for Training and Research is a dedicated training arm of the United Nations system) are not formal members of the mechanism but are authorized to request the activation of the mechanism on behalf of UN agencies, in countries affected by disasters.

Disasters Types Supported

- **Charter addresses both:**
 - Natural disasters like floods, earthquakes, forest fires, landslides, tsunamis, ocean storms, volcanic eruptions.
 - Man-made disasters like oil spills and industrial accidents.

Mechanism

- **Direct activation:** Authorized Users (civil protection agencies, governmental relief organizations, or other authorities with a mandate related to disaster management) are able to request the activation of the Charter to support emergencies in their own country.
- **Activation via an Authorized User on behalf of a user from another country without AU:** Authorized Users can access the charter to request support for a disaster in another country with which they cooperate for relief purposes.
- **Activation via the United Nations (UN) for UN users:** The Charter has an agreement with UN OOSA (Vienna) and UNITAR/UNOSAT (Geneva) to provide support to UN agencies, may submit requests on behalf of users from the United Nations.
- **Activation for Asia Pacific users via Sentinel Asia:** Sentinel Asia is a regional collaboration for satellite-based emergency response in the Asia Pacific.



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Key Points

Details

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Summary

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