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ASTRA

COMPLETE COVERAGE OF MONTHLY CURRENT AFFAIRS

November 2020



HISTORY AND CULTURE

All India Trade union congress	4
The Miyas of Assam, and their Char-Chapori Culture	4
Sri Guru Tegh Bahadur Ji	5
Warli Painting	6
Tribute to Birsa Munda	6

GEOGRAPHY & ENVIRONMENT

Tx2 Tiger Conservation Awards (TTCA)	8
Vulture Action Plan 2020-25	9
World Wide Fund (WWF) Water Risk Filter	10
Luhri Stage-1 Hydro Power Project	11
Four More Biodiversity Heritage Sites(BHS) for Karnataka	11
India Climate Change Knowledge Portal	12
La Niña Weather Phenomenon	12
Beaching of Whales	15
Commission for Air Quality Management (CAQM)	14
Blue Tide	14
Pink Bloom	15
Refuse Derived Fuel	15
Vine Snakes	16
Willow Warbler	16
Rohanixalus-New genus of the Old World tree frog	17
Harnessing the Power Of India's Forests for Climate Change Mitigation	17
First Snow Leopard Census	20
October Cyclones	21
World Bank's Climate Change Knowledge Portal	22
Deemed Forests in India	22
Tristan da Cunha island	23
Renewables 2020 - Analysis and forecast to 2025	24
The Cost of Clearing the Air	25
India's Deep Ocean Mission	26

POLITY & GOVERNANCE

Supreme Court discourages the use of Article 32	28
ED opens inquiry into KIIFB working	29
National Agricultural Education Policy	30
Pardoning Powers of the Governor	31
Regulation for Over-The-Top(OTT) Platform	32
Draft Data Centre Policy 2020	33
Amendment in FCRA Rules	34
Kerala, Tamil Nadu and Goa best-governed states in India: PAI Index	35
Draft Rules under Code on Social Security	35
Kerala Police Act Amendment put on hold	37
National Portal for Transgender Persons	38
ATAL Academy Faculty Development Programme(FDP)	39
Beneficiaries of Roshni Act move SC	39
Minor Forest Produce (MFP)	40

Recusal of Judge	41
NyayaBandhu App	41
Haryana clears Bill on Right to Recall Panchayat Member	42
Pakistan Grants Provisional Provincial Status to Gilgit-Baltistan(GB)	42
Academic Freedom Index	43
On People's Alliance for Gupkar Declaration	44
Validity of Special Courts to Try MPs, MLAs	44
An Analysis of Victim Compensation Schemes in India	45
Guidelines on Television Rating Agencies in India	47
Virtual Court and e-Challan Project	47

WELFARE AND SCHEMES

United Nations (UN) launched the Sanitation and Hygiene Fund (SHF)	48
Height and BMI Trends of 2019	48
Report on the National Nutrition Mission : NITI Aayog	49
Pneumonia and Diarrhea Progress Report 2020: IVAC	50
Global Prevention Coalition(GPC) for HIV Prevention	52
Guillain Barre Syndrome	52
WHO commits to Eliminate Cervical Cancer Globally	53
Centrally Sponsored Pilot Scheme on Fortification of Rice e-Sanjeevani	54
Grand Challenge for development of "Smart Water Supply Measurement and Monitoring System"	55
Mission COVID Suraksha	56

ECONOMY

National Investment and Infrastructure Fund & its Infrastructure debt financing platform	59
Nutraceutical Industry	60
Changes in Bank Licensing Framework	60
Banking License to Large Corporate Houses	61
Human Resource Management System (HRMS) of Indian railways	63
Inflation Targeting	63
Liquidity Trap	65
MSP and Protesting farmers	66
Draft Merchant shipping bill 2020	67
Production Linked Incentive (PLI) Scheme	68
SOLAR Power in India	70
NSS Report: Time Use in India-2019	73
Motor Vehicle Aggregator Guidelines 2020	74
Hybrid Renewable Energy	74
Model Tenancy Act, 2019	75
Emergency Credit Line Guarantee Scheme	77
State of Food and Agriculture 2020	77
Fisheries and Aquaculture Infrastructure Development Fund (FIDF)	78
Regional Cluster Concept	78
Viability Gap Funding VGF Scheme for	79

Public Private Partnerships	
DISCOMs	80
Micro Food Processing Enterprises (PM-FME) Scheme	81
Bloomberg New Economy Forum	81
Moratorium on Lakshmi Vilas Bank	82
Unified Single Window Clearance System for FDI	83
RE-Invest 2020	83
SDG Investor Map for India	84
A Secure Future for Platform Workers	85
Virtual Global Investor Roundtable (VGIR)	86
Single Window Approval for FDI	86
Floating Rate Bonds	87
Department of Investment & Public Asset Management (DIPAM)	87
Measures on Atmanirbhar Bharat 3.0	88
Insider Trading	90
World Economic Forum to Pioneer Roadmap for Smart Cities	90
15th Finance Commission Report	90
The Saffron Bowl of India Reaches Out towards the North East	91
Cotton and Sugar Exports from India	91
PM Inaugurates Ro-Pax Terminal at Hazira	92

INTERNATIONAL RELATIONS

Nurturing Neighborhoods Challenge	93
Executive Board of WHO	93
15th East-Asia Summit	93
17TH ASEAN-India Summit	94
BRICS	96
Joint Comprehensive Plan of Action	99
United Nations Population Award	100
G20 Virtual Summit	101
India-Japan 5G Pact	103
Shanghai Cooperation Organization (SCO)	104
Organization of Petroleum Exporting Countries(OPEC)	106
India and Nuclear Disarmament	108
India's Development Efforts in Afghanistan	109
Ethiopia Civil War	110
Peace Deal between Armenia & Azerbaijan	111
Mission Sagar – II	112
1st BRICS Finance Ministers and Central Bank Governors Meeting	113
Indo-Thai Coordinated Patrol (CORPAT)	113
UAE High Level Joint Task Force on Investments	114
New Chinese Village in Bhutan	114
India, Maldives sign four MoUs to boost ties	115
Chabahar Project	116
China's Railway Near Arunachal Pradesh border	117
India and Finland signed a MOU	117
Food Coalition: FAO	118

SCIENCE & TECHNOLOGY

Earth Observation Satellite (EOS-01)	119
Discovery of Pulsars	119
Fast Radio Bursts (FRBS) Detected in the Milky Way	120
One Health Global Leaders Group on Antimicrobial Resistance (AMR)	121
Indian Council of Medical Research(ICMR)	124
Chapare virus	124
Hepatitis-C drugs shown to Inhibit Coronavirus Enzyme	125
First ever Vaccine listed under WHO Emergency Use Listing (EUL)	126
Kala-Azar or Visceral Leishmaniasis (VL)	126
Global Center for Traditional Medicine	127
India Mobile Congress (IMC) 2020	127
Thirty Meter Telescope Project	128
Physics Nobel Prize 2020	128
Smart Screens from discarded Groundnut Shells	128
Geo-Polymer Aggregate	129
Geoinformatics	129
AIM-Sirius Innovation Programme 3.0	130
Immunoglobulins	130
India's AI supercomputer Param Siddhi	131
M Dwarf Stars	132
Asteroid 16 Psyche	133
Sentinel-6 Satellite: Jason-CS Mission	133
Ariel Space Mission	134
Hyperloop Technology	134
Satellites to detect Drug Cultivation	136

DEFENCE & SECURITY

QRSAM Missile System	139
PINAKA Rocket System	139
A-Sat Missile Model	140
Scorpene Class Submarine Vagir	140
Tackling Cyber Crimes	141
Fire Detection and Suppression System	142

AWARDS

AICTE Lilavati Award-2020	143
Tx2 Awards	144
Assam wins Best State Award	144
National Water Award	145



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All India Trade union congress

History and Culture

Why in the news?

- All India Trade Union Congress (AITUC), the first Central Trade Union of India founded on October 31, 1920, has completed hundred years of its formation recently.

About AITUC:

- It is the oldest trade union federations in India.
- Until 1945 when unions became organised on party lines, it was the primary trade union organisation in India.
- Since then, it has been associated with the Communist Party of India.
- In the aftermath of the second World War the AITUC played a significant role in the foundation of the World Federation of Trade Unions (WFTU).
- In the last 10 decades since its founding, the AITUC has been at the forefront of all struggles for bringing about changes in favour of the working class.



Formation of AITUC

- Convention in Bombay: It was in this background that the preparations began and a convention was held in Bombay which decided to hold All India Trade Union Congress in Bombay.
- Founding conference (or the first session):**
 - Began on October 31, 1920, in Empire Theatre Bombay with Lala Lajpat Rai as the founding President.
 - Other leaders participated: Political leaders of various shades of opinions such as Moti Lal Nehru, Mohd. Ali Jinnah, Annie Basant, V J Patel, B.P. Wadia, J. Baptista, Lalubhai Samaldas, Jamnadas, Dwarka Das, B W Wadia R R Karandikar, Col. J.C. Wedgwood.

Factors that led to formation of Trade Unions

- Influenced by world labour movements:** Russian Revolution in 1917 was a great impetus for Indian labour movement as the working class along with peasantry captured power for the first time.
 - Industrial unrest:** Strikes in Bombay against extension of working hours and protest against imprisonment of Tilak etc. led to the working class to wage a mass struggle.
 - Oppression and exploitation under British rule:** The self-sufficient Village economy was shattered with no new structures in place, creating impoverished peasantry and landless labour force.
 - National freedom movement:** In the beginning of 20th century, participation of laborers in the freedom movement increased and formation of unions also increased. Mahatma Gandhi linked the freedom movement directly with the labor welfare.

The Miyas of Assam, and their Char-chapori Culture

History and Culture

Why in the news?

- Months ahead of the Assembly elections, a proposed "Miya museum" reflecting the "culture and heritage of the people living in char-chapouris" has stirred up a controversy in Assam.

Who are the Miyas?

- The 'Miya' community comprises descendants of Muslim migrants from East Bengal (now Bangladesh) to Assam.
- They came to be referred to as 'Miyas', often in a derogatory manner.
- The community migrated in several waves — starting with the British annexation of Assam in 1826, and continuing into Partition and the 1971 Bangladesh Liberation War — and have resulted in changes in demographic composition of the region.
- Years of discontent among the indigenous people led to the six-year-long (1979-85) anti-foreigner Assam Agitation to weed out the "illegal immigrant", who was perceived as trying to take over jobs, language and culture of the indigenous population.



What is the Controversy?

- The proposed museum reflecting the culture of 'Char-Chapori' people in the Srimanta Sankaradeva Kalakshetra premises in Guwahati has led to the controversy.
- The Srimanta Sankaradeva Kalakshetra - where the 'Char-Chapori' museum is proposed - is a cultural institution named after the saint scholar, social-religious reformer Srimanta Sankaradeva - a Vaishnavite, adding a religious clash to the controversy.
- Moreover, the complex was set up under Clause 6 of the Assam Accord, signed in 1985, to 'preserve and promote the cultural heritage of the people of Assam', after the bloody anti-foreigners agitation in Assam.

What are char-chapouris?

- 'Char' in Assamese means sandbar while 'chapori' is flood-prone riverbank. These areas are associated with migrant Muslims of Bengali origin who are viewed as 'Bangladeshis'.
- The Char-Chapori area denotes the riverine area of lower and central Assam which mainly comprises of Bengali Muslims.
- They are used interchangeably or with a hyphen. They keep changing shapes — a char can become a chapori, or vice versa, depending on the push and pull of the Brahmaputra.
- Prone to floods and erosion, these areas are marked by low development indices. 80% of the Char population lives below the poverty line.
- A UNDP Assam Human Development report (2014) describes the char areas as suffering from "communication deficits, lack of adequate schooling facilities beyond primary, girl child marriage, poverty and illiteracy".
- While Bengali-origin Muslims primarily occupy these islands, other communities such as Misings, Deoris, Kocharis, Nepalis also live here.
- In popular imagination, however, chars have become synonymous to the Bengali-speaking Muslims of dubious nationality.

Sri Guru Tegh Bahadur Ji

History and Culture

Why in the news ?

- The Prime Minister has paid tributes to Sri Guru Tegh Bahadur Ji on his Martyrdom Day.

About Guru Tegh Bahadur

- Guru Tegh Bahadur was the ninth of ten Gurus of the Sikh religion. He was born at Amritsar in 1621 and was the youngest son of Guru Hargobind.
- His term as Guru ran from 1665 to 1675. One hundred and fifteen of his hymns are in Guru Granth Sahib.
- There are several accounts explaining the motive behind the assassination of Guru Tegh Bahadur on Aurangzeb's orders.
- He stood up for the rights of Kashmiri Pandits who approached him against religious persecution by Aurangzeb.
- He was publicly killed in 1675 on the orders of Mughal emperor Aurangzeb in Delhi for himself refusing Mughal rulers and defying them.
- Gurudwara Sis Ganj Sahib and Gurdwara Rakab Ganj Sahib in Delhi mark the places of execution and cremation of his body.



About Guru Gobind Singh:

- He was the 10th Sikh guru.
- He was born at Patna, Bihar, India, on December 22, 1666. His birthday sometimes falls either in December or January or even both months in the Gregorian calendar. The annual celebration of the Guru's birthday is based on the Nanakshahi calendar.
- He became the Sikh guru at the age of nine, following the demise of father, Guru Tegh Bahadur, the ninth Sikh Guru.
- He is known for his significant contributions to the Sikh religion, including the introduction of the turban to cover hair.
- He also founded the principles of Khalsa or the Five 'K's'.
- He is also responsible to establish the highest order in the Sikh community.

- Followers of the Sikh faith religiously follow the morals and codes of discipline set up by Guru Gobind Singh.
- He fought against the Mughals later in battle of Muktsar in 1705.
- He was assassinated in 1708.
- He named Guru Granth Sahib, the religious text of the Khalsas and the Sikhs, as the next Guru of the two communities

Warli Painting

History and Culture

Why in the news?

- Artists in Hyderabad are using traditional Warli art (Maharashtra) form not just to beautify Hyderabad, but also to create awareness on important issues.

About Warli Painting:

- **Origin:**
 - Warli folk art has its origins in *Maharashtra*.
 - The style of Warli painting was not recognised until the 1970s, even though the tribal style of art is thought to date back as early as 10th century A.D.
- **Practiced by:** It is widely practised in the Northern Sahyadri region by the Warli tribes - one of the largest tribes of India which has rejected contemporary culture.
- **Elements:** Elements of nature are the focal points of Warli folk paintings.
- **Painting technique:** These rudimentary wall paintings use a set of basic geometric shapes: a circle, a triangle, and a square.
 - The circle (sun or moon) and the triangle (mountains or pointed trees) come from their observation of nature.
 - In contrast, the square appears to be a human invention, indicating a sacred enclosure or a piece of land.
 - The central motif in each ritual painting is the square, known as the "chauk" or "chaukat".
- **Material used:**
 - A mixture of rice paste, gum and water is used as paint by the warlis. A bamboo stick is used as the brush.
 - Warli artists use their clay huts as the backdrop for their paintings, similar to how ancient people used cave walls as their canvases.



Popular artists:

Jivya Soma Mashe, has played a great role in making the Warli paintings more popular.

Tribute to Birsa Munda

History and Culture

Why in News?

- The Prime Minister paid tributes to **tribal leader Birsa Munda** on his birth anniversary on 15th November.
- The State of Jharkhand, carved out of Bihar, officially came into being on Munda's birth anniversary in 2000.

Details

- **Birth:** 15th November 1875, belonged to the Munda tribe in the Chotanagpur Plateau area.
- **Brief Profile:**
 - Also known as **Dharti Aaba** (Father of Earth), Birsa Munda is known to have **mobilised the tribal community against the British** and had also forced the colonial officials to introduce laws protecting the land rights of the tribals.
- **Munda Rebellion:**
 - It is one of the most important tribal movements.
 - It was led by Birsa Munda in the south of Ranchi in **1899-1900**.

o The movement **identified following forces as the cause of the misery** the Mundas were suffering:

- The land policies of the British were destroying their traditional land system.
- Hindu landlords and moneylenders were taking over their land.
- Missionaries were criticising their traditional culture.

o The '**Ulgulan**' or the '**Great Tumult**' as the movement came to be called, aimed at establishing Munda Raj by driving out the British.

- Munda used traditional symbols and language to rouse people, urging them to destroy "Ravana" (dikus/outsideers and the Europeans) and establish a kingdom under his leadership.



o Birsa's followers began **targeting the symbols of diku and European power**. They attacked police stations and churches, and raided the property of moneylenders and zamindars. They raised the **white flag as a symbol of Birsa Raj**.

o On 3rd March, 1900, Birsa Munda was arrested by the British police while he was sleeping with his **tribal guerilla army** at Jamkopai forest in Chakradharpur (Jharkhand).

- Birsa died of cholera in the jail and the movement faded out.

• **Significance of Munda Rebellion:**

o It forced the colonial government to introduce laws so that the land of the tribals could not be easily taken over by dikus (**Chotanagpur Tenancy Act, 1908**).

o It showed that the **tribal people had the capacity to protest against injustice** and express their anger against colonial rule.



Why in news?

- Recently, the **Pilibhit Tiger Reserve (PTR)** and the **Uttar Pradesh Forest department** won the **first-ever international award TX2**. The award has been given for **doubling the number of tigers in 4 years** against a target of 10 years.

About TX2 programme:

- It was launched by the World **Wildlife Foundation (WWF)** at the **2010 St Petersburg Tiger Summit**, Russia.
- Under the programme, **13 tiger range countries** had agreed to **double the world tiger population by 2022**.

Aims and Objectives :

- To drive **political momentum** to ensure tigers remain top priority for world leaders, professionalise wildlife protection by training rangers.
- To **develop conservation standards** and **smart technology** to achieve **zero poaching, tackle illegal wildlife trade** of Tiger through partnership with TRAFFIC.
- To **focus efforts** in key **tiger landscapes** and **ensure** there is space for both tigers and people in future.

About Pilibhit Tiger Reserve:

- It is located in **Pilibhit district, Lakhimpur Kheri District** and **Bahraich District of Uttar Pradesh**.
- It was **declared a reserve in September 2008** on the basis of its special type of ecosystem with vast open spaces and sufficient feed for the elegant predators and is India's **45th Tiger Reserve Project**.
- Its **northern edge** lies along the **Indo-Nepal border** while the **southern boundary** is **marked** by the river **Sharada and Khakra**.
- According to a study by **Wildlife Institute of India (WII)** it has **high conservation value** as it represents the **only tiger population** with the **ecological and behavioral adaptations** of the tiger **unique to the Tarai region**.
- It is **home to a habitat** for over **127 animals, 326 bird species** and **2,100 flowering plants**

**Conservation efforts in India:**

- The **National Tiger Conservation Authority (NTCA)** has launched the **M-STrIPES** (Monitoring System for Tigers – Intensive Protection and Ecological Status), a mobile monitoring system for forest guards.
- At the Petersburg Tiger Summit in 2010, leaders of 13 tiger range countries resolved to do more for the tiger and embarked on efforts to double its number in the wild, with a popular slogan 'T X 2'.
- The **Global Tiger Initiative (GTI) program of the World Bank**, using its presence and convening ability, brought global partners together to strengthen the tiger agenda.
- Over the years, the initiative has institutionalised itself as a separate entity in the form of the **Global Tiger Initiative Council (GTIC)**, with its two arms—the **Global Tiger Forum** and the **Global Snow Leopard Ecosystem Protection Program**.
- The Project Tiger, launched way back in 1973, has grown to more than 50 reserves amounting to almost 2.2% of the country's geographical area.

About Project Tiger:

- It is one of the **major projects launched** for the **protection and conservation of tigers in India**.
- It was **started in 1973** with 9 tiger reserves. **Presently**, there are **50 tiger reserves** in India.
- Aim:** To **aid and facilitate the breeding of tigers** within a safe environment and then transport these tigers further afield so that the world's population can be increased.
- It **works under** the administrative control of the **National Tiger Conservation Authority (NTCA)**.

- **NTCA** is a **statutory body** under the **Ministry of Environment, Forests and Climate Change**.
- It is **constituted** under the **Wildlife (Protection) Act, 1972**.
- It **established** the **Tiger Protection Force** with the aim of seizing the poachers and stopping the illegal killings of tigers.

Vulture Action Plan 2020-25

Geography & Environment

Recently, the Union Minister for Environment, Forests and Climate Change has launched a **Vulture Action Plan 2020-25** for the conservation of vultures in the country.

Background

- The ministry has been carrying out a **conservation project for vultures since 2006** and the plan is to now **extend the project to 2025** to not just halt the decline but to actively increase the vulture numbers in India.
- The **crash in vulture populations** came into limelight in the mid-90s, and in 2004 the **cause of the crash** was established as **diclofenac**.
- It is a veterinary **non-steroidal anti-inflammatory drug (NSAID)** used to treat pain and inflammatory diseases such as gout
- There are nine recorded species of vultures in India i.e. **Oriental white-backed, long-billed, slender-billed, Himalayan, red-headed, Egyptian, bearded, cinereous and the Eurasian Griffon**.
- The MoEFCC released the **Action Plan for Vulture Conservation 2006** with the DCGI banning the veterinary use of diclofenac in the same year and the decline of the vulture population being arrested by 2011.



Key Highlights of Vulture Action Plan 2020-25

- The action plan aims to carry forth what has already been set in motion by **ensuring that sale of veterinary NSAIDs is regulated and livestock are treated only by qualified veterinarians**.
- The **four rescue centres** have been proposed for different geographical areas like **Pinjore in the north, Bhopal in ventral India, Guwahati in Northeast and Hyderabad in South India** for treatment of vultures in the country.
- The plan includes **instituting a system with the help of Drugs Controller General of India (DCGI)** which automatically removes a drug from veterinary use, such as Diclofenac, if it is found to be toxic to vultures.
- Under the 2020-25 plan, the ministry will also work for conservation breeding programme of **Red Headed Vulture and Egyptian Vulture**, and help states in establishing at least one **'Vulture Safe Zone'** in each state for the conservation of the remnant population.

Need for Vulture Action Plan in India

- Vultures play a very important role in **quickly disposing carcasses** that could harbour millions of pathogenic bacteria and fungus and cause serious implications for human and animal health.
- The **vulture numbers saw a steep slide** (90 per cent in some species) in India since the 1990s in one of the most drastic declines in bird populations in the world.
- Between the 1990s and 2007, **numbers of three presently critically-endangered species** (the Oriental white-backed, long-billed and slender-billed vultures) crashed massively with **99 per cent of the species having been wiped out**.
- The number of **red-headed vultures**, also **critically-endangered** now, declined by **91%** while the **Egyptian vultures by 80%**.
- The **Egyptian vulture** is listed as **'endangered'** while the **Himalayan, bearded and cinereous vultures** are **'near threatened'**.
- The **Vulture Safe Zone programme** is being implemented at eight different places in the country where there were extant populations of vultures, including two in Uttar Pradesh.
- The Central Zoo Authority (CZA) and Bombay Natural History Society (BNHS) also established the **Vulture Conservation Breeding Programme**, which has been successful and had three critically-endangered species bred in captivity for the first time.

Threats:

- Poisoning.
- Loss of Natural Habitats due to anthropogenic activities.
- Food Dearth and Contaminated Food.
- Electrocution by Power lines.

Conservation Efforts:

- The **Action Plan for Vulture Conservation** was launched in **2006** By MoEFCC. Under this, the veterinary use of **Diclofenac was banned** which resulted in checking the vulture population decline by 2011.
- The **conservation efforts** of India are **primarily** are focussed on the **Critically Endangered** and **Endangered species** of vultures.
- The Vulture Conservation Breeding Programme has been established by the Central Zoo Authority (CZA) and Bombay Natural History Society (BNHS).
- **Presently**, there are **nine Vulture Conservation and Breeding Centres (VCBC)** in India. Three of them are directly administered by the Bombay Natural History Society (BNHS).

Vulture species in India	IUCN Status
Oriental white-backed Vulture	Critically-endangered
Long-billed Vulture	Critically-endangered
Slender-billed Vulture	Critically-endangered
Red-headed Vulture	Critically-endangered
Egyptian Vulture	Endangered
Himalayan Vulture	Near threatened
Bearded Vulture	Near threatened
Cinereous Vulture	Near threatened
Eurasian Griffon Vulture	Least Concern

About National Board for Wildlife (NBWL):

- It has been **constituted** by the Central Government **under Section 5 A** of the **Wildlife Protection Act, 1972**.
- It is **chaired** by the **Prime Minister**.
- It serves as an **apex body** to review all **wildlife-related matters** and **approve projects** in and around national parks and sanctuaries.
- It is **advisory** in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country.
- **Vulture species in India IUCN Status** Oriental white-backed Vulture Critically-endangered Long-billed Vulture Critically-endangered Slender-billed Vulture Critically-endangered Red-headed Vulture Critically-endangered Egyptian Vulture Endangered Himalayan Vulture Near threatened Bearded Vulture Near threatened Cinereous Vulture Near threatened Eurasian Griffon Vulture Least Concern

World Wide Fund (WWF) Water Risk Filter**Geography & Environment****Why in news?**

- Nearly a third of the 100 cities in the world susceptible to 'water risk' — defined as losses from battling droughts to flooding — are in India, according to the WWF Water Risk Filter.

WWF Water Risk Filter

- This is an online tool, co-developed by the World Wide Fund for Nature that helps evaluate the severity of risk places faced by graphically illustrating various factors that can contribute to water risk.
- Jaipur topped the list of Indian cities, followed by Indore and Thane.
- Mumbai, Kolkata and Delhi also featured on the list.
- The global list includes cities such as Beijing, Jakarta, Johannesburg, Istanbul, Hong Kong, Mecca and Rio de Janeiro. China accounts for almost half the cities.

**Key findings**

- **Water Risk:** 100 cities that hold importance in national as well as global economies and are home to 350 million people are set to face the greatest rise in water risks by 2050.
- **Global List:** Egypt's Alexandria tops the list and is followed by Mecca in Saudi Arabia, China's Tangshan, Saudi Arabia's Dammam, and Riyadh. China accounts for almost half the cities.
- **Indian Cities:** India has 30 cities on the list. Jaipur (45th) topped the list of Indian cities followed by Indore (75th) and Thane. Mumbai, Kolkata, and Delhi also featured on the list.

Recommendations:

- **Multi-Stakeholder engagement** and ownership involving local communities could be the key to creating and conserving sustainable water infrastructure and rejuvenating urban freshwater systems.
- **Urban planning and wetland conservation** need to be integrated to ensure zero loss of freshwater systems in urban areas.
- **Improving urban water infrastructure** and cutting water consumption will help reduce water risks

- **Nature-based solutions** including restoring degraded watersheds, reconnecting rivers to their floodplains, and restoring or creating urban wetlands are critical.

Luhri Stage-1 Hydro Power Project

Geography & Environment

Why in news?

Recently, the Cabinet Committee on Economic Affairs has approved the investment of Rs.1810 crore for **Luhri Stage-I Hydro Electric Project**.

About Luhri Stage-I Hydro Electric Project

- It is a 210 MW project located on **Sutlej River**.
- It is situated in **Shimla & Kullu** districts of **Himachal Pradesh**.
- It is being implemented by **Sutlej Jal Vidyut Nigam Limited (SJVN Limited)** on **Build-Own-Operate-Maintain (BOOM)** basis with active support from Government of India and State Government.
- The project will generate **758.20 million units of electricity** annually.

Four more Biodiversity Heritage Sites (BHS) for Karnataka

Geography & Environment

Why in news?

- Recently, the **Karnataka Biodiversity Board** has decided to declare four more areas in the State as **biodiversity heritage sites**.

Key Highlights

- The Karnataka Biodiversity Board has passed a resolution to declare **four new sites** as Biodiversity Heritage Sites are:
 - **Antaragange Betta in Kolar** - It has a unique and perennial water source flowing all through the year
 - **Aadi Narayana Swamy Betta in Chickballapur** - It had many dry-belt species protected by locals.
 - **Mahima Ranga Betta in Nelamangala, Bengaluru** - It is a prominent lung space surviving in Bengaluru.
 - **Urumbi area on the Kumaradhara river basin in Dakshina Kannada** - It has a fragile environmental system and is located on the banks of the river Kumaradhara.

Guidelines for selection and management of the Biodiversity Heritage Sites

- Biodiversity heritage sites are considered **unique and fragile ecosystems** that can be **marine ecosystems, coastal and inland waters, or terrestrial areas**.
- Under Section 37 of **Biological Diversity Act, 2002 (BDA)** the **State Government** in consultation with **local bodies** may notify in the official gazette, areas of biodiversity importance as **Biodiversity Heritage Sites (BHS)**.
- The areas having any of the following characteristics may **qualify for inclusion** as **BHS**:
 - Areas that contain a **mosaic of natural, semi-natural, and manmade habitats**, which together contain a significant diversity of life forms.
 - Areas that contain significant **domesticated biodiversity component** and/or representative agro-ecosystems with ongoing agricultural practices that sustain this diversity.
 - Areas that are significant from a **biodiversity point of view** as also are important cultural spaces such as sacred groves/trees and sites, or other large community conserved areas.
 - Areas including very small ones that offer **refuge or corridors for threatened and endemic fauna and flora**, such as community conserved areas or urban greens and wetlands.
 - All kinds of **legal land uses** whether government, community or private land could be considered under the above categories.
 - As far as possible those sites may be considered which are **not covered under Protected Area network** under the Wildlife Protection Act 1972 as amended.
 - Areas that provide **habitats, aquatic or terrestrial**, for seasonal migrant species for feeding & breeding.
 - Areas that are maintained as preservation plots by the **research wing of Forest department**.

India Climate Change Knowledge Portal

Geography & Environment

Why in news?

Recently, Ministry of Environment, Forest and Climate Change launched the **India Climate Change Knowledge Portal**.



Background

- It is believed that India has **practically achieved its Pre-2020 Climate Action targets** and though historically India is not responsible for emissions, it is leading the world on Climate Action.
- Climate change is a major challenge for developing nations like India, **threatening to enhance risks** already elevated by high levels of social vulnerability and climate variability.

About India Climate Change Knowledge Portal

- The **eight major components** included in the knowledge portal are **India's Climate Profile, National Policy Framework, India's NDC goals, Adaptation Actions, Mitigation Actions, Bilateral and Multilateral Cooperation, International Climate Negotiations** and **Reports & Publications**
- It will be **single point information resource** which provides information on the different climate initiatives taken by various Line Ministries enabling users to access updated status on these initiatives.
- The portal will help in **disseminating knowledge among citizens** about all the major steps Government is taking at both national and international levels to address climate change issues.
- It is a **comprehensive portal** which has captured sector-wise adaptation and mitigation actions being taken by the various line ministries in one place.

LA NIÑA Weather Phenomenon

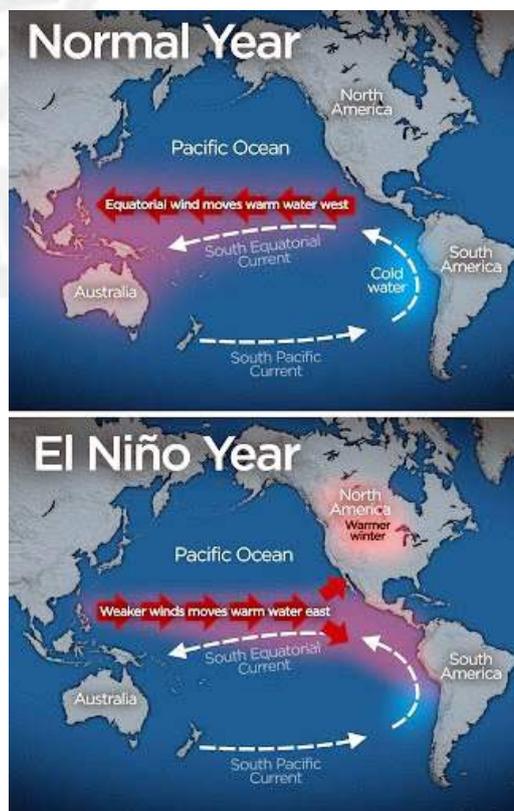
Geography & Environment

Why in news?

- The La Niña weather phenomenon is back in the central and eastern equatorial Pacific Ocean after nearly a decade's absence, the World Meteorological Organization (WMO) said in its latest Global Seasonal update released in October 2020.

What is La Niña?

- La Niña is a coupled ocean-atmosphere phenomenon that is the colder counterpart of El Niño, as part of the broader El Niño–Southern Oscillation (ENSO) climate pattern.
- is a coupled ocean-atmosphere phenomenon that is the colder counterpart of El Niño, as part of the broader El Niño–Southern Oscillation (ENSO) climate pattern.
- During a period of La Niña, the sea surface temperature across the equatorial Eastern Central Pacific Ocean will be lower than normal by 3 to 5 °C (5.4 to 9 °F).
- An appearance of La Niña persists for at least five months.
- It has extensive effects on the weather across the globe, particularly in North America, even affecting the Atlantic and Pacific hurricane seasons, in which more tropical cyclones occur in the Atlantic basin due to low wind shear and warmer sea surface temperatures, while reducing tropical cyclogenesis in the Pacific Ocean.
- La Niña is a complex weather pattern that occurs every few years, as a result of variations in ocean temperatures in the Equatorial Pacific.
- It occurs as strong winds blow warm water at the ocean's surface from South America across the Pacific Ocean towards Indonesia.
- As this warm water moves west, cold water from the deep sea rises to the surface near South America.
- As a result, it is considered to be the cold phase of the broader El Niño–Southern Oscillation weather pattern, as well as the opposite of El Niño weather pattern.
- La Niña impacts the global climate and disrupts normal weather patterns, which as a result can lead to intense storms in some places and droughts in others.



How is the strength of La Niña decided?

- The strength of a La Niña is determined by the degree of the sea surface temperature cool anomaly.
- Sea surface temperatures which are below average by a large margin rank a La Niña as strong.
- Whereas, sea surface temperatures that are slightly below average, which would rank a La Niña as weak.
- The El Niño and La Niña are important because of the impacts to the global moisture and circulation patterns, especially impacting the northern hemisphere in the winter.

What causes La Niña?

- **Lower sea surface temperatures:** La Niña is caused by a build-up of cooler-than-normal waters in the tropical Pacific, the area of the Pacific Ocean between the Tropic of Cancer and the Tropic of Capricorn.
- **Stronger easterly trade winds:** Easterly trade winds are to be blamed for partly causing La Niña. El Niño is the opposite of La Niña. This occurs when the easterly trade winds become weaker and, in some cases, blows in the opposite direction. The Pacific Ocean during El Niño becomes warm, gains heat and pushes eastward.
- **Upwelling:** Unusually strong, eastward moving trade winds and ocean currents bring this cold water to the surface, a process known as upwelling.

Beaching of Whales

Geography & Environment

CONTEXT:

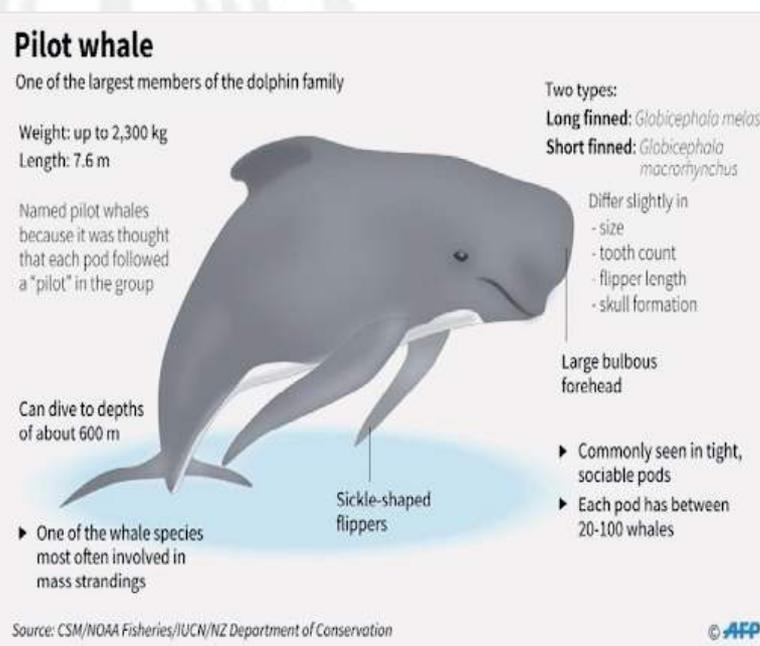
More than 100 whales stranded on a Sri Lankan beach have been guided to the sea in an overnight rescue operation.

ABOUT:

- **Cetacean stranding**, more commonly referred to as **beaching**, refers to the phenomenon of dolphins and whales stranding themselves on beaches.
- Whales are known to strand themselves on beaches across the world and they do so singularly or in groups.
- While individual strandings are mostly attributed to injury or sickness, it is not clear why exactly whales beach themselves in groups.

Whale Beaching/stranding:

- Beaching refers to the phenomenon of dolphins and whales stranding themselves on beaches.
- There are around 2,000 strandings each year worldwide, with most resulting in the death of the animal.
- Whales strand themselves on beaches either singularly or in groups. While individual strandings are mostly attributed to injury or sickness, it is not clear why exactly whales beach themselves in groups.



Possible reasons for whale stranding:

- Some whales follow schooling fish or other prey into shallow waters, which cause the whales to become disoriented, as a result of which they get stranded.
- Another reason could be panic from being trapped by a predator such as killer whales or sharks or whales might be drawn to land by prey-rich currents.
- Some scientists believe that sonar signals and other man-made loud underwater noises may contribute to beaching events.
- The shape of the beach and the coastline could also have a role to play.



Which human influences exacerbate the situation?

- In addition to natural factors, man-made underwater noise from ships, icebreakers, drilling platforms or military sonar equipment can also massively impair the orientation and communication of marine mammals.
- They flee the strong sound waves in a state of confusion.
- And since the density of water is much higher than that of air, sound propagates underwater about five times faster than in the air.
- Military sonar operations employing very loud sounds have particularly drastic effects.
- The sonars, which are louder than 200 decibels, triggered the formation of gas bubbles in the blood vessels and organs of marine mammals (as happens with diving sickness), obstructing the blood supply and leading to their death.

Commission for Air Quality Management (CAQM)

Geography & Environment

Why in news?

Dissolving the 22-year-old **Environmental Pollution (Prevention and Control Authority (EPCA)**, the Centre has constituted a permanent body —**the Commission for Air Quality Management in National Capital Region and Adjoining Areas**.

About the commission

- The Commission for Air Quality Management (CAQM) will have the power:
 - to formulate rules, set emission standards
 - to impose fines up to Rs. 1 crore or send violators to prison for up to five years.
- The permanent body is to be headed by a **former secretary** to the Government of India or **chief secretary** to a state government.
- The ex-officio members comprise chief secretaries or secretaries dealing with the subject of environment in the states of Delhi, Haryana, Punjab, Rajasthan and Uttar Pradesh and non-governmental organisations.
- Of the total members, only three members representing NGOs have been included.

Tasks and power of the Commission

- The Commission will, among a long list of tasks, provide the mechanism and the means to implement in the NCR and around, the National Clean Air Programme, the National Air Quality Monitoring Programme, the National Ambient Air Quality Standards.
- It is tasked with laying down parameters of air quality in various aspects, parameters for emission or discharge of environmental pollutants from various sources.
- The Commission has the right to prohibit activities that are likely to cause or increase air pollution in the NCR.
- The Commission can take up matters suo-motu or on the basis of complaints from individuals and organizations
- It will submit to the Centre an annual report which will be laid before both houses of the Parliament. Every regulation and order of the Commission too will be placed before Parliament.
- The Commission would specifically monitor measures taken by the states to prevent factors causing air pollution like stubble burning, industrial emissions, road dust, vehicular pollution, construction activities, biomass burning and other major sources of air pollution.

Blue Tide

Geography & Environment

In the past few days, tourists on the beaches of Maharashtra have witnessed the blue fluorescence emitted by waves hitting the coastline.

About the phenomenon

- **What is it and how does blue tide occur?**
 - According to the researchers it occurs when phytoplankton (microscopic marine plants), commonly known as dinoflagellates, produce light through chemical reactions in protein.
 - Waves disturb these unicellular microorganisms and makes them release blue light, they added
 - The phenomenon called 'blue tide', when bioluminescent marine life makes the sea appear a deep shade of blue



• What is bioluminescence ?

- Bioluminescence is the production and emission of light by a living organism. It is a form of chemiluminescence
- It is found in many marine organisms: bacteria, algae, jellyfish, worms, crustaceans, sea stars, fish, and sharks to name just a few.
- Most deep-sea animals produce some bioluminescent light, but the phenomenon isn't relegated to the deep: one of the most common sightings occurs at the surface of the ocean.
- Many small planktonic surface dwellers—such as single-celled dinoflagellates—are bioluminescent.

• Reasons for blue tide

- According to marine experts, high temperature, high quantity of organic material, such as sewage and effluents and increased turbulence/wave action of the water, could be one of the reasons behind the blue tide.
- Blue tide in India and other parts of the world
- Blue tide was spotted at Juhu, Devgad and Velas beaches in Ratnagiri. Across
- India's coast, the spectacle has been witnessed from November to January and, in some instances, even in March.
- Recently, the 'blue tide' was witnessed along Dakshina Kannada-Udupi coast.
- This phenomena has been observed in many beaches across the world, such as Maldives, Vietnam, Indonesia, USA, and Australia.

Pink Bloom

Geography & Environment

What is it?

- Actually it is a invasive pink flowering plant which is spread over a vast area in Kozhikode's Avala Pandi near Perambra
- Avala Pandi, a village in Kerala's Kozhikode has generated a lot of interest among locals as images of the aquatic plant spread across the village has sparked a lot of attention.
- This plant belongs to the family of Cabombafurcata
- It is locally known as 'mullanpayal'.
- According to botanists, though these invasive plants appear attractive, they pose a serious threat to water bodies
- The 1,500-acre AvalaPandi, known as the rice-bowl of Kozhikode



What is an invasive species?

- An invasive species is most often a non-native species that spreads from a point of introduction to become naturalized and negatively alters its new environment

Refuse Derived Fuel

Geography & Environment

What is Refuse derived fuel?

- Refuse-derived fuel is a fuel produced from various types of waste such as municipal solid waste, industrial waste or commercial waste (it includes biodegradable material as well as plastics).
- **The World Business Council for Sustainable Development** defines Refuse-derived fuel as "Selected waste and by-products with recoverable calorific value can be used as fuels in a cement kiln, replacing a portion of conventional fossil fuels, like coal, if they meet strict specifications. Sometimes they can only be used after pre-processing to provide 'tailor-made' fuels for the cement process"
- RDF has many facets, meaning it can be further specified into TDF (Tyre Derived Fuels), SRF (Solid Recovered Fuels) and AF (Alternative Fuels).



What types of materials are processed?

- RDF consists largely of combustible components of such waste, as non recyclable plastics (not including PVC), paper cardboard, labels, and other corrugated materials.

How does the production of RDF take place?

- The most common way of extracting RDF from Municipal Solid Waste is to combine mechanical and biological treatments methods.

Vine Snakes**Geography & Environment****Why in news?**

Researchers discovered a **new vine snake species in peninsular India**.

About Vine Snakes

Vine snakes are known to be among the **most common snakes in peninsular India, found even in many peri-urban areas wherever there is some greenery, and in the Western Ghats**.

New species of vine snakes discovered

- **Asian vine snakes**, distributed throughout the continent, belong to the genus *Ahaetulla* and the recently described *Proahaetulla*.
- The common green vine snake (*Ahaetullanasuta*) in India was a complex of several species.
- They found four distinct small-bodied and short-nosed species:
 - Northern Western Ghats vine snake (*Ahaetulla borealis*),
 - Farnsworth's vine snake (*Ahaetullafarnsworthi*),
 - Malabar vine snake (*Ahaetullamalabarica*) and
 - Wall's vine snake (*Ahaetullaisabellina*) in the Western Ghats rainforests alone.
- These species were superficially similar in their morphology, but separated by geographic or ecological barriers.

**Willow Warbler****Geography & Environment****Why in news?**

Recently, **Willow Warbler** has been sighted for the **first time** in the country at Punchakkari in Kerala.

About Willow Warbler

- It is one of the **longest migrating small birds** that breed throughout **northern and temperate Europe**.
- The scientific name of Willow Warbler is **Phylloscopus Trochilus**.
- It is usually seen in **European and the Palearctic regions** and migrates to **sub-Saharan Africa** during **early winter**.
- It is found in **wooded habitat** which is from **mixed forest to willow thickets** in open country.
 - It is a bird of **open woodlands** with trees and ground cover for nesting, including most importantly **birch, alder, and willow habitats**.
- It is listed as '**Least Concern**' under the IUCN Red List of Threatened Species.



Why in news ?

Indian researchers have discovered a genus of tree frog found in the Andaman Islands and the northeast.

Genus Rohanixalus

- Named after Sri Lankan taxonomist Rohan Pethiyagoda, the frogs of the new genus Rohanixalus are characterised by a rather small and slender body (size about 2 to 3 cm long).
- It has a pair of contrastingly coloured lateral lines on either side of the body, minute brown speckles scattered throughout the upper body surfaces, and light green coloured eggs laid in arboreal bubble-nests.
- Based on DNA studies, the new genus is also revealed to be a distinct evolutionary lineage from all previously known tree frog genera.
- It is the 20th recognised genus of the family Rhacophoridae that comprises 422 known Old World tree frog species found in Asia and Africa.

Sub-species of this frog

- There are eight frog species in this genus Rohanixalus.



- They are known to inhabit forested as well as human-dominated landscapes right from the northeast to Myanmar, Thailand, Malaysia, Indonesia, Vietnam, Laos, and Cambodia, up to southern China.
- Unique features of this genus
- The genus has several unique behavioural traits including maternal egg attendance where the female (mother) attends the egg clutches until hatching and assists in the release of the tadpoles into the water.
- During the first three days after egg-laying, the female sits over the eggs and produces a gelatinous secretion with which she glazes the egg mass through the clock-wise movement of her legs.
- This behaviour provides necessary moisture to the eggs laid on exposed leaf surfaces and protects them from insect predation.

CONTEXT

- **Forests help mitigate the impacts of climate change, provide economic benefits for the country, and meet specific facets of India's sustainable development goals.**
- **It is essential, therefore, to revisit India's forest governance and evaluate the country's efforts at forest restoration and conservation.**

BACKGROUND

- India's first comprehensive climate analysis report, '**Assessment of Climate Change over the Indian region**', highlights the role of forests as effective mechanisms to mitigate climate change impacts, provide economic benefits for the country, and meet several of India's sustainable development goals.
- It is essential, therefore, to revisit India's forest governance and evaluate efforts at forest restoration and conservation.
- Over the past two decades, India has witnessed an ever-increasing rate of deforestation and unsustainable exploitation of forest resources, leading to overall degradation at an alarming rate.

ANALYSIS

What is the state of India's Forests?

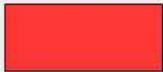
- India is now ranked 3rd in the world for annual net gain in terms of forest area.
- The biennial **India State of Forest Report-2019** released by the Union Ministry for Environment, Forest and Climate Change reports that India has achieved an increase of 24.56 percent in its total forest and tree cover.
- The government has claimed that India's green cover has increased by 15,000 km² in the last four years.

Definitions

- Forest and tree cover:** The total area of tree patches in areas both less than and more than 1 ha is then known as "forest and tree cover".
- Tree cover:** "Tree cover" is also separately defined as "all tree patches less than 1 ha outside the recorded forest area".
- Trees outside forests:** Further, "trees outside forests" refers to trees outside recorded forest area, regardless of the area of the tree-patch.
- Growing stock:** The other term, "growing stock", is the volume of trees in an area of forest above a certain thickness at breast height and measured in cubic meters. The 'growing stock' is the basis for calculating the amount of biomass and carbon stock in forests.

Classification Scheme

The forest cover is broadly classified in 4 classes, namely very dense forest, moderately dense forest, open forest and mangrove. These classes are defined isbelow.

Very dense Forest	All Lands with tree cover (Including mangrove cover) of canopy density of 70% and above	
Mod Dense forest	All lands with tree cover (Including mangrove cover) of canopy density between 40% and 70% above	
Open forest	All lands with tree cover (Including mangrove cover) of canopy density between 10% and 40%	
Scurb	All forest lands with poor tree growth mainly of small or stunted trees having canopy density less than 10 percent	
Non Forest	Any area not included in the above classes	

Assessing the power of Indian forests

- Supporting economy and livelihood:** India's forest ecosystems support the economy and livelihood of approximately 300 million tribal and local people in forest villages.
- Habitat, food and energy supplier:** Covering 80.73 mha or 24.56 percent of the geographical area of the country, forests are home to 80 percent of the terrestrial biodiversity, provide 40 percent of energy needs, and 30 percent of the fodder supply.
- Natural stabilising agent for climate:** Besides driving sustainable growth, forests act as a natural stabilising agent for the climate as they regulate carbon cycle significantly.
- Carbon sequestration:** Carbon sequestration through photosynthesis is considered one of the most potent and in expensive methods for climate change mitigation.
- Forests are the only unique, safe and inexpensive carbon capture and storage technology that is naturally available at scale with the potential to neutralise global CO₂ concentrations.

Mapping deforestation

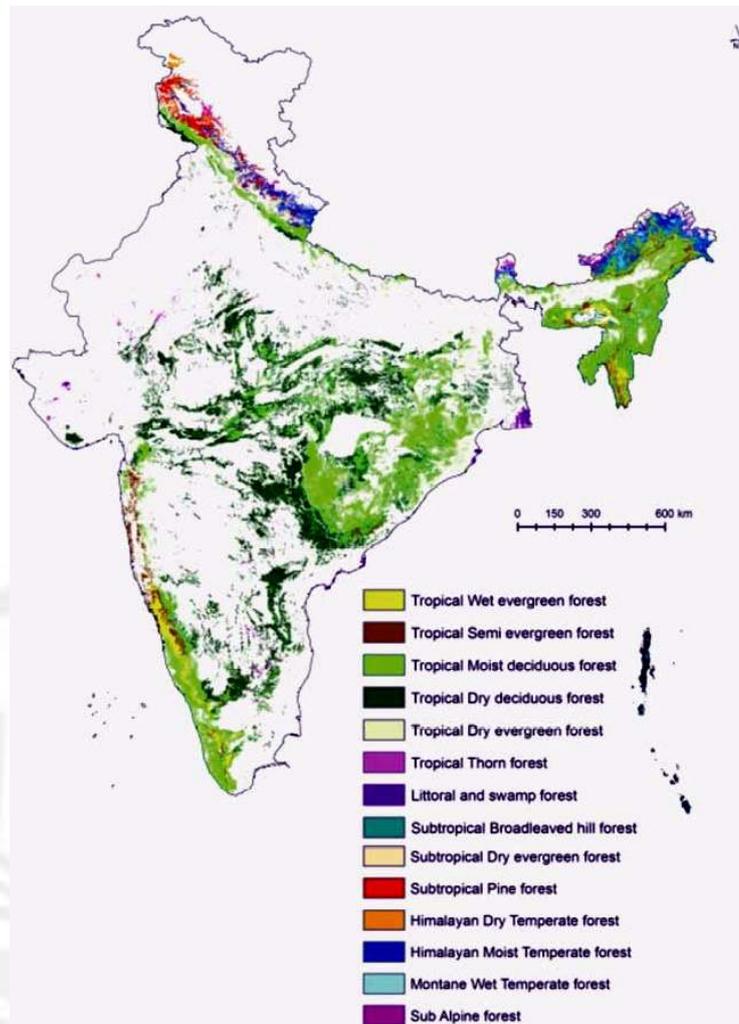
- Unfortunately, due to the over-dependence on forests of large populations and the unsustainable exploitation of

Role of forests in climate change

- Forests have four major roles in climate change:
- they currently contribute about one-sixth of global carbon emissions when cleared, overused or degraded
- they react sensitively to a changing climate
- when managed sustainably, they produce wood fuels as a benign alternative to fossil fuels
- they have the potential to absorb about one-tenth of global carbon emissions projected for the first half of this century into their biomass, soils and products and store them-in principle in perpetuity.

their resources, India has witnessed rapid deforestation in the last decades, leading to the degradation of over 30 percent of its land and a loss of 1.6 mha of forest cover.

- According to government data, in the last 30 years, 14,000 km² of forests were cleared to accommodate 23,716 development and industrial projects across India.
- Besides rapid land conversion, the harvest of an estimated 850 Mt of fodder, 100 Mt of fuel wood, and 15Mt of timber annually beyond the sustainable limits have led to the degeneration of India's forests.
- At the same time, however, India is seeing a massive deterioration in the health of its forests, with the growing stock (GS) decreasing significantly by 586.387 million cubic meters (M cum) or 12.26 percent.
- The reduction in GS, despite increasing forest cover, is an indicator of forest degradation.
- Within the forests recorded officially by government authorities, 94.96 percent are prone to crop injuries, 39.94 percent has inadequate regeneration, and 5.05 percent has no regeneration.
- Forest degradation undermines the ability of forests to act as carbon sinks.



Impact of deforestation

Reducing productivity of ecosystem:

Deforestation and loss of tree density of forests decreases the carbon assimilation capacity and reduces the forest soil's organic carbon, thereby affecting the productivity of the ecosystem to act as a carbon storage.

- Therefore, the larger the green cover of the forest and the older and healthier the trees are, the better is its capacity to sequester carbon.
- The capacity of a very dense forest is naturally highest, followed by the moderately dense, and the open forests.
- Dense tropical forests that are rich in biodiversity have the greatest potential to absorb the highest amount of carbon dioxide (CO₂) from the atmosphere.
- **Increase in carbon emissions:** Continuous, unchecked deforestation and forest degradation has resulted insignificant reduction (12.6 percent) in the growing forest stocks and caused nearly 172 tonnes of carbon emissions as per World Resources Institute (WRI) over the last two decades.
- **Economic loss:** Furthermore, for a highly resource-dependent country such as India, any severe degradation of forests would have far-reaching ramifications for the economy, food and water security, and climate solutions.
- According to a study by **TERI (The Energy and Resource Institute)**, the degradation of India's forests is depriving the country of 1.4 percent of its GDP annually.

What initiatives are taken by India?

- At the UN Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP, 2015), India, under the **Bonn Challenge** committed to the goal of restoring 13 million hectares (mha) of degraded and deforested land by 2020 and an additional 8 mha by 2030.
- Moreover, in its pledge to reduce the emission intensity of its GDP by 33-35 percent by 2030 (from 2005 levels) through mitigation efforts across various sectors, India envisions to create an additional carbon sink of 2.5-3.0 billion tonnes (Bt) of CO₂eq through additional forest and tree cover by 2030.
- The Indian government is pursuing afforestation and reforestation through policies and programmes such as
- the **National Mission on Green India**
- the **National Afforestation Programme**
- compensatory afforestation
- plantation drives across States

International treaties to protect forests

- **United Nations Forum on Forests (UNFF):** UNFF was established in 2000. In May 2006 it adopted four objectives:
 - Reverse the loss of forest cover worldwide through sustainable forest management;
 - Enhance forest-based economic, social and environmental benefits;
 - Increase significantly the area of sustainably managed forests; and
 - Reverse the decline in official development assistance for sustainable forest management and mobilise significantly increased new and additional financial resources from all sources for the implementation of sustainable forest management.
- **Convention on Biological Diversity:** Since deforestation is one of the main causes of species loss, in 1998 the Conference of the Parties to the Convention on Biological Diversity endorsed a work programme for forest biological diversity. 2002 saw the adoption of an expanded programme of work on forest biological diversity.
- **UNCCD:** The United Nations Convention to Combat Desertification (UNCCD), entered into force in 1996. It has helped bring about a situation in which most countries have now established clear rules for combating desertification.
- **REDD+:** REDD (Reducing Emissions from Deforestation and Forest Degradation) is based on the idea of financially rewarding a country's government and its population when they can demonstrate that they have avoided deforestation. REDD+ marked a further extension of this approach.
- As well as forest protection, this approach now also includes other measures that support the role of the forest as a carbon sink, such as improved forest management and targeted reforestation.
- **Bonn Challenge:** In 2011, the world's largest forest and landscape restoration initiative was launched in Bonn. The "Bonn Challenge" aims to restore 150 million hectares of degraded and deforested land by 2020, and 350 million hectares by 2030. It is estimated that by reforesting this land it will be possible to absorb around one gigaton of carbon dioxide.
- **2030 Agenda for Sustainable Development:** In 2015, the international community adopted the 2030 Agenda for Sustainable Development.
- **Goal 15** includes forest protection. Specifically, it aims to halt deforestation worldwide by 2020 and ensure that all forests are managed sustainably.
- **Goal 6** also underlines the importance of forests for water supply.
- **Goal 13:** Although forests are not mentioned explicitly in this context they also play a major role in Goal 13, which deals with climate change.

What about funding for the forests?

- In the **Union Budget 2020-21**, the overall allocation for the Union Ministry of Environment, Forest and Climate Change (MoEFCC) has increased to ₹ 31000 million for 2020-21 from ₹ 2,6579.4 million in the revised estimate of 2019-20, a significant portion of which is expected to be channelled to the integrated development of forest ecology.
- Furthermore, in October 2019, the MoEFCC transferred ₹ 47,436 crore under the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) to 27 States for their afforestation efforts.

A Roadmap for Forest Regeneration

- **Redefining 'forests':** An important element of a sound roadmap for forest regeneration is a redefinition of what is considered a 'forest'. The focus should shift to the measurement of the relative density of a 'thriving forest' or an 'ecosystem'
- **Updating forestry policies:** The National Forest Policy of 1952 and 1988, as well as existing forest regulations, have become ineffective in protecting and conserving forest resources. A new forest policy, therefore, is vital in order to provide an overarching framework and direction for the management and regulation of forests; such new policy would consider current changes in forests due to pressing issues such as climate change and pollution.

First Snow Leopard Census

Geography & Environment

Why in news?

- Recently, first snow leopard census started in Uttarakhand
- Who has initiated the census?
- It is being carried out by the Uttarakhand Forest Department and Wildlife Institute of India (WII)

About the survey

- The scientific estimation will focus on sightings by residents of hilly areas, who migrate to the plains during the winter, and paramilitary personnel.
- As per WII, the Snow Leopard Population Assessment in India (SPAII) is the national protocol for this exercise.

A brief note on snow leopard

- The snow leopard (**also called ounce**) is found in high mountains in **12 countries of Central Asia**.
- In India, it inhabits the higher Himalayan and trans-Himalayan landscape in the **five states of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh**.
- Snow leopards are not known to be aggressive toward humans.
- It is the **National Heritage Animal of Pakistan and Afghanistan**.
- IUCN status – **Vulnerable**
- According to a habitat-based estimate three years ago, there are 626 snow leopards scattered across a 1.2-lakh sq km area at heights of between 3,000 to 5,000 metres.
- As per that estimate, Ladakh has 130 snow leopards followed by Himachal Pradesh with 90 and Uttarakhand 86.

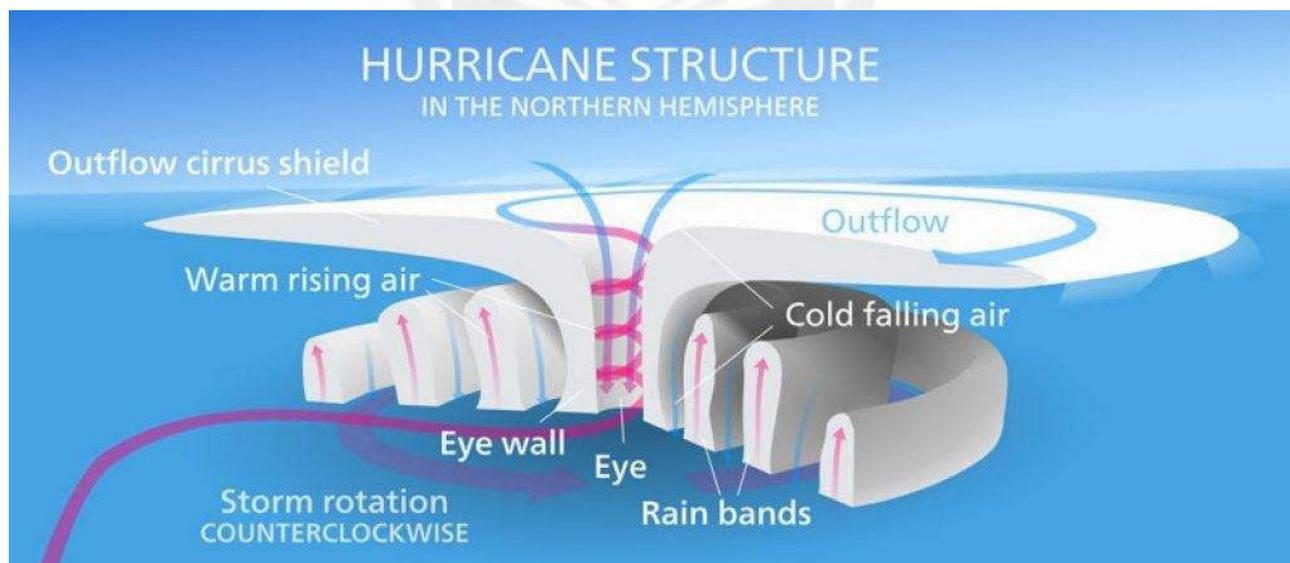


October Cyclones

Geography & Environment

Why in news?

October to December period is among the favourable months for the development of cyclones in the Bay of Bengal and the Arabian Sea. This year, however, October passed without witnessing a cyclonic storm.



When do cyclones form in India?

- About **80 cyclones are formed around the world annually, out of which five** are formed in the Bay of Bengal and the Arabian Sea, together known as the North Indian Ocean.
- Cyclones in the North Indian Ocean occur during two seasons, **April to June (pre-monsoon) and October to December (post-monsoon)**. May and November are the **most conducive months** for development of cyclones.
- Cyclonic disturbances are common in October; some of these develop into a cyclone.
- These **disturbances enter the Bay of Bengal from South China Sea** side and head towards the Indian coast.
- Generally, the **India Meteorological Department (IMD)** describes the formation of one cyclone and two cyclonic disturbances in October as normal.
- This year, however, there was **no system that intensified to form a cyclone**.
- Although there were **three cyclonic disturbances**. Two of these disturbances caused widespread rain — one along **Andhra Pradesh, Telangana, north Karnataka and Maharashtra, the other in West Bengal and Bangladesh**.

How often do cyclones skip October?

- Data on the frequency of cyclone development during 1891-2020 show that **no cyclones formed in October on 42 occasions during these 130 calendar years.** The **longest period of absence** of cyclones during October was **between 1950 and 1954.**

Why were there none this October?

- IMD officials have attributed it to **weak La Niña conditions (a kind of weather pattern)** along the equatorial Pacific Ocean, where **cooler-than-normal sea surface temperatures have been prevailing since August.**
- This has prevented low-pressure systems from intensifying beyond a deep depression.
- Also, high vertical wind shear (caused by significant wind speed differences between higher and lower atmospheric levels) prevented low-pressure systems and depressions from strengthening into a cyclone.

Various names for cyclone

- **Typhoons** in the China Sea and Pacific Ocean
- **Hurricanes** in the West Indian islands in the Caribbean Sea and Atlantic Ocean
- **Tornados** in the Guinea lands of West Africa and southern USA.
- **Willy-willies** in north-western Australia
- **Tropical Cyclones** in the Indian Ocean.

World Bank's Climate Change Knowledge Portal**Geography & Environment****About World Bank's climate change knowledge portal**

- This portal provides global data on historical and future climate, vulnerabilities, and impacts
- The Portal provides an online platform for access to comprehensive global, regional, and country data related to climate change and development.
- The Portal provides a web-based platform to assist in capacity building and knowledge development.
- The portal aims to provide development practitioners with a resource to explore, evaluate, synthesize, and learn about climate-related vulnerabilities and risks at multiple levels of details.
- Using climate science research results to inform the decision making process concerning policies or specific measures needed to tackle climate impacts, or even to understand low carbon development processes, is often a difficult, yet crucial, undertaking.
- It contains environmental, disaster risk, and socio-economic datasets, as well as synthesis products, such as the Climate Adaptation Country Profiles and Climate Smart Agriculture Profiles, which are built and packaged for specific user-focused functions in a particular country or sector.
- **What can users achieve using CCKP?**
- Users are able to evaluate climate-related vulnerabilities, risks, and actions for a particular location on the globe by interpreting climate and climate-related data at different levels of details.
- Learn about climate and climate related datasets at the global, regional, and country level.
- Enhance knowledge on climate change related topics, including exposure, vulnerability, sectoral impacts, and adaptation options.
- Assess, visualize, and download resourceful climate data and information.

**Deemed forests in India****Geography & Environment****Why in news?**

- Karnataka Forest Minister has announced that the state government would soon declassify 6.64 lakh hectares of the 9.94 lakh hectares of deemed forests in the state (nearly 67%) and hand it over to Revenue authorities. Issue of deemed forests is a contentious one in Karnataka, with legislators across party lines often alleging that large amounts of agriculture and non-forest land are "unscientifically" classified as such.

What are deemed forest ?

- Concept of deemed forests has **not been clearly defined** in any law including the **Forest Conservation Act of 1980**, the Supreme Court in the case of **T N Godavarman Thirumalpad** (1996) accepted a wide definition of forests under the Act.
- This description covers **all statutorily recognised forests**, whether **designated as reserved, protected or otherwise for the purpose of Section 2 (1) of the Forest Conservation Act,**"
- Supreme Court said in its December 12, 1996 order. "The term 'forest land' occurring in Section 2 will not only include 'forest' as understood in the dictionary sense, but also any areas recorded as forest in the government record irrespective of the ownership."
- An **expert committee** constituted by the Karnataka government after the Supreme Court order **identified 'deemed forests'** as "**land having the characteristic of forests irrespective of the ownership'**".
- Thickly wooded areas of the Revenue Department not handed over to the Forest Department; thickly wooded areas recommended to be handed over to the Forest Department; thickly wooded land distributed to grantees but not cultivated; and thickly wooded plantations of the Forest Department could all be 'deemed forests', the committee said in a report in 2002.

Why there are demands to reclassify?

- A deemed forest fits "dictionary meaning" of a forest, "irrespective of ownership".
- Amidst claims that the move hit farmers, as well as barred large tracts from mining, the state has been arguing that the classification was done without taking into account needs of people.
- **How much land in Karnataka is protected under the Forest Act?**
- Reports by expert committees in 1997 and 2002 identified 43.18 lakh hectares of forest land for conservation in Karnataka, which included 33.23 lakh hectares notified forest area as per forest records and 9.94 lakh hectares 'deemed forests'.

Issues

- Preservation of forest areas in India under the Forest Conservation Act, 1980 has been continuously **monitored by the Supreme Court since the Godavarman case judgment** in 1996.
- The state government **must obtain clearances** from the Supreme Court for affecting changes to land classified as deemed forests since the verdict, said officials of the Forest, Ecology and Environment department in Karnataka.
- In 2019, the state had filed an interim application in the Supreme Court for exclusion of 5.18 lakh hectares from the deemed forest category.
- The SC has not passed an order on the application. A fresh application showing the extent of land to be released from the deemed forest category as 6.64 lakh hectares must be filed,

Tristan da Cunha Island

Geography & Environment

Why in news?

- The isolated UK Overseas Territory of Tristan da Cunha, the world's most remote human settlement, has been declared the largest fully protected marine reserves in the Atlantic Ocean at 687,000 square kilometres.

About

- Tristan da Cunha, a British territory, is 2,300 miles east of South America and 1,600 miles west of South Africa.
- Tristan da Cunha, which is inhabited by less than 300 humans is a small chain of islands and the water around the islands are considered to be the richest in the world.
- The island group is also home to the World Heritage Site of Gough and Inaccessible Islands, which is one of the most important seabird islands in the world.
- **Archipelago:** It is a small chain of islands over 6,000 miles from London in the South Atlantic.
- The territory includes four main islands, the largest of which is Tristan da Cunha, located 2,810 kilometers west of Cape Town, South Africa.



Rich biodiversity:

- The isolated area, roughly equidistant between South Africa and Argentina, supports 85% of the endangered northern rock hopper penguins, 11 species of whales and dolphins, and most of the world's sub-Antarctic fur seals.
- The waters around Tristan da Cunha serve as a feeding ground for the critically endangered Tristan albatross and endangered yellow-nosed albatross.
- The islands are also home to several species of land birds including the Wilkins bunting, the U.K.'s rarest bird, and the Inaccessible rail, the world's smallest flightless bird.
- The island group is also home to the World Heritage Site of Gough and Inaccessible Islands, which is one of the most important seabird islands in the world.
- **Threats:** They face threats including illegal and unregulated fishing activities, overfishing, plastic pollution and climate change.
- Invasive mice brought to the islands by passing ships kill over 2 million birds a year.

Marine Protected Areas (MPAs)

- They involve the protective management of natural areas according to pre-defined management objectives.
- MPAs can be conserved for a number of reasons including economic resources, biodiversity conservation, and species protection.
- They are created by delineating zones with permitted and non-permitted uses within that zone.
- Significance: From maintaining sources of food to helping protect shorelines, and from protecting

Renewables 2020 - Analysis and forecast to 2025**Geography & Environment****Why in news?**

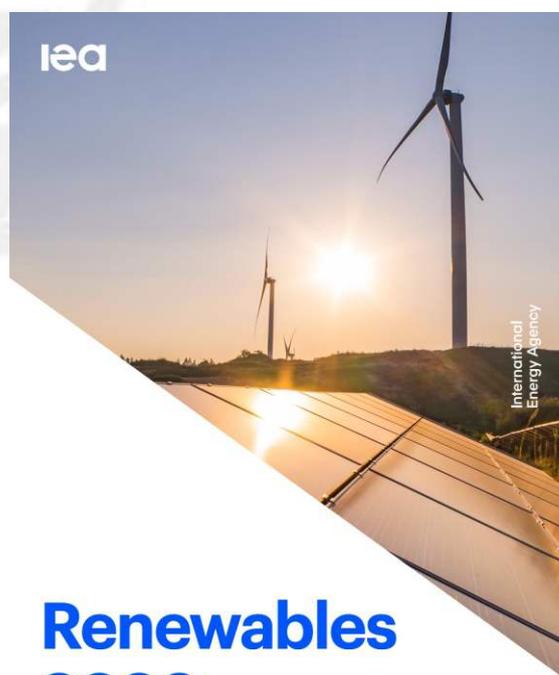
According to the International Energy Agency's (IEA) new report - Renewables 2020 - Analysis and forecast to 2025, India may contribute the most towards pushing the renewable energy sector up in 2021.

Findings of the report:

- **Optimistic outlook:**
 - Although global energy demand is set to decline 5 percent, renewable electricity generation will grow 7 percent.
 - This is due to long-term contracts, priority access to the grid and continuous installation of new plants.
- **Growth on track:** Renewable capacity additions are on track for a record expansion of nearly 10 percent in 2021. This will be due to **commissioning of delayed projects** where construction and supply chains were disrupted.
- **Key markets:** Comprising the United States, India and some European countries have permitted deadlines to be extended for auctions and policies and robust pre-COVID-19 project pipeline ensure continued momentum.
- **Unresolved crisis:** Decline in global renewable capacity addition in 2022 due to the ensuing policy uncertainties, ongoing financial struggles of distribution utilities in India.

India's wind and solar market:

- **Wind capacity additions:** Are expected to drop 60 percent in 2020 as compared to 2019.
- **Solar PV capacity additions:** In the first half of 2020, new PV capacity installations were 70 percent below average first-half growth of the previous three years.
- This is due to COVID-19-related supply chain disruptions and construction slowdowns, as well as increased macroeconomic risks.
- **Distribution utility woes:** The report highlighted the difficulties to India's distribution utilities as COVID-19 deteriorated their financial viability.
 - Although policies to improve utilities' financial health through the Union government's **Ujjwal DISCOM Assurance Yojana (introduced in 2015), it has only been partially successful.**
 - New renewable energy plants managed by utilities with low credit rating would likely face greater obstacles than those overseen by healthier utilities.

**Renewables
2020**

Analysis and forecast to 2025

Innovative approach adopted by India:

- **Reverse-bid auction:** The switch from state-level to central reverse-bid auction is a move that provides more payment security and attracts more competition.
- **Wind-solar-storage hybrid auctions:** Also make renewables more competitive.
- **Green Energy Corridor and solar parks:** To address the issues of transmission grid bottlenecks and land acquisition.

The International Energy Agency (IEA)

- It is a **Paris** based autonomous **intergovernmental** organisation established in the framework of the Organisation for Economic Co-operation and Development (**OECD**) in **1974** in the wake of the 1973 oil crisis.
- The IEA acts as a **policy adviser** to its member states, but also works with non-member countries, especially China, India, and Russia.
- The Agency's mandate has broadened to focus on the "**3Es**" of effectual energy policy: energy security, economic development, and environmental protection.
- **IEA member countries** are required to maintain total oil stock levels equivalent to at least 90 days of the previous year's net imports.

The Cost of Clearing the Air**Geography & Environment****Why in news?**

- In February, Finance Minister Nirmala Sitharaman announced a ₹4,400 crore package for 2020-21 to tackle air pollution in 102 of India's most polluted cities.
- The funds would be used to reduce particulate matter by 20%-30% from 2017 levels by 2024 under National Clean Air Programme (NCAP) though it isn't clear yet what the budgetary outlays for subsequent years are likely to be.
- Though it was the largest-ever yearly allocation by a government to specifically tackle air pollution, the fine print revealed that only half the money was finally allotted to 15 States (and 42 cities in them) in November.
- The rest will be given in January based on how cities achieve certain 'performance parameters' that are still being worked out by the Centre.

The scale of the problem:

- It is unclear if this amount is adequate to handle the task of improving air quality. For one, the scale of the problem is unknown.
- Delhi, after being the epitome of pollution for at least two decades, has only in the last two years managed to firmly install an extensive network of continuous ambient air quality monitors — about 37 and the highest in the country — managed by several government or allied bodies.
- Several research studies and numerous hours of litigation have contributed to establishing this and the actual taxpayer money that has actually gone into it far exceeds allocations that find mention in the Centre and State government's budgeting books.
- Several of the States with the most polluted cities that have been allotted NCAP funds are expected to spend a substantial fraction in the act of measurement.
- Maharashtra and U.P., by virtue of their size, got the maximum funds: close to ₹400 crore.
- An analysis by research agencies Carbon Copy and Respirer Living Sciences recently found that only 59 out of 122 cities had PM 2.5 data available.
- Historically, cities have used manual machines to measure specified pollutants and their use has been inadequate.
- Only three States, for instance, had all their installed monitors providing readings from 2016 to 2018. Prior to 2016, data aren't publicly available making comparisons of reduction incomparable.
- Now manual machines are being replaced by automatic ones and India is still largely reliant on imported machines though efforts are underway at institutions such as the Indian Institute of Technology, Kanpur, to make and install low-cost ones.

Cleaning up:

- The funds don't account for the trained manpower and the support system necessary to effectively maintain the systems and these costs are likely to be significant.
- Then comes the all-important aspect of cleaning up. A Right to Information disclosure sourced by the research agencies revealed that for four cities in Maharashtra, ₹40 crore had been assigned.
- Pollution clean-up activities have been assigned 50% of this budget and another ₹11 crore are allotted for mechanical street sweepers.
- Depending on the specific conditions in every city, these proportions are likely to change. Therefore, budgetary allocations alone don't reflect the true cost of reducing air pollution.

- Also, money alone doesn't work. In the case of the National Capital Region, at least ₹600 crore was spent by the Ministry of Agriculture over two years to provide subsidised equipment to farmers in Punjab and Haryana and dissuade them from burning paddy straw.
- Yet this year, there have been more farm fires than in the previous year and their contribution to Delhi's winter air woes remain unchanged.

India's Deep Ocean Mission

Geography & Environment

Why in news?

India will **launch an ambitious 'Deep Ocean Mission'** that **envisages exploration of minerals, energy and marine diversity** of the underwater world.

About Deep Sea Mission:

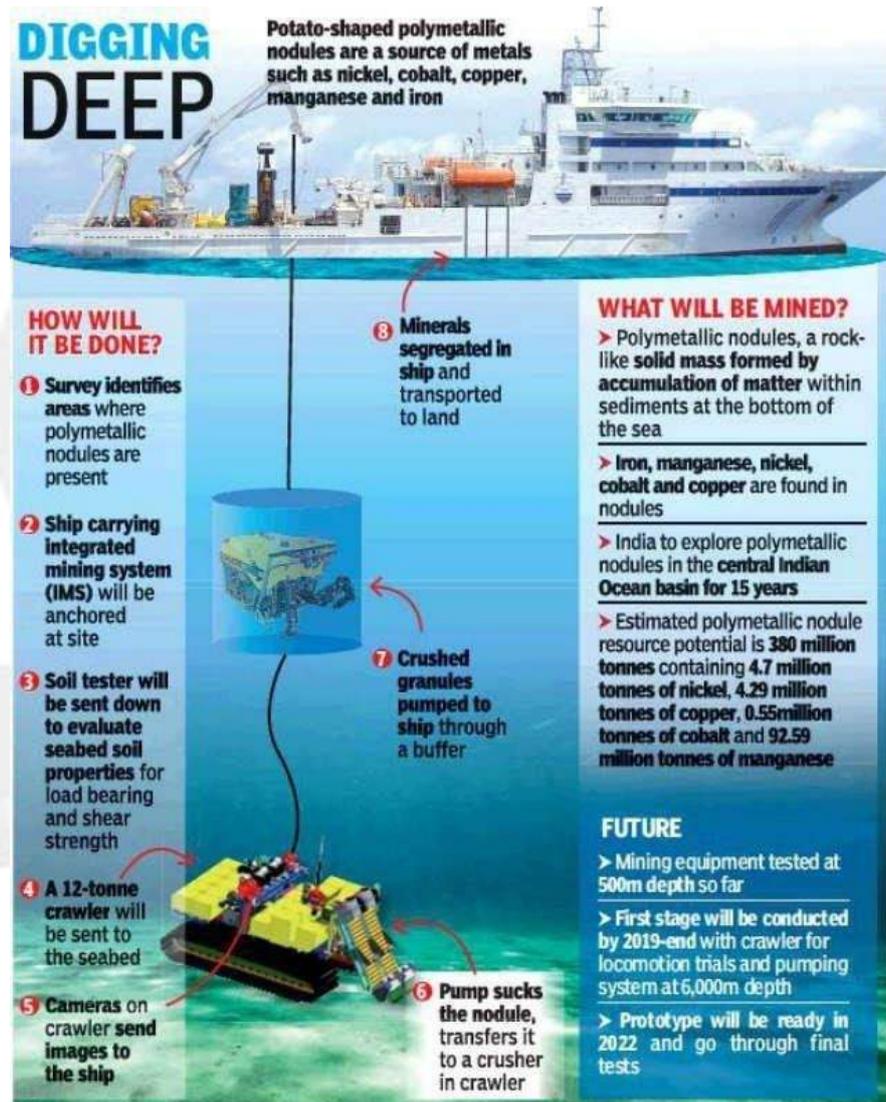
- The mission will be implemented and monitored by the Ministry of Earth Sciences (MoES).
- Other stakeholders of the mission will be government departments like the Defence Research and Development Organisation (DRDO), Department of Biotechnology, Indian Space Research Organisation (ISRO), Council for Scientific and Industrial Research (CSIR) and will likely cost an exchequer of Rs 4,000 crore.
- **Aims and Objectives**
 - It will give a boost to efforts to explore India's vast Exclusive Economic Zone (EEZ) and Continental Shelf.
 - It will aim for developing technologies for different deep ocean initiatives, design, development and demonstration of human submersibles.
 - An important aspect of the mission will be to explore the possibility of deep-sea mining and developing the necessary technologies.

Other Initiatives for Deep Sea Mining and Exploration:

- Apart from the Indian Ocean Region, poly metallic nodules have been identified from the central Pacific Ocean's Region known as the Clarion-Clipperton Zone.
- China, France, Germany, Japan, South Korea, Russia and also some small islands such as the Cook Islands, Kiribati are also striving for deep sea mining.

Environmental Impacts of Deep Sea Mining:

- According to the IUCN, the deep remote locations can be home to unique species that have adapted themselves to conditions such as poor oxygen and sunlight, high pressure and extremely low temperatures.
- The deep sea mining expeditions can make them go extinct even before they are known to science.
- Experts are worried about the sediment plumes that will be generated as the suspended particles can rise to the surface harming the filter feeders in the upper ocean layers.



About International Seabed Authority (ISA):

- It is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the 1994 Agreement relating to the Implementation of Part XI of the UNCLOS.
- Headquarters in Kingston, Jamaica.
- Through this organization, States Parties to UNCLOS, organize and control all mineral-resources -related activities in the Area for the benefit of mankind as a whole.

About United Nations Convention on the Law of the Sea (UNCLOS):

- It is an international agreement that came into force in 1982. It is also known as the Law of the Sea Convention or the Law of the Sea Treaty.
- It divides marine areas into five main zones namely- Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas.
- It provides a frame work for state jurisdiction in maritime spaces. It provides a different legal status to different maritime zones.



Why is it in news?

The Chief Justice of India is reported to have stated during the hearing of journalist Siddique Kappan's bail matter, that the Court was trying to "discourage" recourse to Article 32.

What is Article 32?

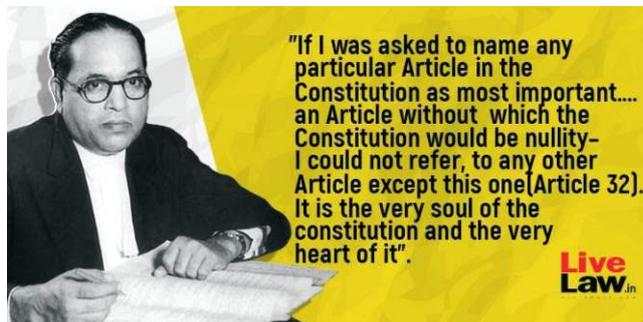
It deals with the 'Right to Constitutional Remedies', i.e. the right to move the Supreme Court for the enforcement of the rights conferred in Part III (Fundamental Rights) of constitution.

It states that the Supreme Court "shall have power to issue directions or orders or writs, for the enforcement of any of the rights conferred by this Part".

It includes writs of habeas corpus, mandamus, prohibition, quo warranto and certiorari, whichever may be appropriate.

The right guaranteed by this Article "shall not be suspended except as otherwise provided for by this Constitution (during the period of Emergency)".

An individual can approach the High Court under Article 226 or the Supreme Court directly under Article 32.



- **Habeas corpus** - (related to personal liberty in cases of illegal detentions and wrongful arrests)
- **Mandamus** - directing public officials, governments, courts to perform a statutory duty;
- **Quo warranto** - to show by what warrant is a person holding public office;
- **Prohibition** - directing judicial or quasi-judicial authorities to stop proceedings which it has no jurisdiction for; and
- **Certiorari** - re-examination of an order given by judicial, quasi-judicial or administrative authorities.

Why the court discourages the use of Article 32?

There are large numbers of Petitions under Article 32 coming to Supreme Court.

SC feels that high courts, under Article 226, are well-equipped to deal with such matters.

In civil or criminal matters, the first remedy available to an aggrieved person is that of trial courts, followed by an appeal in the High Court and then the Supreme Court.

When it comes to violation of fundamental rights, an individual can approach the High Court under Article 226 or the Supreme Court directly under Article 32. Article 226, however, is not a fundamental right like Article 32.

Comparing Article 226 and Article 32

Article 226 is the very dimension; the high court's vast jurisdiction technically casts no duty on them to enforce fundamental rights.

They have the discretion to act or not to; in contrast, the Supreme Court must.

Fourth, Article 32 is not absolute, the Supreme Court decides on what "appropriate proceedings" should be for it to be so moved.

But the Court may not prescribe any process as it likes but only that process which preserves, protects and promotes the right to constitutional remedies.

Supreme Court's recent observations on Article 32

The Supreme Court has been inconsistent with its position regarding Article 32.

Journalist Siddique Kappan Case - The court asked why the petitioners could not go to the High Court and waits responses from the Centre and the UP government.

Nagpur-based man defamatory case - The same Bench directed him to approach the High Court first.

Poet Varavara Rao Case - In a relief petition under Article 32, the Supreme Court directed the Bombay High Court to expedite the hearing on a bail plea filed on medical grounds.

Here, it also observed that once a competent court had taken cognisance, it was under the authority of that court to decide on the matter.

Arnab Goswami Case - The court had then said that the right to approach the Supreme Court under Article 32 is itself a fundamental right.

It also observed that "there is no doubt that if a citizen of India is deterred in any case from approaching this Court in exercise of his right under Article 32, it would amount to a serious and direct interference in the administration of justice in the country".

Romesh Thappar vs State Of Madras Case(1950) - Supreme Court observed that it is the protector and

guarantor of fundamental rights, and it cannot refuse to entertain applications seeking protection against infringements of such rights.

Jabalpur vs S.S. Shukla (1976) - Supreme Court had said that the citizen loses his right to approach the court under Article 32.

Constitutional experts say that it is eventually at the discretion of the Supreme Court and each individual judge to decide whether an intervention is warranted in a case, which could also be heard by the High Court first.

ED opens inquiry into KIIFB

Polity & Governance

Why is it in news?

Recently, the Enforcement Directorate (ED) has opened a preliminary inquiry to examine if borrowings by the Kerala Infrastructure Investment Fund Board (KIIFB) from overseas markets violated the provisions of the Foreign Exchange Management Act (FEMA) 1999.

What is Kerala Infrastructure Investment Fund Board (KIIFB) ?

Kerala Infrastructure Investment Fund Board (KIIFB), a statutory body under Finance Department, Government of Kerala is constituted under the 'Kerala Infrastructure Investment Fund Act, 1999' (Act 4 of 2000). Comprehensive modification of the Act and Scheme has been made through an amendment Ordinance in August 2016.

What is the Objective of KIIFB?

KIIFB seeks to raise funds from outside of state revenue to finance infrastructure projects. It has special focus to provide investment for projects in the sectors of Irrigation, Roads, Power, Water Supply, Inland Navigation, Ports, Solid Waste Management and Drainage. This also includes major land acquisition needs of the State. In other words, the investments projects envisaged by KIIFB ranges from construction of roads, bridges, and school classrooms to big ticket physical infrastructure.

Details of Inquiry

The Comptroller and Auditor General (CAG) highlighted that the KIIFB had raised Rs. 2,150 crore from the international market without the consent of the Central government in 2019.

A prior consent of the Government of India is necessary before a State Government raises a loan.

KIIFB had also overstepped its legal bounds by issuing masala bonds to raise money from foreign markets in violation of Article 293 (1) of the Constitution.

Article 293 (1): The executive power of a State extends to borrowing within the territory of India upon the security of the Consolidated Fund of the State within such limits. State governments can give guarantees within such limits as fixed by the legislature of the concerned State.

Implications of Inquiry

The investigation could potentially cause a fall in the revenues of the KIIFB.

It might affect the extended loans being offered to KIIFB by the International Finance Corporation (IFC) - a part of the World Bank group.

With an ongoing investigation, investors would not be willing to buy its masala bonds, which will further lead to loss of revenues.

The investigation can also result in an administrative paralysis, halting all the infrastructure development projects for which the KIIFB had collected the funds.

What are masala bonds?

Masala bonds are those bonds issued outside India but denominated in Indian Rupees, rather than dollar or the local currency.

They are used by the companies to raise funds. Till now Indian companies have been raising debt from overseas markets for decades through bond offerings, which have been denominated in dollar or other currencies.

Any corporate, body corporate and Indian bank is eligible to issue Rupee denominated bonds overseas.

The objective of these bonds is to fund infrastructure projects in India, fuel internal growth via borrowings and internationalise the Indian currency.

RBI mandates that the money raised through such bonds cannot be used for real estate activities other than for development of integrated township or affordable housing projects.

It also can't be used for investing in capital markets, purchase of land and on-lending to other entities for such activities.

How Masala Bonds help in supporting the rupee

The bonds are directly pegged to the Indian currency. So, investors will directly take the currency risk or exchange rate risks. If the value of Indian currency falls, the foreign investor will have to bear the losses, not the issuer which is an Indian entity or a corporate.

If foreign investors eagerly invest in Masala Bonds or bring money into India, this would help in supporting the rupee.

The issuer of these bonds is shielded against the risk of currency fluctuation, typically associated with borrowing in foreign currency. Besides helping in diversifying funding sources, the costs of borrowing via masala bonds could also turn out to be lower than domestic markets.

Where can these bonds be issued and who can subscribe?

The Rupee denominated bonds can only be issued in a country and subscribed by a resident of such country that is a member of financial action task force and whose securities market regulator is a member of International Organisation of Securities Commission.

While residents of such countries can subscribe to the bonds, it can also be subscribed by multilateral and regional financial institutions where India is a member country.

What is the minimum maturity period of such bonds?

According to RBI, the minimum maturity period for Masala Bonds raised up to Rupee equivalent of USD 50 million in a financial year should be 3 years and for bonds raised above USD 50 million equivalent in INR per financial year should be 5 years.

The conversion for such bonds will happen at the market rate on the date of settlement of transactions undertaken for issue and servicing of the bonds, including its redemption.

National Agricultural Education Policy**Polity & Governance****Why is it in news?**

The government of India is going to bring the country's **first National Agriculture Education Policy**. **The first National Agricultural Education Policy is set to bring academic credit banks and degree programmes with multiple entry and exit options to the 74 universities focussed on crop sciences, fisheries, veterinary and dairy training and research.**

Highlights

The process for formulating the **National Agricultural Education Policy** was started about two months ago, after the release of the **National Education Policy (NEP) 2020**.

Earlier, the Prime Minister had pitched for **taking farm education to middle school level**, saying necessary reforms have been made in this regard in the NEP 2020.

Agricultural Education Policy to be Aligned with NEP 2020:**Academic Credit Banks:**

These may be a service provider available to a desirable student community. It may facilitate the **integration of the campuses and distributed learning systems**, by creating **student mobility within the inter and intra university system**.

It may help in seamlessly **integrating skills and experiences into a credit based formal system** by providing a credit recognition mechanism.

It will **digitally store academic credits** earned from recognised **Higher Education Institutions (HEIs)** and allow for credit redemption in order to be awarded a certificate, diploma or degree.

Experiential Education:

In India, agricultural education is already ahead of its time, and already aligned with the NEP. The NEP wants a **shift to four-year undergraduate degrees**, and agricultural degrees are already four-year programmes.

The NEP mentions **experiential education**, which has been already mandated in agricultural education since 2016.

Experiential education is a **teaching philosophy** that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities.

The **Student READY (Rural Entrepreneurship Awareness Development Yojana) programme** requires all students to undertake a six-month internship, usually in their fourth year, to gain hands-on

training, rural awareness, industry experience, research expertise and entrepreneurship skills.

One **major challenge** is to ensure that experiential learning is made available to all students if the **multiple entry-exit system** gets implemented.

The option of multiple entry and exit provides students with the opportunity to earn a diploma or an advanced diploma, while they are given the choice to re-enter as and when they are able to resume their studies and earn a full college degree.

Issues associated with such a policy

Challenge of Multidisciplinarity:

Agricultural universities have been modelled on the **land grant pattern**, with a focus on research and extension, and deep community connections, driven by the philosophy that farmers need holistic solutions to their problems.

However, in recent years, several **domain specific universities** in horticulture, veterinary science and fisheries sciences have come up. Incorporating humanities and social sciences into these settings could be a big challenge.

Related to the ICAR:

Though **agricultural education is a State subject**, the **Indian Council of Agricultural Research (ICAR – Ministry of Agriculture and Farmers Welfare)** is responsible for the **quality of education** across the country, and expects to continue in a standards-setting role under the new system of higher education regulation proposed by the NEP.

However, it is not clear **whether it will continue in its accreditation and grant making roles** under the new regime.

Pardoning Powers of the Governor

Polity & Governance

Why is it in news?

The Supreme Court has recently said that the investigation into the conspiracy behind Ex-PMs assassination in 1991 need not deter the Governor from deciding the plea for pardon of convicts.

Why need Pardon?

Pardons can be granted when individuals are deemed to have demonstrated that they have "paid their debt to society", or are otherwise considered to be deserving of them.

Pardons are sometimes offered to persons who were either wrongfully convicted or who claim that they were wrongfully convicted.

Pardons are sometimes seen as a mechanism for combating corruption, allowing a particular authority to circumvent a flawed judicial process to free someone that is seen as wrongly convicted.

I. Pardoning Power of President

Article 72 empowers the President the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence. The meaning of these terms is as follows:

Pardon: It removes both the sentence and the conviction and completely absolves the convict from all sentences, punishments, and disqualifications.

Commutation: It denotes the substitution of one form of punishment with a lighter form of punishment. For example, a death sentence may be commuted to rigorous imprisonment.

Remission: It implies reducing the period of the sentence without changing its character. For example, a sentence of rigorous imprisonment for five years may be remitted to rigorous imprisonment for one year.

Respite: It denotes awarding a lesser sentence in place of one originally awarded due to some special fact, such as the physical disability of a convict or the pregnancy of a woman offender.

Reprieve: It implies a stay of the execution of a sentence (especially that of death) for a temporary period. Its purpose is to enable the convict to have time to seek pardon or commutation from the President.

Procedure Followed for Granting Pardon

The process starts with filing a mercy petition with the President under Article 72 of the Indian Constitution.

Such a petition is then sent to the Ministry of Home Affairs for consideration which is then consulted with the concerned State Government.

After the consultation, recommendations are made by the Home Minister and the petition is sent back to the President.

II. Governor

Similarly, as per article 161: Governor of a State has the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence against any law.

It must be relating to a matter to which the executive power of the state extends.

Please note that President can grant pardon to a person awarded death sentence. But a governor of a state does not enjoy this power.

Difference between Pardoning Powers of Governor and the President

Pardoning Power of the President Pardoning Power of the Governor

He can pardon a sentence of the convict given by the court-martial or the military court . Governor does not have the power to pardon the sentence inflicted by the court-martial on the convict

The President can also pardon the death sentence through commutation or in its entirety. Governor cannot pardon the death sentence even if the said sentence has been prescribed under the state law. However, he can suspend, remit or commute the death sentence by using these pardoning powers.

President's pardoning powers are granted for the cases where the convict has committed an offence against a Union law. Governor' pardoning powers are granted for the cases where the convict has committed an offence against a state law.

Judicial Stand on Pardoning Powers

In Maru Ram v Union of India case (1980), the constitutional bench of the Supreme Court of India held that the power under Article 72 is to be exercised on the advice of the Central Government and not by the President on his own at his discretion. And that the advice of the Government is binding on him.

The Supreme Court in Epuru Sudhakar v Ors. case (2006) to rule out any case of arbitrariness or executive mala fide upheld that the granting of clemency by the President or Governor can be challenged in court on various grounds such as, the order has been passed without application of mind, or the order is mala fide, or the relevant material has been kept out of consideration.

Difference Between Pardoning Powers of President And Governor

The scope of the pardoning power of the President under Article 72 is wider than the pardoning power of the Governor under Article 161 which differs in the following two ways:

The power of the President to grant pardon extends in cases where the punishment or sentence is by a Court Martial but Article 161 does not provide any such power to the Governor.

The President can grant pardon in all cases where the sentence given is the sentence of death but the pardoning power of the Governor does not extend to death sentence cases.

Regulation for Over-The-Top(OTT) Platform

Polity & Governance

Why is it in news?

The Union government has brought Over The Top (OTT) platforms, or video streaming service providers under the ambit of the Ministry of Information and Broadcasting (MIB).

About the Regulation:

The Information and Broadcasting Ministry is nudging the platforms to come up with a **self-regulatory body on the lines of the News Broadcasting Standards Authority.**

In January, eight video streaming services had signed a **self-regulatory code** that laid down a set of guiding principles for the content on these platforms.

The move was to **pre-empt any attempt by the government to impose censorship.**

The negative list will include **few non-negotiables that will be prohibited.** This will be basic things like ensuring that the Indian map is depicted correctly, to ensure that women are not depicted in a denigrating manner.

The ministry said that the list would in no way curtail the freedom of expression or stop the content makers from criticizing the government.

A self-regulatory body is also being thought about, drawing members from among themselves like the News Broadcasting Standards Authority(NBSA). The body will not be expected to do any pre-censorship of the content



The self-regulatory code adopted by the OTTs:

The code adopted by the OTTs in January prohibited five types of content

1. Content which deliberately and maliciously **disrespects the national emblem or national flag**.
2. Anything visual or a storyline that **promotes child pornography**.
3. Any content that "maliciously" intends to **outrage religious sentiments**.
4. Content that "deliberately and maliciously" promotes or encourages **terrorism**.
5. Any content that has been **banned for exhibition or distribution by law or a Court**.

The need for Regulation of Online Video Streaming Content:

According to new findings by market research firm Velocity MR, Post the telecom regulator (TRAI) new tariff regime, **as many as 80% of people are expected to switch to online streaming platforms such as Amazon Prime, Netflix, and Hotstar**.

The Telecom Regulatory Authority of India (Trai) has recently introduced a new tariff regulation in an aim to allow subscribers to pay for only those TV channels which they wish to watch.

Certain broadcasters are airing content on their video streaming platforms for free, while the same content is chargeable on DTH and cable networks, posing a threat to the latter.

The Ministry of Health observed a **violation of anti-tobacco rules by these online video streaming platform**.

Over The Top Media Services:

Over the top (OTT) media service is a streaming media service offered directly to viewers over the Internet.

OTT bypasses cable, broadcast and satellite television platforms that traditionally act as a controller or distributor of such content

- **Certiorari** -re-examination of an order given by judicial, quasi-judicial or administrative authorities.
-

Types of Content:

OTT television, usually called online television or internet television or streaming television. This signal is received over the internet or through a cell phone network, as opposed to receiving the television signal from a terrestrial broadcast or satellite. Access is controlled by the video distributor, through either an app or a separate OTT dongle or box, connected to a phone, PC or television set.

OTT messaging is defined as instant messaging services or online chat provided by third parties, as an alternative to text messaging services provided by a mobile network operator. Examples-WhatsApp, Viber, WeChat, Skype, Telegram and Google Allo.

OTT voice calling, usually called VOIP, as provided by Skype, WeChat, Viber, and WhatsApp use open internet communication protocols to replace and sometimes enhance existing operator-controlled services offered by mobile phone operators.

Draft Data Centre Policy 2020

Polity & Governance

Why is it in news?

Recently, the Ministry of Electronics & Information Technology (MeitY) released the **Draft Data Centre Policy 2020**.

Why we need for Data Centre Policy 2020?

India is witnessing a **transition from an emerging to a developed market economy** and digital is slated to play a key role in this journey.

The **Digital Sector forms the bedrock for providing better services to citizens**, enabling social and financial inclusion, enhancing productivity and helping create a connected ecosystem.

The **size of the digital economy in India** is estimated to grow from \$ 200 billion in 2017-18 to a staggering \$ 1 trillion by 2025.

The Draft Data Centre Policy of 2020 seeks to **address some of the challenges faced by the sector** in order to become a global data centre hub.

The size of the digital population in India and the **growth trajectory of digital economy necessitate a strong growth of Data Centres**, which has the potential to fulfil the growing demands of the country.

The need for Data Centre infrastructure within the boundaries of the country is further necessitated by the **data localization provisions** of proposed Data Protection Act.

The need for Data Centre infrastructure in the country already opens up a **potential opportunity for investments** of the order of USD 4.9 billion by 2025.

Key Provisions of Data Centre Policy 2020

Providing Infrastructure Status to the Data Centre Sector

The Policy argues that the **Data Centre Sector** will be able to **access credit more easily** by designating data centres as "**infrastructure**" as opposed to "industry".

The **Data Centres** would also be designated as an **essential service under the law**, much like telecom networks.

Simplify clearances for setting up Data Centres in India

The **clearances** required to set-up Data Centres/ Data Centre parks in the country shall be **rationalised**.

The policy provides **institutionalisation of processes for granting single window clearance**, in a time bound manner by State Governments/UTs.

Data Centre Incentivization Scheme (DCIS)

A scheme will be formulated to provide "**fiscal and non-fiscal**" incentives to data centres, indicating tax breaks for the sector.

Land parcels

The states and union territories will be encouraged to **provide land parcels for Data Centre Parks**, along with the municipal supplies that this would entail, like water, electricity and so on.

Robust and cost-effective backhaul

The ministry would work with the Department of Telecommunications to make sure that **data centres have access to fibre bandwidth, through utility corridors, common service ducts, infrastructure sharing, a Dial Before You Dig Policy**, and improved international connectivity and cost of bandwidth.

Schemes and Skilling proposed under Data Centre Policy 2020

Data Centre Economic Zone Scheme (DCEZ): The DCEZ scheme is proposed as a central sector scheme to set up four data centre economic zones with the most conducive non-IT and IT infrastructure, connectivity, power and regulatory environment.

Data Centre Facilitation Unit: The ministry seeks to create a Data Centre Facilitation Unit that will provide "harmonised services" to developers seeking to build data centres or data centre parks.

The DCFU would be the **nodal agency to work under the Inter-Ministerial Empowered Committee** to drive and support the implementation of decisions taken.

Amendment in FCRA Rules

Polity & Governance

Why is it in news?

The Ministry of Home Affairs (MHA) has relaxed FCRA norms for farmer, student, religious and other groups who are not directly aligned to any political party to receive foreign funds if the groups are not involved in "active politics".

New Rules:

Norms for farmers, students, religious and other groups who are not directly aligned to any political party to receive foreign funds, if the groups are not involved in active politics, has been relaxed.

FCRA registrations have been made more stringent.

Any organisation that wants to register itself under FCRA shall be in existence for three years and should have spent a minimum amount of 15 lakh on its core activities for the benefit of society during the last three financial years.

However, the Central Government in exceptional cases or in cases where a person is controlled by the Central Government or a State Government may waive the conditions.

Office bearers of NGOs or organisations seeking registration under the FCRA are required to submit a specific commitment letter from the donor indicating the amount of foreign contribution and the purpose for which it was being given.

Political Groups:

A new clause has been inserted which says that groups mentioned in Clause V and VI will only be considered a political group by the Centre if they participate in "active politics or party politics".

Earlier, the rules on said clauses dealt with "guidelines for the declaration of an organisation to be of a political nature, not being a political party", and the Central government could specify an organisation as that of political nature based on six criteria.

Clause V of Rule 3 (FCRA rules 2011) qualified a political group as organisations of farmers, workers, students, youths based on caste, community, religion, language or otherwise, which is not directly aligned to any political party, but whose objectives as stated in the memorandum of association, or activities gathered through other material evidence, include steps towards advancement of political interests of such groups.

The other 2011 clause (VI) qualified a group as political if the organisation by whatever name habitually engages itself in or employs common methods of political action like rasta-roko, jail-bharo, rail-roko, bandh or hartal in support of public causes.

Kerala, Tamil Nadu and Goa best-governed states in India: PAI Index

P & G

Why is it in news?

Recently, the **Public Affairs Centre (PAC)** has released the **Public Affairs Index (PAI)-2020**.

Key Highlights of Public Affairs Index-2020

Kerala was adjudged the **best-governed state** in the country while **Uttar Pradesh** ended at the **bottom** in the large states category.

The **four southern states**, namely, **Kerala** (1.388), **Tamil Nadu** (0.912), **Andhra Pradesh** (0.531) and **Karnataka** (0.468) stood in the **first four ranks** in the large state category in terms of governance.

Uttar Pradesh, Odisha and **Bihar** were at the **bottom of the ranking**, scoring negative points in the category i.e. -1.461, -1.201 and -1.158 points respectively.

In the **small state category**, **Goa** ranked **first** with 1.745 points, followed by **Meghalaya** (0.797) and **Himachal Pradesh** (0.725).

The **worst performers** who scored negative points are **Manipur** (-0.363), **Delhi** (-0.289) and **Uttarakhand** (-0.277).

Chandigarh emerged the **best governed union territory** in the category of UTs with 1.05 PAI points, followed by **Puducherry** (0.52) and **Lakshadweep** (0.003).

Dadar and Nagar Haveli (-0.69), **Andaman, Jammu and Kashmir** (-0.50) and **Nicobar** (-0.30) were the least performers.



What is Public Affairs Index (PAI)?

According to the PAC, the **governance performance** is analysed in the context of **sustainable development** defined by three pillars of **equity, growth and sustainability**.

It is a **data driven platform** to rank the **30 States of India** from the lens of governance.

The Public Affairs Centre has developed PAI as a **unique statistical tool to evaluate the performance of governance** in the States.

Draft Rules under Code on Social Security

Polity & Governance

Why is it in news?

Ministry of Labour & Employment notifies Draft rules under the Code on Social Security, 2020

About Draft rules

In a move aimed at enabling unorganised workers, gig workers and platform workers to avail social security benefits under the Social Security Code, the labour ministry has provided for their self registration on the government portal. The provisions are part of the draft rules framed by the labour ministry under the Code on Social Security, 2020. The draft rules provide for operationalization of provisions in the Code on Social Security, 2020 relating to Employees' Provident Fund, Employees' State Insurance Corporation, Gratuity, Maternity Benefit, Social Security and Cess in respect of Building and Other Construction Workers, Social Security for Unorganised Workers, Gig Workers and Platform Workers.

What are the specifics?

The ministry has already **unveiled draft rules under the Industrial Relations Code** while it hopes to put the draft rules under the **Code on Occupational Safety, Health and Working Conditions** shortly. The **aim is to roll-out the four codes from April 1, 2021**.

The **draft rules provide for Aadhaar based registration** including self-registration by unorganised workers, gig workers and platform workers on the portal of the central government.

The rules also provide for the **manner of payment of contribution** by the aggregators through self-assessment.

Provision has also been made in the rules regarding gratuity to an employee who is on fixed term employment, there is a provision for single electronic registration of an establishment including cancellation of the registration in case of closure of business activities.

Besides, provision has also been made regarding manners and conditions for **exiting an establishment from EPFO and ESIC coverage**.

The **procedure for self-assessment and payment of cess** in respect of building and other construction workers has been elaborated in the rules.

The rate of Interest for delayed payment of such cess **has been reduced from 2% every month or part of a month to 1%**.

Under the existing rules, the assessing officer has the power to direct that no material or machinery can be removed or disturbed from the construction site.

Payment of contribution by the aggregators: The rules have also provided for the manner of payment of contribution by the aggregators through self-assessment

Social security schemes for unorganised sector:

In order to provide social security benefits to the workers in the unorganised sector, the Government has enacted the **Unorganised Workers Social Security Act, 2008**. Some of the welfare schemes for unorganised workers stipulated under this act are:

1. The **National Social Assistance Programme (NSAP)**, launched in 1995 is a Centrally Sponsored Scheme of the Government of India that provides financial assistance to the elderly, widows and persons with disabilities in the form of social pensions.
2. **Janani Suraksha Yojana (JSY)**, launched in 2005, is a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neonatal mortality by promoting institutional delivery among the poor pregnant women.
3. **Rajiv Gandhi Shilpi Swasthya Bima Yojana** aims at financially enabling the artisans' community to access to the best healthcare facilities in the country. This scheme covers not only the artisans but his wife and two children also.
4. **National Scheme of Welfare of Fishermen** aims at providing better living standards for fishermen and their families and social security for active fishers and their dependants.
5. **Aam Admi Bima Yojana**, launched in 2013, is a social security scheme aimed at unorganised sector workers aged between 18 and 59 years, which offers a cover of Rs 30,000.
6. **Rashtriya Swasthya Bima Yojana (RSBY)**, launched in 2008, aims to provide health insurance coverage to the unrecognised sector workers belonging to the BPL category and their family members. It provides for inpatient medical care of up to ₹30,000 per family/year in public as well as empaneled private hospitals.

Atal Pension Yojna (APY)

Under the APY, subscribers would receive a fixed minimum pension at the age of 60 years, depending on their contributions, which itself would vary on the age of joining the APY.

The Central Government would also co-contribute 50 percent of the total contribution or Rs. 1000 per annum, whichever is lower, for a period of 5 years, who are not members of any statutory social security scheme and who are not Income Tax payers.

The pension would also be available to the spouse on the death of the subscriber and thereafter, the pension corpus would be returned to the nominee.

The minimum age of joining APY is 18 years and maximum age is 40 years.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):

Under PMJJBY, life insurance of Rs. 2 lakh would be available on the payment of premium of Rs. 330 per annum by the subscribers.

The PMJJBY will be made available to people in the age group of 18 to 50 years having a bank account from where the premium would be collected through the facility of "auto-debit".

Pradhan Mantri Suraksha Bima Yojana (PMSBY):

Under PMSBY, the risk coverage will be Rs. 2 lakh for accidental death and full disability and Rs. 1 lakh for partial disability on the payment of premium of Rs. 12 per annum.

The Scheme will be available to people in the age group 18 to 70 years with a bank account, from where the premium would be collected through the facility of "auto-debit".

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Yojana

Under the scheme, the government has promised a direct payment of Rs. 6000 in three equal instalments of Rs. 2000 each every four months into the Aadhar bank accounts of eligible landholding Small and Marginal Farmers (SMFs) families.

Pradhan Mantri Kisan Mandhan Yojana:

Honourable Prime Minister Narendra Modi recently launched a pension scheme for farmers from Ranchi, Jharkhand.

Under the scheme, farmers between 18 and 40 years of age will get Rs **3,000 monthly pension after reaching 60**.

The scheme has an outlay of Rs 10,774 crore for the next three years.

All **small and marginal farmers (with less than 2 hectares) who are currently between 18 to 40 years** can apply for the scheme.

Registration for the farmers' pension scheme was started on August 9, 2019.

Life Insurance of India (**LIC**) has been appointed **insurer** for this scheme.

The farmers will have to make a **monthly contribution of Rs 55-200**, depending on the age of entry, in the pension fund till they reach the retirement date.

This is an **optional** scheme.

The government started registrations for the PradhanMantriKisanMaan-DhanYojana (PM-KMY) on August 9, 2019.

The enrolment for the voluntary scheme is being **done through the Common Service Centres (CSCs)** located across the country.

No fee is charged for registration under the scheme.

The Centre pays Rs 30 to CSC for every enrolment to ensure that the scheme witnesses maximum coverage.

Pradhan Mantri Laghu Vyapari Mandhan Yojana, 2019

The new scheme that offers pension coverage to the trading community was launched from Jharkhand.

Under the scheme, all **shopkeepers, retail traders and self-employed persons** are assured a minimum monthly **pension of Rs. 3,000/-** month after attaining the age of **60 years**.

All small shopkeepers and self-employed persons as well as the retail traders with **GST turnover below Rs. 1.5 crore and age between 18-40 years**, can enrol for this scheme.

The scheme would benefit more than 3 crore small shopkeepers and traders.

The scheme is based on **self-declaration** as no documents are required except **Aadhaar and bank account**.

Interested persons can enrol through CSCs across the country.

To be eligible, the applicants should **not be covered under the National Pension Scheme, Employees' State Insurance Scheme and the Employees' Provident Fund or be an Income Tax assessee**.

The **Central Government will make matching contribution**(same amount as subscriber contribution) i.e. equal amount as subsidy into subscriber's pension account every month.

Five crore traders are expected to join the scheme in the next three years.

Kerala Police Act amendment put on hold

Polity & Governance

Why is it in news?

The government of Kerala has put on hold the implementation of the Kerala Police Act Amendment after facing massive backlash over the same.

Background:

As per **Kerala Chief Minister** due to concerns raised by the supporters of the **Left Democratic Front**, the law will not be amended.

Earlier, the Kerala Government had decided to amend the Kerala Police Act in an effort to check the **widespread malicious campaigns** through social media and otherwise, which pose a threat to individual freedom and dignity, which are constitutionally ensured to citizens.

About the amendment

The state cabinet recommended the addition of Section 118-A to the Police Act.

This provision punished any kind of '**communication**' including **statements, articles, social media posts**, etc, which **threatens, abuses, humiliates or defames** a person or class of persons.

The person making this communication has to know that what they are saying is false, and that it will cause '**injury to the mind, reputation or property**' of the targeted person or class of persons.

The punishment for this **offence is up to three years' imprisonment and/or a fine up to Rs 10,000**. Even those who had just shared a post could be punished.

The ordinance was stated to come into force immediately, and like any other ordinance, had a **shelf life of six months** before it lapsed, though the state legislative Assembly could always pass a similar law during that period to make it permanent.

Issues with the law

Digital rights activists raised concerns about it. The **Internet Freedom Foundation** made a representation to the Kerala government asking it to scrap the idea, pointing out that it could criminalise online speech because of its '**vague expressions**' and that it was '**liable to subjective and arbitrary application.**' Some examples are:

- expanding who could complain** (persons rather than individuals, meaning companies and even deities),
- added vague terms** like **abusing and humiliating** (instead of restricting to those harming the reputation of an individual, which at least was connected to defamation) and
- making Section 118A a cognisable offence**, i.e, one that the police could investigate without a magistrate getting to scrutinise the complaint and then directing a probe (which is the case with criminal defamation, for instance).

The ordinance was actually **extremely similar to the old Section 66A of the Information Technology Act**, that was **struck down by the Supreme Court** in the **Shreya Singhal case in 2015** as overbroad and unconstitutional.

Concerns raised by the petitioners

Dresses a private wrong as a criminal act: The provision has been made cognisable, that is, permitting a police officer to arrest a person without a warrant. The provision jeopardises the doctrine of proportionality.

Violates Article 19(1)(a): Section 118A is violative of Article 19(1)(a) of the Constitution on the ground that it amounts to an unreasonable restriction on free speech and expression. **In Shreya Singhal v. Union of India**, the Supreme Court declared that probability of certain categories of speech being an insult, inconvenience and nuisance cannot be a reasonable restriction on speech.

Resurrection of Section 66A of the Information Technology Act, 2000: The Kerala Government itself had admitted in a press release that the new provision was being introduced to fill the legislative void created due to Supreme Court striking down **Section 66-A of the Information Technology Act, 2000**. As per the petitioners the terms used in the legislation, the overall vagueness of the provision, **and the offence penalised bear similarity to Section 66A** and the erstwhile **section 118(d) of the Kerala Police Act** which had also been also struck down in ShreyaSinghal case.

Outside the scope of the legislation: Another ground raised is regarding how the provision is not in consonance with the **object of the Kerala Police Act**. By definition, the Kerala Police Act **seeks to regulate and govern the police force in the State**. Penalising an essentially private offence in an Act that is meant to regulate the police force goes beyond the legislative competence, it has been submitted.

National Portal for Transgender Persons

Polity & Governance

Why in news?

Union Minister for Social Justice & Empowerment e-launched a 'National Portal for Transgender Persons' and e-inaugurated a 'GarimaGreh'.

Features of the portal

Through this portal transgender persons can apply for gender identity certificates online

It helps the transgender person to get the I-Card without any physical interface and without having to visit any office

Through the Portal, they can monitor the status of their application that ensures transparency in the process.

The issuing authorities are also under strict timelines to process the applications and issue certificates and identity cards without any necessary delays.



Once the Certificate and I-card are issued, the applicant can download them from the Portal itself.

In case of delay or rejection, the applicant has the options to submit grievances through the Portal which are forwarded to the concerned person and will be resolved at the earliest.

Significance of the portal

This portal will help a lot of people from the community to come forward and get Transgender Certificate and Identity Cards as per their **self-perceived identity** which is an important provision of The Transgender Persons (Protection of Rights) Act, 2019.

The Transgender Persons (Protection of Rights) Act, 2019

It was passed on 26 November 2019 and came into effect on 10th January 2020. It allows persons to self-perceive their gender identity, provides for the identification of transgender persons, and confers them with certain rights and benefits.

To implement the provisions of the Act the Ministry of Social Justice & Empowerment issued the Transgender Persons (Protection of Rights) Rules,

The Rules specify the manner, form and process by which persons may be recognised as transgender.'

The Rules ensure that comprehensive welfare measures reach the Transgender Community and help them come into the mainstream of the Society.

The right to self-perceived gender identity and the procedure to issue the Transgender certificate and Identity card has been defined in the Rules.

ATAL Academy Faculty Development Programme(FDP)

Polity & Governance

Why in news?

Recently, the Union Education Minister inaugurated 46 online AICTE Training and Learning (ATAL) Academy Faculty Development Programmes (FDPs).

About the academy

The first ATAL Academy and NWRO was announced with establishment of ATAL Academy in the country at Jaipur, Vadodara, Guwahati & Trivandrum by the then Hon'ble Union Minister, Human Resource Development(now Education Minister) on 24.9.2018

Objectives

To plan and help in imparting quality technical education in the country

To support technical institutions in fostering research, innovation and entrepreneurship through training in various emerging areas

To stress upon empowering technical teachers & technicians using Information & Communication Technology

To utilize SWAYAM platform and other resource for the delivery of trainings.

To provide a variety of opportunities for training and exchange of experiences.

Such as workshops, Orientations, learning communities, peer mentoring and other Faculty development programmes.

To support policy makers for incorporating training as per requirements



Beneficiaries of Roshni Act move SC

Polity & Governance

Why is it in in news?

The J&K High Court has declared Roshni Act "illegal, unconstitutional and unsustainable" and a CBI probe has been ordered into the allotment of land under this law.

What is the Roshni Act?

The J&K State Lands (Vesting of Ownership to the Occupants) Act, 2001 is popularly known as the Roshni Act.

It envisaged the transfer of ownership rights of state land to its occupants, subject to the payment of a cost, as determined by the government.

It set 1990 as the cutoff for encroachment on state land.

The government's target was to earn Rs 25,000 crore by transferring 20 lakh kanals (one-eighth of an acre) of state land to existing occupants against payment at market rates.

The government said the revenue generated would be spent on commissioning hydroelectric power projects, hence the name "Roshni".

Recent Controversy

In October this year, the High Court held the Roshni Act as 'unconstitutional'.

The court also directed the UT government to make public names of those who grabbed the land under the scheme.

Last week, the UT government began publishing the names of beneficiaries on its websites.

The first set of names included prominent politicians and their relatives, hotels, and a trust connected each to the dominant parties of the Gupkar declaration.

Why it was scrapped?

In 2009, the State Vigilance Organisation registered an FIR against several government officials for alleged criminal conspiracy to illegally possess and vest ownership of state land to occupants who did not satisfy criteria under the Roshni Act.

In 2014, a report by the Comptroller and Auditor General (CAG) estimated that against the targeted Rs 25,000 crore, only Rs 76 crore had been realised from the transfer of encroached land between 2007 and 2013, thus defeating the purpose of the legislation.

The report blamed irregularities including arbitrary reduction in prices fixed by a standing committee, and said this was done to benefit politicians and affluent people.

A scam being busted

Investigations into the land transfers subsequently found that land in Gulmarg had been given over to ineligible beneficiaries.

However several government officials illegally possessed and vested ownership of state land to occupants who did not satisfy criteria under the Roshni Act.

A report by the CAG estimated that against the targeted Rs 25,000 crore, only Rs 76 crore had been realized from the transfer of land between 2007 and 2013, thus defeating the purpose.

The report blamed irregularities including arbitrary reduction in prices fixed by a standing committee, and said this was done to benefit politicians and affluent people.

Minor Forest Produce (MFP)

Polity & Governance

Why in news?

Recently, the Union government included some Minor Forest Produce items under Minimum Support Price.

What is MFP?

Section 3(1)© of Forest Rights Act 2006 confers ownership rights over minor forest produces (MFP) to forest dwelling STs and Other Traditional Forest Dwellers

Section 2(I) of FRA Act defines a Minor Forest Produce (MFP) as all non-timber forest produce of plant origin and includes bamboo, brushwood, stumps, canes, Tusser, cocoon, honey, waxes, Lac, tendu/kendu leaves, medicinal plants and herbs, roots, tuber and the like.

Thus, the definition of "minor forest produce" includes bamboo and cane, thereby changing the categorization of bamboo and cane as "trees" under the Indian Forest Act 1927.

The Forest Rights Act 2006 **defines forest rights as inclusive of 'Right of ownership, access to collect, use and dispose of minor forest produce which have traditionally been collected within or outside village boundaries'**.

Individuals, communities and gram sabhas having rights under this particular section of the Act will not only have the rights to use but also rights of ownership over MFPs.

Transit Permits

The Gram Sabha has the authority to regulate transit permits for MFPs where rights have been recognised under FRA. The FR Rules (as amended on 6.9.2012) provide that the transit permits for transportation of minor forest produce shall be issued by the Committee constituted by the Gram Sabha under Rule 4(1)(e) or the person authorised by the Gram Sabha.

The Rules further provide that all decisions of this Committee pertaining to issue of transit permits shall be placed before the Gram Sabha for approval.

MSP for MFP

The Government of India has launched a central sector scheme for marketing of Minor Forest Produce through Minimum Support Price (MSP) and development of value chain to ensure fair monetary returns to MFP gatherers for their efforts in collection, primary processing, storage, packaging, transportation etc.

The scheme envisages fixation and declaration of Minimum Support Price for the selected MFP based on the suggestions /inputs received from Tribal Cooperative Marketing Development Federation of India (TRIFED)

Recusal of Judge

Polity & Governance

Why in news?

Recently Justice Lalit recused himself from hearing pleas seeking against Andhra Pradesh CM Jagan Mohan

What is meant by recusal ?

Recusal is "removal of oneself as a judge or policymaker in a particular matter, especially because of a conflict of interest".

It has been a practice in the Supreme Court that in serious issues like inter-state water disputes, judges from the state concerned do not sit on the bench to decide them.

The right to recuse is given to the discretion of the judges.

A judge should ideally recuse from a proceeding in which his impartiality might reasonably be questioned due to the possibility of personal bias or prejudice or if he has been a lawyer or judge in the matter at some stage.

NyayaBandhu app

Polity & Governance

Why in news?

Department of Justice launches the iOS version of the NyayaBandhu Application and its onboarding on UMANG platform (MeiTY).

About the app

NyayaBandhu mobile application was launched by the Union Minister for Law and Justice in February, 2019 to **ensure empowerment of the common man by popularizing technology to a level** that it becomes an instrument of change.

Based on the premise of using technology to enhance access to justice for all, the NyayaBandhu app will allow marginalised individuals (referred to as "Applicants"), seeking quality legal advice and counsel, to connect via a mobile application with "Advocates" (**Pro Bono legal service**) who have volunteered their time and services on this platform.

The NyayaBandhu application has been developed in collaboration with CSC eGovernance Private India Limited and is available in Hindi and English.



About the programme

The Pro Bono Legal services programme was launched by the Minister for Law & Justice in April 2017.

An initiative of the Department of Justice, the programme is aimed at fulfilling the Department's critical mandate of enhancing "access to justice" for marginalised sections of the society and the State's constitutional obligation of providing "free legal aid" for all.

The programme seeks to put in place an institutional structure which will promote pro-bono culture in India.

On one hand, the programme would facilitate delivery of quality legal assistance to the marginalised communities, on the other hand it would ensure that lawyers who volunteer their valuable time and service, towards this public service, are duly recognized for their contribution.

Pro Bono Legal Services are, by nature, free of cost.

Eligibility of the scheme

Beneficiaries or Applicants, in order to avail the benefits under this programme must belong to one of the categories mentioned under Section 12 of The Legal Services Authority Act of 1987. These include:

Member of a Scheduled Caste

Member of a Scheduled Tribe

Victim of trafficking in human beings or beggar as referred in article 23 of the Constitution

Woman or a Child

Person with disability

Person in custody

An industrial workman

Victim of a mass disaster, ethnic violence, caste atrocity, flood, drought, earthquake or industrial disaster

Person with annual income less than as specified under law

Haryana clears Bill on Right to Recall Panchayat Member

Polity & Governance

Why is it in news?

The Haryana Assembly passed the Haryana Panchayati Raj (Second Amendment) Bill, 2020.

About:

The bill provides the right to recall members of Panchayati Raj institutions to those who elected them.

To recall a representative, 50% members of a ward or gram sabha have to give in writing that they want to initiate proceedings.

This will be followed by a secret ballot, in which their recall will require two-third members voting against them.

What is Right to recall?

Recall is a process whereby the electorate has the power to remove the elected officials before the expiry of their usual term.

It confers on the electorate the power to 'de-elect' their representatives from the legislature through a direct vote.

Key benefits:

Increase the accountability of politicians who are underperforming or are misusing their office. Engender direct democracy in our country.

Limit campaign spending, as morally skewed candidates weigh the risk of being recalled.

India has no legislation for the right to recall MPs and MLAs. However, it exists at local level bodies in Madhya Pradesh, Bihar and Chhattisgarh.

Right to recall is present in various jurisdictions across the world, like, United States, Canada, Venezuela, Switzerland etc.

PAKISTAN GRANTS PROVISIONAL PROVINCIAL STATUS TO GILGIT-BALTISTAN (GB)

P & G

Why in news?

Pakistan announced to elevate GB to the status of a full-fledged province with all constitutional rights.

About GILGIT-BALTISTAN

Gilgit-Baltistan was a **part of erstwhile princely state of Jammu and Kashmir**, but has been under Pakistan's control since November 4, 1947, following invasion of Kashmir by tribal militias and Pakistan army.

In 2018, **Gilgit-Baltistan** order was passed which aimed at **incorporating Gilgit-Baltistan as its fifth province** and to integrate GB with rest of federal structure of Pakistan by legislative, judicial and administrative measures.

Since 1949, it has been put under direct control of Pakistan federal government.

Baluchistan, Khyber-Pakhtunkhwa, Punjab and Sindh being other four provinces of Pakistan.



Why does Pakistan want Gilgit-Baltistan as the fifth province?

In **November 1947**, **Instrument of Accession** was signed between the **erstwhile ruler of J&K and India**, but **Pakistan did not accept** the accession and Pakistan took **administrative control** of the territory.

Strategic Importance of the region-

It is located at the **confluence** of **three geographical regions** southern, central and eastern Asia.

It is **connected** to **5 countries** namely **Afghanistan, Tajikistan, Pakistan, India and Tibet (China)**.

It has cardinal geopolitical importance, and growing Chinese interest in recent years has elevated the region's import in the regional strategic landscape.

The region is minerally rich and has **50-100 gold and uranium mines** according to the report of the **Mineral Department of the PoK**.

Three glaciers which are **longest outside the Polar region** are found here.

China has **proposed heavy investments** in the region through **CPEC** and **other infrastructure projects**. So, Pakistan has been trying to ensure **constitutional and legal guarantees** to the region due to **its strategic importance**.

India's response to the recent moves of Pakistan

India's **official position** is **opposed** to a change **in the status quo** in both parts of PoK.

It stated that Pakistan's move to name Gilgit-Baltistan as its fifth province is meant to "**camouflage its illegal occupation**" of the area.

It called upon Pakistan to immediately **vacate all areas** under **its illegal occupation** and said that it "**firmly rejects**" Pakistan's attempt "to bring material changes to a part of Indian territory, under its illegal and forcible occupation.

It mentioned that the region was an integral part of India **by virtue of the legal**, complete and irrevocable accession of Jammu and Kashmir to the Union of India in 1947.

What do the people of Gilgit-Baltistan want?

The people have been **demanding for years** for the **same constitutional rights** as **Pakistani citizens** have.

Around **1.5 million residents** of the region are **Shias** and are angry against Pakistan for unleashing extremist sectarian militant groups against Shia people.

There is virtually no connection with India and some have in the past demanded a merger with PoK, but the people of G-B have no real connection with Kashmir either.

There is a **movement for independence**, but it has very little traction.

ACADEMIC FREEDOM INDEX

Polity & Governance

Why in news?

India's dismal score on the Academic Freedom Index (AFI) reflects the issues plaguing the country's education system.

About the report

Index try to **quantify the freedom of university scholars** to debate politically and culturally controversial topics without fearing for their safety or studies, and without any external influence on the institutions' affairs, based on a combination of factual data and the assessments of 1,800 academicians worldwide.

It is the result of a collaborative effort between researchers at **Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)** and the **V-Dem Institute, the Scholars at Risk Network, and the Global Public Policy Institute**.

The index scores countries between **0 (worst) and 1 (best)**.

Highlights of the report

The index helps to define each country's academic freedom level and the researchers asserted that the primary goal behind this idea is to comprehend a university's attractiveness in addition to its infrastructure, research output, etc.

The maximum value of the index is 1.

India has an AFI of 0.352, comparable to the scores of Saudi Arabia and Libya. Countries that scored higher than India are Pakistan (0.554), Brazil (0.466), Ukraine (0.422), Somalia (0.436) and Malaysia (0.582). Uruguay and Portugal top the list with scores of 0.971 each, followed closely by Latvia and Germany. At the bottom are North Korea (0.011), Eritrea (0.015), Bahrain (0.039) and Iran (0.116).

The AFI used eight components to evaluate the scores:

- Freedom to research and teach
- Freedom of academic exchange and dissemination
- Institutional autonomy
- Campus integrity
- Freedom of academic and cultural expression
- Constitutional protection of academic freedom
- International legal commitment to academic freedom under the International Contract on Economic, Social and Cultural Rights
- Existence of universities

Reasons behind India's poor performance

India has not done well in components like institutional autonomy, campus integrity, freedom of academic and cultural expression and constitutional protection of academic freedom.

Most universities in the country are subjected to unwanted interference from governments in both academic and non-academic issues.

Majority of appointments, especially to top-ranking posts like that of vice-chancellors, pro vice-chancellors and registrars, have been highly politicised.

Such political appointments choke academic and creative freedom, and also lead to corrupt practices, including those in licensing and accreditation, thus promoting unhealthy favouritism and nepotism in staff appointments and student admissions.

This reflects a 'rent-seeking culture' within the academic community.

ON PEOPLE'S ALLIANCE FOR GUPKAR DECLARATION

Polity & Governance

ABOUT the declaration ?

The formation of the alliance follows the spirit of the Gupkar Declaration that was adopted on 4 August 2019, a day before the changes in the structure of the state were announced in Parliament.

Amidst the rumours that the Government of India was going to take some unprecedented steps in relation to J&K, the representatives of six mainstream parties of Kashmir had resolved that modification, abrogation of Article 35A and Article 370, or unconstitutional delimitation, or trifurcation of the state would be an aggression against the people of Jammu, Kashmir and Ladakh. It was therefore resolved that all parties be united to protect and defend identity, autonomy and the special status of J&K.

Why was the declaration signed?

On August 4, 2019, the first Gupkar declaration was signed after an all-party meeting at the Gupkar Road residence of NC supremo Farooq Abdullah.

The signatories were reportedly members of the NC, PDP, CPI(M), Congress, J&K Peoples Conference and Awami National Conference.

The resolution had parties unanimously agreeing to unify in their efforts to protect and defend the identity, autonomy and special status of Jammu and Kashmir.

Just a day after this, on **5 August 2019** however, the central government revoked the special status under Article 370 and split Jammu and Kashmir into two Union Territories.

The Article 35A, which guaranteed specific rights to permanent residents of the former state was also repealed.

What followed was a complete lockdown in J&K, with communications within the then state blocked out.

Senior political leaders from most parties were placed under house arrest.

With most political leaders now released from detention, efforts are on to renew the movement by signing the Gupkar Declaration 2.0.

What is the Gupkar Declaration II?

On 22 August 2020, leaders from the six political parties once again held a meeting and signed the Gupkar II Declaration to renew their resolve to adhere to the 2019 declaration that was signed.

The coming together of six mainline parties is unprecedented in Kashmir politics. Kashmir watchers describe the stand taken by the Kashmir-based parties as "political resistance", but hesitate to call it the "people's alliance".

VALIDITY OF SPECIAL COURTS TO TRY MPs, MLAs

Polity & Governance

Why in news?

A three-judge committee of the Madras High Court has questioned the constitutional validity of setting up Special Courts to exclusively try MPs and MLAs for various crimes, pursuant to the apex court's orders for fast-tracking cases against lawmakers.

About special courts

The Supreme Court had in 2017 asked all states to set up special courts to expedite cases against legislators after noting that a huge number of sitting MP/MLAs had multiple criminal cases against them.

A Special Court shall consist of a single Judge who shall be appointed by the State Government with the concurrence of the High Court.

The numbers

On December 14, 2017, the Central Government constituted 12 special courts.

Accordingly, high courts were directed to transfer cases against MPs and MLAs to such special courts.

The States/UTs where 65 or more such cases are pending were to get a special court, as per the policy introduced by the Centre

As a result, Special Courts were set up in Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal, Delhi and three special courts at magisterial level in Maharashtra, Kerala and Delhi.

Reasons for opposing such courts

The Special Courts should be "offence-centric" and not "offender-centric."

Special Courts can be constituted only by statute and not by 'judicial or executive fiat'.

An MP/MLA, who commits an offense under the **POCSO Act** [or other Special Acts like Prevention of Corruption Act, Narcotic Drugs and Psychotropic Substances Act] can only be tried by a **Special Court** created under the **POCSO Act** [PC Act, NDPS Act].

There cannot be another Special Court exclusively for the trial of an MP/MLA, who commits POCSO offense.

AN ANALYSIS OF VICTIM COMPENSATION SCHEMES IN INDIA

Polity & Governance

The purpose of the criminal justice is **to protect the rights of the individuals, society and state** from the criminals by punishing the accused for violating the law.

While the entire focus of the law is on the offender, to protect his/her rights or to punish him/her; **the victim, more often, is left to fend for himself/herself with little or no assistance** coming his/her way.

What is Victim Compensation?

Victim compensation is a **direct financial reimbursement** to a victim for an expense that resulted from a crime, such as medical costs or lost wages.

Victim Compensation in India

Sections 357 and 357-A of the Code of Criminal Procedure, 1973 lay down the procedure for granting compensation to the victims of crime.

Section 357-A: Each state of the country is to **set up a victim compensation scheme** in consonance with the **Central Victim Compensation Fund Scheme** guidelines.

State schemes are **vastly different from one another** in terms of the number of categories as well as the amount of compensation prescribed under each category.

Under Section 357-A, the state can provide interim compensation as listed under the state's victim compensation scheme, regardless of whether the case has resulted in a conviction.

Section 357: Offender is made to pay compensation.

Where the fine does not form a part of the sentence, the **Supreme Court is empowered under the Section 357 of CrPC to award compensation** and the amount that may be awarded is left entirely to the discretion of the court to decide in each case depending on the facts and circumstances of the case.

So far 24 states and 7 UTs have formulated the Victim Compensation Scheme.

History of victims' rights in India:

The victim became the core of the entire criminal justice system in India after the **United Nation's Declaration of Basic Principles of Crime and Abuse of Power, 1985** came in.

The **compensation for injuries became one of the principal aspects** and considered as an **integral part of 'right to life'** by the Indian judiciary.

Subsequently, the **need to introduce the mechanism of statutory compensation** led to incorporation of **Section 357A in the Code of Criminal Procedure, 1973**.

In 2003, the Malimath Committee report suggested various **reforms to the CrPC, 1973**.

Key suggestion of the committee: Victim should be granted the right to seek fair compensation.

By an amendment to the CrPC in 2008, **Section 357-A was inserted** and a **victim compensation fund** was established.

Provisions under Indian Constitution:

The Indian Constitution enunciates **no specific provision** for victims. However, **Part IV, Directive Principle of State Policy, Art 41** lay down the duty of the state to secure "the right to public assistance in cases of disablement and in other cases of undeserved want".

Part V, Fundamental Duties, Art 51A lay down the duty of the state to "have compassion for living creatures" and "to develop humanism".

These articles have been interpreted in an expansive manner to find support for victims of crimes.

The **right to compensation** has also been interpreted as an **integral part of right to life and liberty under Art. 21 of the Constitution**.

Central Victim Compensation Scheme (CVC):

The Central Victim Compensation Fund (CVC) Scheme was **formed in 2015** with an initial corpus of Rs 200 cr. It prescribed a minimum amount of compensation to be granted to victims.

The scheme is **to enable support to victims of rape, acid attacks, human trafficking and women killed or injured** in the cross border firing.

Objectives of Scheme:

To support and supplement the existing Victim Compensation Schemes notified by States/UT Administrations.

To **reduce disparity in quantum of compensation amount** notified by different States/ UTs for victims of similar crimes.

To encourage States/UTs to **effectively implement the Victim Compensation Schemes (VCS)**.

Continue **financial support to victims** of various crimes especially sexual offences.

Eligibility for compensation:

He/ She should **not have been in receipt of any compensation for such loss or injury from any Government authorities** or any other scheme of the Central / State Government.

The loss or injury sustained by the victim or his dependents should **have caused substantial loss to the income of the family** or requires expenditure beyond his means on medical treatment of such mental/physical injury to the victim.

Where the **offender of the crime is untraceable** or cannot be identified, **but the victim is identifiable**.

Minimum Amount of Compensation:

Compensation for Civilian victims of cross border firing, terrorism and Maoist violence:

Civilian victims of **cross border firing** along the border – Rs 5 lakh

Those who die due to **terrorism or Maoist violence** – Rs 5 lakh

Any civilian who dies anywhere in the country due to terror attack, Naxal violence, firing from across the border, shelling or IED explosion – Rs 5 lakh

Those who receive 50 per cent or more disability or incapacitation due to above reasons – Rs 5 lakh

The compensation amount will be given subject to the condition that no employment has been provided to any of the family members of the victims by the government.

Challenges in implementation of the Scheme:

Loopholes in the Schemes

The Supreme Court in **Nipun Saxena v Union of India (2019)** noting drawbacks of existing schemes, found it fit to direct the **National Legal Services Authority (NALSA)** to frame a scheme for victims of sexual offences, including the offences falling under the **Protection of Children against Sexual Offences Act**.

No entitlement for non-female victims: This pan-India scheme significantly increases the amount of compensation that can be availed by a victim of a sexual offence, but does not entitle non-female victims of serious crimes to receive **greater compensation**.

Same body to assist victim and accused: Lastly, a notable flaw in the victim compensation schemes is that the victim may file an application seeking compensation before the state or district legal services authority. This is, however, the very same authority that is meant to provide assistance to the accused in getting legal aid.

Conflicting role: Thus, at present, the legal services authorities have a conflicting role, for they are expected to be neutral while dealing with the protection of the rights of the accused on the one hand, and supporting the victim in securing their right to compensation on the other.

Issues and challenges

Ineffective schemes: While Sections 357 and 357-A of the CrPC are steps in the right direction, their effect has been nullified due to the ignorance of the judiciary, which has failed to invoke these sections time and again.

Non-uniform: Furthermore, state victim compensation schemes are non-uniform, fail to comply with the centre's guidelines and continue to suffer from various other inadequacies, such as the usage of wide umbrella-like terms that cover several offences under one amount of compensation, resulting in a grave injustice to the victims of crimes differing in their nature and gravity.

Disbursed compensation: Moreover, compensation under the schemes is sparingly disbursed.

Ignorance by courts: Lastly, the courts too are at fault for their consistent ignorance of Sections 357 and 357-A of the CrPC.

In *Ankush Shivaji Gaikwad v State of Maharashtra* (2013), the Supreme Court came down heavily on the rampant practice amongst courts of ignoring the victim's right to compensation under Section 357 of the CrPC.

The court held that though the wording of Section 357 made it appear as though the provision was merely directory in nature, by looking at the intention of the legislature behind enacting it, it was evident that Section 357 was to be treated as mandatory.

Thus, it was the duty of the courts to at least apply their mind and give reasons for refusing to grant any compensation.

Why in news?

Ministry of Information and Broadcasting has constituted a committee to review "Guidelines on Television Rating Agencies in India" notified by the Ministry in 2014.

ABOUT:

The committee will be chaired by Shashi S. Vempati, CEO, PrasarBharti.

The Terms of Reference for the Committee shall be as under:

Study past recommendations made by various forums on the subject of television rating systems in India and matter incidental thereto;

Study recent recommendations of Telecom Regulatory Authority on the subject;

Suggest steps for enhancing competition in the sector;

Review of the presently notified guidelines to see if the intended purpose(s) of issuing the guidelines have stood the test of time and has met needs of various stakeholders involve The lacunae, if any, shall be specially addressed by the Committee.

Why in news?

Virtual court and e-challan project launched in Assam; Maharashtra also got it's second virtual court recently.

About the project

E-challan solution is an initiative of the **Union Ministry of Road Transport and Highways (MoRTH)** whereas the software has been developed by **National Informatics Centre (NIC)**.

It will replace the present concept of **manual challan** with an electronically generated digital challan.

What is Virtual Court?

Virtual court is an initiative of E-Committee of Supreme Court along with Department of Justice, Ministry of Law & Justice, Government of India.

Managed by: Virtual Court is an online court being managed by **Virtual Judge** (which is not a person but an algorithm) whose jurisdiction can be extended to entire state and working hours may be 24X7.

There is no brick & mortar building of the court. In a trial by Virtual Court, neither litigant shall come to the court nor will Judge have to sit physically in the court to adjudicate the case.

The communication may only be in electronic form and the sentencing and further payment of fine or compensation will also be online.

Only single process is allowed and there can be no argument. It may be proactive admission of guilt by the accused or proactive compliance of the cause by defendant on receipt of the summons in electronic form.

On payment of Fine, such matters may be treated as disposed off. Citizen neither have to wait in lines in courts nor have to confront Traffic Policeman.

Status of virtual courts in India:

A Virtual Court was inaugurated in Delhi on 26th July 2019 and in Haryana on 17th August 2019 to initially try Traffic Challan cases.

Currently there are 9 Virtual courts functioning in India - Delhi (2 Courts), Haryana (Faridabad), Maharashtra (Pune), Madras, Karnataka (Bengaluru), Maharashtra (Nagpur), Kerala (Kochi) and Assam (Gauhati).

They are all dealing with Traffic Challan cases only.

Over 30 lakh cases have been handled by 7 virtual courts and in over 10 lakh cases online fine of more than Rs. 123 Cr has been realised till recently.

In fact, one single court in Delhi has singlehandedly collected more than Rs. 115 crore as online fines.

Significance of the concept

It will increase productivity of citizen as well as judicial officers. It will promote greater accountability and less corruption in Traffic Police Department thus bettering life of people.

In Assam due to Virtual Court work of 10 judges will be done by only single judge thus sparing 9 Judges for judicial work.

United Nations (UN) Launched 'The Sanitation And Hygiene Fund (SHF)'

Society & Welfare

Why in news?

SHF is global financing mechanism which will provide accelerated **funding to countries with heaviest burden of diseases stemming from lack of sanitation services** and least ability to respond.

- It aims to **raise \$2 billion over the next five years** to support the efforts.
- It is **hosted by UN Office for Project Services**.

Objective of SHF

- expanding household sanitation;
- ensuring menstrual health and hygiene;
- providing sanitation and hygiene in schools and healthcare facilities;
- supporting innovative sanitation solutions.

Earlier, WHO's WASH Strategy 2018-2025 was adopted which describe show WHO will increase its impact through introduction of transformational approaches, and tackling new results areas like WASH in health care facilities.

Height and BMI Trends of 2019

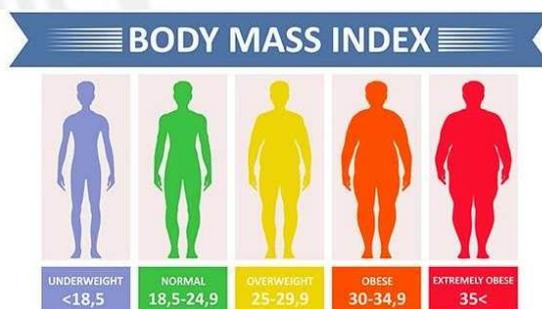
Society & Welfare

Why in news?

According to a study in The Lancet, India ranks third and fifth from the bottom respectively among countries where 19-year-old girls and boys have a low Body Mass Index (BMI),

What is Body Mass Index (BMI)?

- Body Mass Index (BMI) is a measurement of a person's weight with respect to his or her height. It is more of an indicator than a direct measurement of a person's total body fat. The WHO defines an adult who has a BMI between 25 and 29.9 as overweight - an adult who has a BMI of 30 or higher is considered obese - a BMI below 18.5 is considered underweight, and between 18.5 to 24.9 a healthy weight.



The Lancet Study on BMI and India's Position at the Global Level

- In 2019, The Lancet pooled data from 2181 population-based studies, with measurements of height and weight in 65 million participants in 200 countries and territories. The primary outcomes were population mean height and mean BMI from ages 5 to 19 years.
- This global analysis of data spanning 34 years from 200 countries ranked India at 196th place with respect to BMI (Body Mass Index). The normal ranges between 20 & 25.
- This study reveals that the 19-year-old boys and girls in India do not just have a poor BMI, but are also one of the shortest 19-year old population in the world.
- The review published in the international medical journal 'The Lancet' states that India's boys ranked 180th with an average height of 5.46 feet while girls ranked 182th with an average height of 5.06 feet
- Why do Indian 19-year-olds have low BMI?
- India ranks third and fifth from the bottom respectively among countries where 19-year-old girls and boys have a low body mass index, according to a study in The Lancet to be published on Friday. The study provides new estimates for height and BMI trends in 2019 across 200 countries after analysing data from 2,181 studies.
- BMI is measured as the weight in kg divided by the square of the height in metres. World Health Organization guidelines define a normal BMI range as 18.5 to 24.9, overweight as 25 or higher, and obesity as 30 or higher.

BMI	Weight status
Below 18.5	Underweight
18.5-24.9	Normal weight
25.0-29.9	Overweight
30.0-34.9	Obesity class I
35.0-39.9	Obesity class II
Above 40	Obesity class III

THE TOP 3, THE BOTTOM 3, AND INDIA

BOYS, AGE 19		GIRLS, AGE 19	
MEAN HEIGHT, 2019		MEAN HEIGHT, 2019	
Netherlands	183.8 cm	Netherlands	170.4 cm
Montenegro	183.3 cm	Montenegro	170.0 cm
Estonia	182.8 cm	Denmark	169.5 cm
India	166.5 cm	India	155.2 cm
Solomon Islands	163.1 cm	Nepal	152.4 cm
Lao PDR	162.8 cm	Bangladesh	152.4 cm
Timor-Leste	160.1 cm	Guatemala	150.9 cm
MEAN BMI, 2019		MEAN BMI, 2019	
Cook Islands	29.6	Tonga	29.0
Nauru	29.5	Cook Islands	28.9
Tuvalu	28.2	Nauru	28.6
India	20.1	India*	20.1
DR Congo	19.9	Romania	19.9
Niger	19.8	Timor-Leste	19.6
Ethiopia	19.2		

* India 3rd from bottom

Source: The Lancet

- The mean BMI of 19-year-old boys is 20.1 in India, compared to a high of 29.6 in the Cook Islands and a low of 19.2 in Ethiopia. For Indian girls, the mean BMI is again 20.1, compared to a high of 29.0 in Tonga and a low of 19.6 in Timor-Leste. The mean height of Indian 19-year-olds is 166.5 cm for boys and 155.2 cm for girls, well below the high of Netherlands boys (183.8 cm) and girls (170 cm).
- The 20 cm or higher difference between countries with the tallest and shortest mean height represents approximately 8 years of growth gap for girls and approximately 6 years for boys. For example, 19-year-old girls in India have the same mean height as 12-year-old Dutch girls, according to study.
- The analysis charts child and adolescent physical growth trends over 35 years. 115 data sources from India with over 2.1 million participants were used in the analysis. Both height and BMI have increased from 1985 to 2019 although there is still a great deal of potential for height while curbing any future rise in obesity so programmes targeted towards the poor from birth through school years are needed.
- In developing countries like India, there is a dual burden i.e., over nutrition and under nutrition. The prevalence of overweight and obesity among adolescents of both Indian girls and boys is lower when compared to children of developed nations. The reasons could be several, like variations in the epigenetic, dietary intakes, familial, psychosocial, parental education, occupations, income etc.
- The need for regular diet and nutrition surveys in India to avert the increase of overweight and obesity among children and adolescents. "Overweight and obesity are mostly carried over to adult age and are causes for many metabolic disorders like insulin resistance, diabetes, hypertension, CVDs, stroke, and some cancers."

Suggestions:

- There is a need for regular diet and nutrition surveys in India to avert the increase of overweight and obesity among children and adolescents.
- Overweight and obesity are mostly carried over to adult age and are causes for many metabolic disorders like insulin resistance, diabetes, hypertension, CVDs, stroke, etc.
- Programmes targeted towards the poor from birth through school years are needed.

Report on the National Nutrition Mission : NITI Aayog

Society & Welfare

Why in news?

Recently, the NITI Aayog released a report titled "Accelerating Progress On Nutrition In India: What Will It Take".

It is the third progress report on the National Nutrition Mission or the Poshan Abhiyaan.

The first two reports focused majorly on the mission's preparedness and implementation by States and UTs, respectively.

About the report

- It **takes stock** of the **roll-out status** on the ground and implementation challenges encountered at various levels through large scale datasets.
- About **stunting** it **mentions** that **India's targets are conservative** as compared to the global target defined by the World Health Assembly (WHA), which is a prevalence rate of 5% of stunting as opposed to India's goal of reducing stunting levels to 13.3% by 2022.
- The target of reducing **prevalence levels of anaemia** among pregnant women **from 50.3% in 2016 to 34.4% in 2022** and among adolescent girls **from 52.9% in 2016 to 39.66%**, is also considered to be conservative as compared to the WHA's target of halving prevalence levels.
- In the **wake** of the **pandemic**, experts warn that **deepening poverty** and **hunger may delay** achieving the goals defined under the Mission.

Some Important suggestion made in the report:

- It recommends that the **government must implement interventions** beyond the health sector and its focus on the distribution of IFA tablets.
- The Government **must include efforts to improve socio-economic conditions**, else India will "achieve modest improvements in anaemia" among women of reproductive age.
- It **calls for a need to lay as much emphasis on complementary feeding** as it does on **breast feeding**, which it points out can help avert 60% of the total stunting cases in India.
- It recommends **improved "water, sanitation, hand washing** with soap and hygienic disposal of children's stools" as other interventions which could help avert a quarter of the stunting cases.
- It recommends to **include interventions** that go **beyond the treatment of severe acute malnutrition (SAM)** and also address moderate wasting, and have the potential to achieve larger declines in wasting.

Lack of nutrition

According to NFHS-4 (2015-16), 38.4% of children under five years were stunted (low height-for-age) and 21% of them were wasted (low weight-for-height) in India

Indicator	ALL FIGURES IN %	
	NFHS-4 (2015-16)	NFHS-3 (2005-06)
Children under 5 years who are stunted (height-for-age)	38.4	48
Children under 5 years who are wasted (weight-for-height)	21	19.8
Children under 5 years who are severely wasted	7.5	6.4
Children under 5 years who are underweight (weight-for-age)	35.8	42.5

About National Nutrition Mission:**Objectives of National Nutrition Mission (Poshan Abhiyaan):**

1. **Improving nutrition:** National Nutrition Mission is aimed at improving the nutritional status of Children from 0-6 years, Adolescent Girls, Pregnant Women and Lactating Mothers in a time bound manner during the next three years beginning 2017-18.
2. **Convergence:** The Abhiyan aims to achieve convergence with various programmes i.e., Anganwadi Services, Pradhan Mantri Matru Vandana Yojana, Janani Suraksha Yojana, National Health Mission, Swachh-Bharat Mission, Public Distribution System, Mahatma Gandhi National Rural Employment Guarantee Scheme.
3. **Reducing malnutrition:** It focuses on reducing stunting, under-nutrition and anaemia in women and adolescents through direct cash transfers is a massive step towards eradicating malnutrition.

**POSHAN
Abhiyaan**

PM's Overarching
Scheme for Holistic
Nourishment

सही पोषण - देश रोशन

**Salient features of National Nutrition Mission:**

1. **Target to reduce malnutrition:** The mission, has a target to reduce under-nutrition and low birth-weight by 2% each year. It will strive to achieve reduction in stunting from 38.4% as per the National Family Health Survey-4 to 25% by 2022. NNM targets to reduce stunting, under-nutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight by 2%, 2%, 3% and 2% per annum respectively.
2. **Anaemia targets:** It also aims to bring down anaemia among young children, women and adolescent girls by 3% per year.
3. **An apex body:** The mission will form an apex body that would fix targets and monitor, supervise and guide nutrition-related interventions across the ministries.
4. **Use of technology:** The mission would include several components like an ICT (information and communications technology)-based real-time monitoring system, incentivising of states and Union territories to meet their targets, social audits, and setting up of nutrition resource centres.
5. **Anganwadi workers:** Anganwadi workers will also be offered incentives for using IT-based tools such as smartphones. Aadhaar card is a mandatory requirement to avail the benefits of the mission,
6. **Monitoring and Convergence Action Plan:** Implementation strategy would be based on intense monitoring and Convergence Action Plan right upto the grass root level.
7. **Behavioural Change:** The scheme proposes to ensure service delivery by the use of more technology, behavioural change through incentives and lists down specific targets to be achieved in a phased manner, thus eradicating malnutrition from the country.

Challenges:

1. **Implementation:** The intent of the policy is clear, but the implementation could be a challenge. Malnutrition is a complex and multi-dimensional issue and thus need holistic approach.
2. **Lack of coordination:** Various ministries and departments related to healthcare often operate in isolation.
3. **Under-utilisation of funds:** The scheme also suffers from under-utilisation of allocated funds (only 16% of allocated resources for 2018-19), just like many other government programmes.
4. **Lack of data)** Lack of real-time data monitoring, sustainability and accountability may impact the National Nutrition Mission (NNM), Thus there is a need to strengthen monitoring and delivery systems.
5. **Human Resources:** NNM requires a huge human resource input. In a low-and-middle-income-country with challenges around power supply, literacy, handling technology sensitively and sensibly may require a long period of hand-holding and capacity building.

Pneumonia and Diarrhea Progress Report 2020: IVAC**Society & Welfare****Why in news?**

Recently, the International Vaccine Access Centre (IVAC) has released the latest annual **Pneumonia and Diarrhoea Progress Report (PDPR)**.

About the report

- It is an **annual report** that examines the progress across 10 high-impact indicators outlined in the **Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD)** in the 15 countries with the greatest burden of under-five pneumonia and diarrhoea deaths.

- In 2009, the World Health Organisation (WHO) and United Nations Children's Fund (UNICEF) launched the **GAPPD**.
- The plan proposes a multi-sectoral, integrated approach to reduce the incidence of severe pneumonia and diarrhoea, reduce the number of children under-five who are stunted

Key Highlights of Pneumonia & Diarrhoea Progress Report 2020

- **Pneumonia** continues to **kill more children under five worldwide** than any other single infectious disease while **diarrheal diseases** which is the **second leading infectious** cause of death of children under 5, claimed the lives of 437,000 young children.
- Globally, over **1.23 million children died of pneumonia and diarrhea** before reaching their 5th birthday which is equivalent of over 141 child deaths per hour or 3,400 deaths per day.
- The 2020 P DPR focus countries were **India, Nigeria, Pakistan, Dominican Republic of Congo, Ethiopia, Chad, Indonesia, Angola, Tanzania, Somalia, China, Mali, Bangladesh, Niger and Cote de Ivoire.**
- The **overall world's health systems** are **falling short** of ensuring that children have access to prevention and treatment services.
- The report tracked progress by analysing 10 indicators from the latest available data on how countries are delivering key interventions, including **breastfeeding, immunisation, care-seeking and antibiotics, oral rehydration solution (ORS), and zinc supplementation**, shown to prevent pneumonia and diarrhoea deaths.



India's performance in Pneumonia and Diarrhoea Progress Report 2020

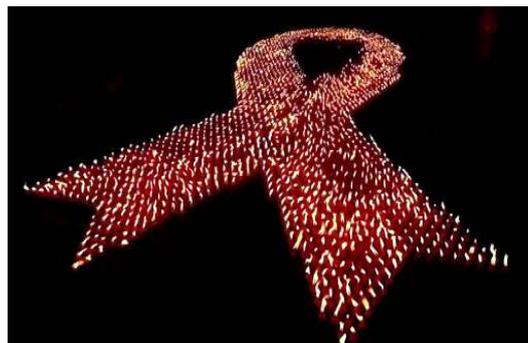
- India has achieved the **global target of 90% coverage for three of the five vaccines** whose coverage is monitored in the report.
 - The vaccines are **Diphtheria, Pertussis and Tetanus (DPT) vaccine, Measles-containing-vaccine first dose, Haemophilus influenza type B, pneumococcal conjugate vaccine (PCV), and rotavirus vaccine.**
- India's coverage of **rotavirus vaccine increased by 18 percentage points** (53% in 2019) and the coverage against **pneumococcal pneumonia increased by 9 percentage points** (15% in 2019).
- In 2019, India completed the "**100-day agenda**" which was an unprecedented national scale-up of rotavirus vaccine.
- The report stated that the **vaccine expansion will help protect 26 million children born each year** against life-threatening cases of rotavirus diarrhoea.
- **India is one of just four countries**, out of the 15 focus countries that exceeded targets for **exclusive breastfeeding.**
- India **failed to reach all four targets for treatment**, adding that the **treatment for diarrhoea had the lowest coverage**, with only 51% of children receiving ORS and 20% getting zinc.

Pneumonia

- It is a serious infection of lungs which are caused by various bacteria, viruses and fungi; the most common cause is **Streptococcus pneumoniae**.
- It affects people with weakened immune systems, older people above 65 years of age, infants and young children.
- Pneumonia can be **bacterial, viral or mycoplasmic**.
- The '**Social Awareness and Action to Neutralise Pneumonia Successfully**' (**SAANS**) campaign was launched for the reduction in pneumonia-caused deaths by **2025 to less than 3 deaths out of 1000 live births**.
 - Under SAANS, health and wellness centres can use pulse oximeter (device to monitor oxygen saturation) to identify low oxygen levels in the blood of a child.
- **Mission Indradhanush-** Launched in 2014 to **accelerate the process of immunization by covering 5%** and more children every year and achieve the target of full coverage by 2020.
 - It provides life-saving vaccines to all children across the country free of cost to protect them against 12 Vaccine-Preventable Diseases (VPD).
 - **Intensified Mission Indradhanush (IMI)** has been launched to reach each and every child under two years of age and all those pregnant women who have been left uncovered under the routine immunisation programme.
 - The **Intensified Mission Indradhanush 2.0** will target the districts which have immunisation coverage of 70% or below.

Why in news?

Recently, the Union Minister for Health and Family Welfare digitally addressed the Ministerial meeting of the **Global Prevention Coalition (GPC) for Human immunodeficiency virus (HIV) Prevention**.

**About the coalition**

- It was hosted by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the United Nations Population Fund (UNFPA) on behalf of the Global HIV Prevention Coalition(GPC).
- It is a global coalition of United Nations Member States, donors, civil society organizations.
- Established in 2017 to support global efforts to accelerate HIV prevention.
- It includes the 25 highest HIV burden countries, UNAIDS Cosponsors, donors, civil society and private sector organizations.
- **Goal-** It seeks to ensure accountability for delivering prevention services at scale in order to achieve the targets of the 2016 Political Declaration on Ending AIDS, including a 75% reduction in HIV infections towards fewer than 500000 infections by 2020, and to ending the AIDS epidemic by 2030.

India's model for HIV Prevention

- India's unique HIV prevention model is centered around the concept of '**Social Contracting**' through which the **Targeted Interventions (TI) programme** is implemented.
- The programme is aimed at providing **outreach, service delivery, counselling & testing** and **ensuring linkages to HIV care** with the support from Non-Government Organizations.
- India's prevention model can be **adopted and scaled up in many countries** by tailoring the intervention as per local settings.
- The Government **linked key populations and people living with HIV (PLHIV)** to various social welfare schemes.
- The enactment of **The Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017** has provided a **legal and enabling framework** for safeguarding the human rights of the infected and affected populations.
- India's commitments to achieve the **90-90-90 targets** across the country by the end of the current year and also **end the AIDS epidemic as a public health threat by 2030**.
- Under the Test and Treat Policy, approximately 50,000 PLHIV who were lost to follow-up were linked back to Anti-Retroviral Treatment services through '**Mission SAMPARK**'.

90:90:90 Strategy

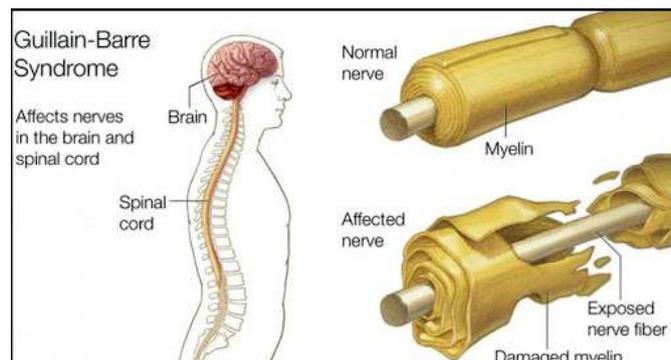
- It is a new HIV treatment that lays the groundwork to end the AIDS epidemic.
- 90% of all people living with HIV will know their HIV status (90% diagnosed)
- 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (90% on HIV treatment)
- 90% of all people receiving antiretroviral therapy will have viral suppression (90% suppressed)

Why in news?

In a rare complication, some patients infected with Covid-19 have been found suffering from Guillain Barre Syndrome (GBS).

About

- In India, such cases have been reported since August.
- A group of neurologists in Mumbai is now mapping these cases and their symptoms. So far, 24 cases have been added to the study.



Guillain Barre Syndrome (GBS)

- Guillain Barre Syndrome is a very rare autoimmune disorder.
- A disorder in which the immune system, in an attempt to kill the coronavirus, accidentally starts attacking the peripheral nervous system.
- The peripheral nervous system is a network of nerves that lead from the brain and spinal cord to different parts of the body. Attacking them can affect limb functions.

Symptoms

- The syndrome's first symptoms are a tingling or itching sensation in the skin, followed by muscle weakness, pain and numbness.
- The symptoms may emerge first in feet and hands.
- A person then starts experiencing reflex loss and paralysis, which may be temporary, but can last for 6-12 months or longer.
- With Covid-19 a year old, it is still difficult to assess the nature of permanency GBS in such cases may present.

Cause

- GBS is caused by bacteria or viral infection.
- In the past, patients of Middle East Respiratory Syndrome showed GBS symptoms, as did those infected with Zika, HIV, Herpes virus and Campylobacter jejuni.

Treatment

- Intravenous immunoglobulin (IVIG) and sometimes plasma therapy helps recovery in patients with GBS.
- Some patients may develop severe complications and require intensive care treatment or ventilator support.
- Studies have indicated that patients need a few weeks of hospitalisation.
- If a patient is not treated, his condition may deteriorate as there could be respiratory failure as the worst outcome, or weakness and effect on walking and limb movement.
- Patients cannot be treated at home, they need hospitalisation and immunoglobulin or plasma.

GBS Development

- In June, The New England Journal of Medicine published an article giving case details of five patients in three hospitals of Italy, who suffered from this syndrome after getting infected by Sars-CoV-2 virus. Initial symptoms were weakness in lower limbs and a pricking sensation in the skin.
- An interval of 5-10 days is noticed between onset of GBS symptoms and Covid-19 infection, but some doctors say it can also take weeks after Covid-19 infection for a person to develop GBS.
- The British Medical Journal published a similar case from Japan last month, where a 54-year-old woman developed numbness and weakness and required two week hospitalisation. Tests showed she had pneumonia in chest, and her Covid-19 report came positive.
- Various studies have some consensus: the GBS symptoms emerge a few days after Covid-19 infection. Several patients who have recovered or are about to recover have developed its symptoms, and most have recovered.
- Complications due to Covona Virus
- Covid-19 is known to affect digestive, cardiac and kidney functions.
- It is also known that some patients are prone to neurological problems if they contract the virus.
- The virus can cause memory fog, anxiety, headache and depression if it attacks parts of the brain which form the central nervous system.
- In all these cases, the virus attacks the organs or tissues directly leading to the complication. But in some cases, it can have an indirect effect.
- It can trigger an immune response so powerful that the body's peripheral nervous system can come under attack.

WHO commits to eliminate cervical cancer globally

Society & Welfare

Why in news?

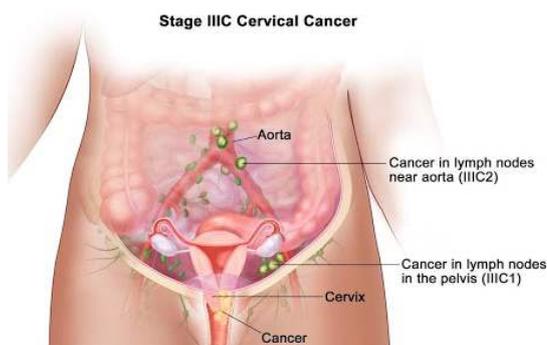
In a first, the World Health Organisation's (WHO) launched the *Global Strategy to Accelerate the Elimination of Cervical Cancer*.

Background

- Cervical cancer is the fourth most common cancer among women in the world. In the backdrop of COVID-19, the fight against cervical cancer has become challenging. The COVID-19 has eliminated the focus from other diseases and has interrupted vaccination. Cervical cancer is the fourth most common cancer in women.
- The annual number of new cases of cervical cancer is expected to increase to 700,000 from 570,000 between 2018 and 2030.
- The annual number of deaths is projected to rise to 400,000 from 311,000.

About cervical cancer

- Cervical cancer develops in a woman's **cervix** (the entrance to the uterus from the vagina).
- Almost all cervical cancer cases (99%) are linked to infection with **high-risk human papillomaviruses (HPV)**, an extremely common virus transmitted through sexual contact.
- Although most infections with HPV resolve spontaneously and cause no symptoms, persistent infection can cause cervical cancer in women.
- **Effective primary (HPV vaccination)** and secondary prevention approaches (screening for, and treating precancerous lesions) will prevent most cervical cancer cases.
- When diagnosed, cervical cancer is one of the most successfully treatable forms of cancer, as long as it is detected early and managed effectively.
- Cancers diagnosed in late stages can also be controlled with appropriate treatment and palliative care.
- With a comprehensive approach to prevent, screen and treat, cervical cancer can be eliminated as a public health problem within a generation.



Cervical Cancer Types

- There's more than one kind of cervical cancer.
- **Squamous cell carcinoma:** This forms in the lining of your cervix. It's found in up to 90% of cases.
- **Adenocarcinoma:** This forms in the cells that produce mucus.
- **Mixed carcinoma:** This has features of the two other types.

Targets:

Key-highlights of the Programme

- The programme aims to complete the following targets by 2030 globally:
- 90 per cent girls fully vaccinated with the **Human papillomavirus (HPV) vaccine** by 15 years of age
- 70 per cent women screened using a high-performance test by 35 years and again by 45 years
- 90 per cent of women identified with cervical disease receive treatment (90 per cent of women with pre-cancer treated and 90 per cent of women with invasive cancer managed).
- Another highlight of the strategy is to stress on investing in interventions to meet these targets that can generate substantial economic and societal returns.
- WHO estimates that \$ 3.20 will be returned to the economy for every dollar invested through 2050 and beyond if women's workforce participation increased.

Centrally Sponsored Pilot Scheme on Fortification of Rice

Society & Welfare

Why in news?

Recently, 15 States have been identified for implementation of **Centrally Sponsored Pilot Scheme on Fortification of Rice** & its distribution through the **Public Distribution System**.

About the Scheme:

- The Pilot Scheme has been approved for a period of three years beginning 2019-2020 with a total budget outlay of Rs.174.6 Crore.
- The FCI has been tasked to come up with a comprehensive plan for procurement and distribution of fortified rice in all the Districts of the country under **Integrated Child Development Services (ICDS) & Mid-Day Meal (MDM) Scheme** from 2021-2022.
- **The Ministry of Consumer Affairs, Food and Public Distribution** is the **nodal agency for rice fortification in India**.
- Special focus will be placed on supplying fortified rice to the 112 specially identified **Aspirational Districts of the country**.

About Rice Fortification:

- It refers to the addition of key **vitamins and minerals to increase** the nutritional value of rice.
- The **fortified Rice** generally contains **Vitamin A, Vitamin B1, Vitamin B12, Folic Acid, Iron and Zinc**.
- There are **several methods** available for the **fortification of rice** and the method chosen depends on the local technology available, costs and other preferences.

- Rice can be fortified by the **addition of a micronutrient powder** to the rice or **spraying of the surface** of ordinary **rice grains** with **vitamins and minerals**.
- Rice fortification on a national scale requires a large, cost-effective and sustainable supply of fortified kernels.

Why we need fortification?

- According to the **National Family Health Survey (NFHS-4)**, India has
- 58.4 percent of children (6-59 months) are anaemic.
- 53.1 percent of women in the reproductive age group are anaemic.
- 35.7 percent of children under 5 are underweight.
- India has been ranked at **94 among 107 countries in the Global Hunger Index (GHI) 2020**.
- According to experts the **deficiency of micronutrients is known as hidden hunger** and is a serious health risk, these nutrients help in curbing malnutrition.
- The regular milling of rice deprives it of the **important nutrients and vitamins** and only a major chunk of carbohydrate is left with rice.
- It is the **most common staple food of India** and **around 67 % of the population in India consumes rice** and it can be used to compensate for nutrient deficiency and micronutrient delivery.

WHAT IS FORTIFIED RICE?

Fortification is the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in food to improve its nutritional quality and provide a public health benefit with minimal risk to health



➤ The fortification factor does not last for more than **45 days**, so it isn't advisable to store fortified rice for long

➤ According to National Family Health Survey, **78.7%** children and **75%** in the district are anaemic and suffer from malnutrition

➤ In the first phase, fortified rice will be distributed in Badangi, Bobbili, Ramabhadrapuram and Terlam mandals

About the Food Safety and Standards Authority of India (FSSAI):

- It has been established under the **Food Safety and Standards Act, 2006**.
- **The Ministry of Health & Family Welfare** is the **administrative Ministry** for the implementation of FSSAI.
- Its aim is to **establish a single reference point** for all matters relating to food safety and standards.

e-Sanjeevani

Society & Welfare

Why in news?

Health Ministry's telemedicine service eSanjeevani completes 7 lakh consultations.

ABOUT sanjeevani service

- An innovative intervention to deliver health services, eSanjeevani has started making an impact in smaller towns and rural areas.
- While telemedicine is beneficial for the patients, it also is favorable for the doctors practicing telemedicine as it limits the contact with patients who are present virtually.
- eSanjeevani has removed the requirement of doctors to beat a specific location to provide services, it enables States especially the ones with a large geographical area, to better management of their human resources.
- Through eSanjeevani, patients desirous of seeking medical consultations are placed in a virtual queue and upon their turn can see a doctor who is available virtually but present in another city.
- Each online OPD consultation generates an ePrescription which can be used to buy medicines or go for diagnostic investigations.
- eSanjeevani supports two types of online consultation with general physicians and medical specialists, these are Doctor-to-Doctor (eSanjeevani AB-HWC) and Patient-to-Doctor (eSanjeevani OPD) Tele-consultations. The former variant was rolled out in November 2019 and it is an important pillar of the Ayushman Bharat Health and Wellness Centre (AB-HWCs) programme.
- eSanjeevani (AB-HWC) is to be implemented in all the 1.5 lakh Health and Wellness Centres in a 'Hub and Spoke' model, by December 2022.

eSanjeevani
Web based Telemedicine Solution

www.esanjeevani.in

- Low Cost Tele-Medicine Solution
- Integrated with range of Medical Peripherals
- Doctor-to-Doctor Consultation
- Inbuilt Video Conferencing
- Suitable for all Medical Specialties
- Comprehensive Dashboard for Doctors
- Security Audited Features for Tele-consultations
- Seamless import of over 15 Tests Results

Grand Challenge for development of "Smart Water Supply Measurement and Monitoring System"

Society & Welfare

Why in news?

In order to harness the power of technology in water management, the Ministry of Electronics & Information Technology in partnership with National JalJeevan Mission, Department of Drinking Water and Sanitation, Ministry of Jal Shakti had announced an ICT Grand Challenge to develop a 'Smart water supply measurement and monitoring system'.

ABOUT the challenge

ORGANISERS

- **The Ministry of Electronics & Information Technology (MeitY)**
- **National JalJeevan Mission (NJJM)**
- **Department of Drinking Water and Sanitation**
- **Ministry of Jal Shakti**

BACKGROUND

- JalJeevan Mission
- (JJM) has been launched which aims at providing **Functional Household Tap Connection (FHTC)** to **every** rural household by **2024**.
- The programme focuses on **service delivery** at the household level, i.e. **water supply** regularly in adequate quantity and of prescribed quality.
- This necessitates the use of modern technology in **systematic monitoring** of the programme.
- It is important to capture **service delivery data** automatically for ensuring the **quality of services**.
- Digitally enabled water supply infrastructure will help in near **real-time monitoring** and evidence-based policymaking.
- There is an opportunity to deploy a frugal IoT based system to **monitor quantity, quality**, and periodicity of water delivery.
- **Digitisation of water supply infrastructure** has the potential to solve some of the biggest societal problems facing the nation.
- More importantly, it will help anticipate and **address future challenges**.

IMPLEMENTATION

- **CDAC** would be the **implementing agency** of the grand challenge and provide technical support also
- Also, **JalJeevan Mission** would provide **locations and financial support** for sourcing and installation of devices/solutions .
- **JJM** will assist in deployment as well as **logistics, travel** and other **contingency expenses**.

About JalJeevan Mission:

- The chief objective of the Mission is to provide piped water supply (HarGharJal) to all rural and urban households by 2024. It envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.
- JJM focuses on integrated demand and supply-side management of water at the local level.
- Creation of local infrastructure for source sustainability measures as mandatory elements, like rainwater harvesting, groundwater recharge and management of household wastewater for reuse, would be undertaken in convergence with other government programmes/schemes.
- The Jal-Jeevan Mission is set to be based on various water conservation efforts like point recharge, desilting of minor irrigation tanks, use of grey-water for agriculture and source sustainability.
- The Mission is based on a community approach to water and includes extensive Information, Education and Communication as a key component of the mission. Thus JJM looks to create a janandolan for water, thereby making it everyone's priority.

Funding Pattern:

- The fund sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern States, 50:50 for other states, and 100% for Union Territories.
- The JalJeevan Mission will converge with other Central and State Government Schemes to achieve its objectives of sustainable water supply management across the country.

Institutional Arrangement:

- 1. National JalJeevan Mission (NJJM) at the Central level
- 2. State Water and Sanitation Mission (SWSM) at the State level
- 3. District Water and Sanitation Mission (DWSM) at the District level
- 4. Village Water Sanitation Committee (VWSC) at Village level

Village Action Plan (VAP):

- **Every village will prepare a Village Action Plan (VAP) which will have three components:**

- Water source & its maintenance
- Water supply
- Grey-water (domestic wastewater) Management.
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Mission COVID Suraksha**Society & Welfare****Why in news?**

The Government of India recently launched Mission COVID Suraksha to accelerate development of vaccine in the country.

About Mission COVID Suraksha

- It is an **Indian COVID-19 Vaccine Development Mission** with end-to-end focus from preclinical development through clinical development and manufacturing and regulatory facilitation.
- Under the mission, the **grant will be provided to the Department of Biotechnology (DBT)** for Research & Development of Indian COVID-19 vaccines.
- It will help **accelerate development of approximately 5-6 vaccine candidates** and ensure that these are brought closer to licensure and introduction in market for consideration of regulatory authorities.
- The important objectives of the fund will be:
- **Accelerating pre-clinical & clinical development;**

- **Licensure of COVID-19 vaccine candidates** that are currently in clinical stages or ready to enter clinical stage of development, establishing clinical trial sites;
- **Supporting development** of common harmonized protocols, trainings, data management systems, regulatory submissions, internal and external quality management systems and accreditations;
- **Strengthening** the existing immunoassay laboratories, central laboratories; and
- **Suitable facilities** for animal studies, production facilities and other testing facilities to support COVID-19 vaccine development

Need for Mission COVID Suraksha

- Mission COVID Suraksha is the targeted effort to **enable development of indigenous, affordable and accessible vaccines** for India and will complement the **National Mission of Atmanirbhar Bharat**.
- India has exhibited enormous **strength in vaccine manufacturing** and India's vaccine manufacturers will develop affordable and accessible vaccine not only for India but the world.

What is Ind-CEPI?

- The mission was launched in March 2019 at a cost of Rs 312 crores. The main aim of the programme is to strengthen the development of vaccines for epidemics in India.

Objectives

- The mission will support development of at least two to three vaccines until phase 2 of their testing. It will strengthen the infrastructure support of vaccine development through industry-academia interface. The mission will work to strengthen internal inter-ministerial co-ordination to speed up the vaccine development. It will strengthen surveillance, development framework and logistics for the use of new vaccines.

What is CEPI?

- CEPI is Coalition for Epidemic preparedness Innovations. It is a foundation that was established in 2017 by World Economic forum, India, Norway, Bill and Melinda Gates Foundation. It was founded at Davos, Switzerland. The headquarters of CEPI is located in Oslo, Norway. CEPI finances independent research projects developing vaccines by taking donations from public, private and philanthropic organisations.

How has CEPI helped the programme?

- CEPI has so far conducted prioritisation exercises for Nipah virus, Lassa, Chikungunya, MERS and RFV in India.



Why in news?

- The Union Cabinet approves Capital infusion into NIIF Infrastructure Debt Financing Platform.

About the Platform

- Union Cabinet has given its approval to the proposal for equity infusion by Government of Rs. 6000 crores in **NIIF Debt Platform sponsored by National Investment and Infrastructure Fund (NIIF), comprising of Aseem Infrastructure Finance Limited (AIFL) and NIIF Infrastructure Finance Limited (NIIF-IFL)**, subject to the following conditions:
 - That only Rs. 2,000 crore would be allocated during the current year 2020-21. However, in view of the unprecedented financial situation and availability of limited fiscal space due to the prevailing COVID-19, the proposed amount may be disbursed only if there is readiness and demand for debt raising.
 - NIIF will take all necessary steps to use the equity investments from Domestic and Global pension funds and sovereign wealth funds expeditiously.
 - The NIIF Strategic Opportunities Fund has set up a Debt Platform comprising an NBFC Infra Debt Fund and an NBFC Infra Finance Company.
 - NIIF through its Strategic Opportunities Fund ('NIIF SOF') owns a majority position in both the companies and has already invested Rs.1,899 crore across the Platform.
 - The Strategic Opportunities Fund (SOF fund) through which the NIIF investment has been made will continue to support the two companies apart from investing in other suitable investment opportunities.
 - The current proposal seeks GOI investment directly to further scale the potential and impact of the two entities in the infrastructure debt financing space. This will also support the efforts of the platform to raise international equity.

Implementation strategy and targets

- The strategy is AIFL will predominantly focus on under construction/greenfield / brownfield assets with less than one year of operations. NIIF Infrastructure Debt Financing Platform will have its own in-house appraisal system, which will enable faster deployment of funds.
- NIIF IFL (NBFC-IDF) will operate as a take-out vehicle for mature operating assets. It will help infrastructure investors in replacing high cost bank finance with cheaper IDF finance post-commissioning.
- Over the next 5 years (NIP Plan Period), NIIF Infrastructure Debt Financing Platform can potentially support the construction of infrastructure projects worth Rs.100,000 crore.
- The Platform will also need to raise external long-term equity capital as well as debt from both domestic and international markets over the next few years which could result in a multiplier of 14 -18 times of the proposed capital infusion of up to Rs. 6,000 crore from GOI.
- NIIF will make strong efforts to use the equity investments by Government to catalyse equity investments by Domestic and Global Pension, Insurance and Sovereign Wealth Funds in the NIIF Infrastructure Debt Financing Platform

About NIIF

- It is a collaborative investment platform **focused on Indian infrastructure**.
- It invests in **operating assets, greenfield projects and anchor third-party managed funds** in core infrastructure and related segments.
- The **Governing Council of NIIF is chaired by the Finance Minister** of India. It also comprises eminent members from the business, investment and policy sectors.
- The Council meets annually and provides overall guidance on overall NIIF strategy.
- Invest in operating assets, greenfield projects and anchor third party managed funds in core infrastructure and related segments.

Various funds under NIIF**Master Fund**

- Primarily investing in operating assets in core infrastructure sectors such as roads, ports, airports, power etc.
- Invests in mature businesses with long-term track record, often operating in regulated environments or under concession or long-term agreements.
- These businesses are expected to provide predictable inflation-hedged and stable cash flows.

Fund of Funds

- Invests through India-focused private equity fund managers who have a strong track record of managing investments successfully.
- May also selectively form joint ventures with fund managers.

- Invests in social infrastructure sectors services such as healthcare, education, digital as well as financial services, logistics and consumer services.

Strategic Fund

- Aimed at growth and development stage investments in projects/ companies in a broad range of sectors that are of economic and commercial importance.
- Primarily investing in operating assets in core infrastructure sectors such as roads, ports, airports, power etc.

Nutraceutical Industry

Economy

Why is in news?

Union government to provide industrial park facilities to grow Nutraceutical industry.

What are nutraceutical products?

- Nutraceuticals refer to products that are derived from herbal products, minerals, vitamins and dietary substances which are consumed for their physiological benefits or to boost immunity against diseases.
- The etymology of the term can be traced back to 1989, when Dr. Stephen De Felice, a medical practitioner introduced this segment to mainstream medicine and hence, invented 'nutraceuticals', a term derived from the confluence of 'nutrients' and 'pharmaceutical'.
- Nutraceuticals are **defined as any food (or part thereof) which provides health benefits – including prevention and treatment of disease** – in addition to the basic nutritional value found in foodstuff.
- Nutraceuticals are of particular interest as a way to reduce the expensive, high-tech disease treatment approaches currently employed in developed countries.

About the Industry

- This industry represents a dynamic, evolving entity that offers novel opportunities to merge scientific discovery with growing consumer interest in health-enhancing foods
- Nutraceuticals as an industry emerged in the early 1990s
- The US nutraceutical market represents the largest nutraceutical market in the world
- The nutraceutical industry encompasses **three main segments** which include
 1. Functional foods
 2. Dietary supplements
 3. Herbal/natural products

India Nutraceutical industry

- Despite the foreign origins to the word 'Nutraceuticals', what it entails is indigenous to India. India has had a rich heritage of herbal medicines and supplements, which have found resonance in our mythology and folklore
- Examples are: Patanjali, HealthKart
- In the year 2017, the Indian market held only 2% market share of the global nutraceutical market and its estimated valuation stands at around \$5 billion as of 2019.

CHANGES IN BANK LICENSING FRAMEWORK

Economy

Why is it in news?

An Internal Working Group (IWG) of the RBI constituted to "review extant ownership guidelines and corporate structure for Indian private sector banks" recently submitted its report.

Banking License

According to the **Banking Regulation Act, 1949**, no company in India shall **carry on banking business, unless it holds a license issued in that behalf by the Reserve Bank of India** and any such license may be issued subject to such conditions as the Reserve Bank may think fit to impose.

The licensing arrangement **facilitates the regulation of the sector** by ensuring that the banking activity is seamless and adheres to financial probity and adequate protection is provided to the depositors by the Bank.

Objectives of IWG

IWG was asked to suggest changes that not only boost private sector banking but also make it safer.

The terms of reference of the IWG inter alia included -

1. a review of the eligibility criteria for individuals/entities to apply for banking license.

2. examination of preferred corporate structure for banks and harmonisation of norms in this regard.
3. review of norms for long-term shareholding in banks by the promoters and other shareholders.

What are the key recommendations?

- 1. Promoter's cap** - The IWG has proposed to raise the cap on promoters' stake in private banks from the current 15% to 26% in 15 years. As regards non-promoter shareholding, a uniform cap of 15% of the paid-up voting equity share capital of the bank is prescribed for all types of shareholders.
- 2. Corporates as banks** - IWG has recommended that large corporate or industrial houses may be allowed as promoters of banks.
 - Large corporates refer to business houses having total assets of Rs 5,000 crore or more.
 - Here, the non-financial business of the group accounts for more than 40% in terms of total assets or gross income.
 - However, this move will be rolled out only after making amendments to the Banking Regulation Act, 1949.
 - This is to deal with connected lending and exposures between the banks and other financial and non-financial group entities.
 - The IWG also made a case for strengthening of the supervisory mechanism for large conglomerates, including consolidated supervision.
- 3. New Banks** - IWG recommended that the minimum initial capital requirement for licensing new banks should be enhanced -
 - i. from Rs. 500 crore to Rs. 1,000 crore for universal banks
 - ii. from Rs. 200 crore to Rs. 300 crore for small finance banks
- 4. NBFCs** - The panel suggested well run large NBFCs with an asset size of Rs. 50,000 crore and above, including those owned by a corporate house, may be considered for conversion into banks. This is however subject to completion of 10 years of operations and meeting due diligence criteria and compliance with additional conditions specified.
- 5. Payments Banks into SFBs** - The panel has proposed a reduction in the time-frame needed for payments banks to convert into small finance banks (SFB) to 3 years from 5 years. A change has also been suggested in the listing criterion for SFBs and payment banks.

They may list -

 - i. within 6 years from the date of reaching the net worth equivalent to prevalent entry capital requirement prescribed for universal banks (or)
 - ii. 10 years from the date of commencement of operations, whichever is earlier
- 6. NOFHC** - Non-operative Financial Holding Company (NOFHC) should continue to be the preferred structure for all new licenses to be issued for universal banks.
 - [NOFHC is a category of non-banking finance company (NBFC), registered as an NBFC with the RBI.
 - It is governed by a separate set of directions issued by RBI.
 - The objective is to separate several financial activities carried out by the same holding company.]
 - However, it should be mandatory only in cases where the individual promoters / promoting entities/ converting entities have other group entities.
 - Banks licensed before 2013 may move to an NOFHC structure at their discretion.
 - However, once the NOFHC structure attains a tax-neutral status, all banks licensed before 2013 shall move to the NOFHC structure within 5 years from announcement of tax-neutrality.
 - The concerns about banks undertaking different activities through subsidiaries joint ventures (JVs)/associates should be addressed through suitable regulations till the NOFHC structure is made feasible and operational.
 - Banks currently under NOFHC structure may be allowed to exit from such a structure if they do not have other group entities in their fold.
- 7. Licensing guidelines** - The panel called for the RBI to take steps to ensure harmonisation and uniformity in different licensing guidelines, to the extent possible.

BANKING LICENSE TO LARGE CORPORATE HOUSES

Economy

Under the present policy, NBFCs with a successful track record of 10 years are allowed to convert themselves into banks. The Internal Working Group believes that NBFCs owned by corporate houses should be eligible for such conversion. This promises to be an easier route for the entry of corporate houses into banking.

Merits of corporates in banking

- **Aid in capitalization:** The recommendations could usher in a fresh wave of consolidation in the sector as several lenders are struggling to meet minimum capital norms because of a surge in bad loans. Larger play by private

ector in the lending space could help in capitalization of the sector as state's capacity is limited. A direct corollary of capitalization by the private sector would be decreased pressure on the fiscal balance sheet with regard to recapitalization of PSBs.

- **Re-entry of India Inc in the Banking Sector:** Many of the biggest industrial groups had aspired for this ever since private players were allowed into banking after 1993. This may help enlarge the Banking industry in India which is nascent when compared at the global stage.
- **Greater Competition:** The entry of corporate players would engender greater competition in the Indian banking sector by increasing the supply of financial products available for customers.
- **Diversifying banking option for depositors:** Recommendations promote more open access to the country's deposit base, while charting a future course for asset specialists too. Business models that stand on a single solid leg (asset or liability) will see future in partnership or merger.

PRIVATE BANKS VERSUS OTHER BANKS, OVER THE YEARS

CHART 1: BANKING SECTOR CREDIT (% TO GDP)

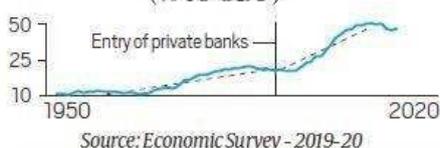


CHART 2: BANK GROUP-WISE CONTRIBUTION TOWARDS DEPOSITS IN %

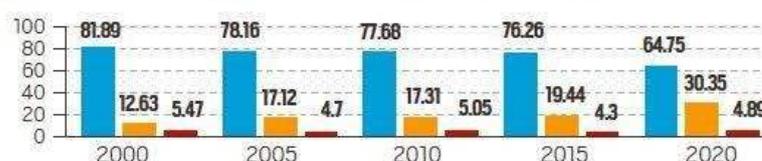
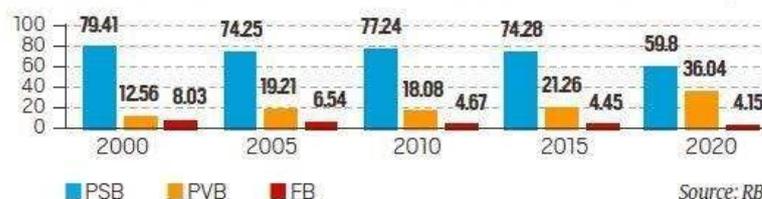


CHART 4: STAFF EXPENSES TO TOTAL INCOME



CHART 3: BANK GROUP-WISE CONTRIBUTION TOWARDS ADVANCES IN %



- **Issues that arise owing to corporates entering the banking sector**
- Favoritism: corporate houses can easily turn banks into a source of funds for their own businesses.
- rebirth of crony capitalism : in addition, they can ensure that funds are directed to their cronies.
- Resource utilisation : they can use banks to provide finance to customers and suppliers of their businesses.
- Concentration of power : adding a bank to a corporate house thus means an increase in concentration of economic power.
- Bigotry: just as politicians have used banks to further their political interests, so will corporate houses be tempted to use banks set up by them to enhance their clout.
- Debt crisis : banks owned by corporate houses will be exposed to the risks of the non-bank entities of the group.
- Preferential treatment : if the non-bank entities get into trouble, sentiment about the bank owned by the corporate house is bound to be impacted.
- Depositors at risk : depositors may have to be rescued through the use of the public safety net.
- Interconnected lending : it is naive to suppose that any legal framework and supervisory mechanism will be adequate to deal with the risks of interconnected lending in the Indian context.
- routing funds abroad : corporate houses are adept at routing funds through a maze of entities in india and abroad.
- Tracing and supervision : tracing interconnected lending will be a challenge.
- Framework: monitoring any transactions of corporate houses will require the cooperation of various law enforcement agencies.
- Authoritarianism: corporate houses can use their political clout to thwart such cooperation.
- Credibility crunch : rbi can only react to interconnected lending ex-post, that is, after substantial exposure to the entities of the corporate house has happened.
- Contingency plan : any action that the rbi may take in response could cause a flight of deposits from the bank concerned and precipitate its failure.

Connected lending challenges

Connected lending has been happening for a long time and the RBI has been falling short in having a check on it. The recent episodes in ICICI Bank, Yes Bank, DHFL etc. were all examples of connected lending. The so-called ever-greening of loans is often the starting point of such lending, wherein one loan after another is extended to enable the borrower to pay back the previous one.

Regulatory challenges: The IWG has called for a legal framework to deal with interconnected lending. It also recommended having a mechanism in place to effectively supervise conglomerates that venture into banking. However, any legal framework and supervisory mechanism will be less adequate to deal with the risks of interconnected lending in the Indian context.

Corporate houses are proficient at routing funds through a network of entities in India and abroad. So, tracing interconnected lending will be a challenge. Also, monitoring of transactions of corporate houses will require the cooperation of various law enforcement agencies.

Ex-post nature of regulation - The RBI can only react to interconnected lending ex-post i.e. after substantial exposure to the entities of the corporate house has happened. Given this, it is less likely to be able to prevent such exposure. Even after spotting, it is challenging to make course corrections. This is because any action that the RBI may take in response could cause a flight of deposits from the bank concerned and precipitate its failure.

Public sector banks crumbling under corporate banking - Beyond the idea of growing a bank on their own, the real attraction for corporate houses will be the possibility of acquiring public sector banks (PSBs). Notably, the valuations of PSBs have been weakening in recent years. Public sector banks now need capital that the government is unable to provide. So, the entry of corporate houses, if it happens at all, is likely to be a prelude to privatisation. In that case, any sale of public sector banks to corporate houses would raise serious concerns about financial stability.

Human Resource Management System (HRMS) of Indian railways

Economy

Why is it in news?

Indian Railway has launched a completely digitized online Human Resource Management System (HRMS).

About HRMS

- HRMS is a high thrust project for Indian Railways to leverage improved productivity & employee satisfaction.
- It is a move to improve efficiency and productivity of Railway system
- HRMS is expected to create a big impact on the functioning of all the employees and will make them more tech savvy.

Various modules of HRMS

- Chairman & CEO, Railway Board has launched following modules of HRMS & User depot useful for railway employees and pensioners via video conferencing. They are:
- **Employee Self Service (ESS) module** enables railway employees to interact with various modules of HRMS including communication regarding change of data.
- **Provident Fund (PF) Advance module** enables Railway employees to check their PF balance and apply for PF advance online. Advance processing will be online and employees will also be able to see the status of their PF application online.
- **Settlement module** digitizes the entire settlement process of retiring employees. Employees can fill their settlement / pension booklet online. Service details are fetched online and pension is processed online completely.

Previously launched modules of HRMS

- Prior to these modules, Indian Railways has already launched other modules of HRMS like:
- **Employee Master module** which stores all basic information details of Railway employee
- **Electronic Service Record module** replacing physical Service Records storing service records of employees in digital format
- **Annual Performance Appraisal Report (APAR) module** digitizing the complete process of writing annual performance Appraisal of all 12 lakh non gazetted Railway employees
- **Electronic Pass module** replacing the physical paper pass
- **Office Order Module** meant both for the issue of office Orders and updation of data on joining of new employees, promotion, transfer of employees and retirement of employees in HRMS database.

INFLATION TARGETING

Economy

Why is it in news?

With the inflation keeping above the RBI's comfort level and staying the central bank's hands on cutting policy rates, the debate has been around the inflation-targeting framework. The discussion will only gather more heat as the current five-year regime is to end on March 31, 2021.

What is inflation targeting (IT)?

Inflation targeting is a monetary policy strategy used by Central Banks for maintaining price level at a certain level or within a range. It indicates the primacy of price stability as the key objective of monetary policy.

Tools for inflation targeting:

- Liquidity Adjustment Facility- With this RBI controls the money supply in the economy. These interest rates and inflation rates tend to move in opposite directions.
- Open Market Operations- RBI buys or sells short-term securities in the open market, thus impacting money available with the public.
- Variable Reserve Requirement- Cash Reserve Ratio (CLR) and the Statutory Liquidity Ratio (SLR) are increased or decreased in accordance with inflation or deflation respectively.
- Bank rate- It is the rate at which RBI lends money to commercial banks without any security. When bank rate is increased interest rate also increases leading to inflation.
- Moral Suasion- If there is a need RBI can urge the banks to exercise credit control at times to maintain the balance of funds in the market.



The tools of inflation targeting have been effective

- Inflation contained- For the last year, inflation remained in the desired bracket of 4%, giving good real returns to the people.
- Impact on growth- Though inflation was within limits, but the growth could not be spurred because of the mandate of RBI to stay within the target.
- Better prediction and stability- With each monetary policy review, RBI provides a 'neutral', 'accommodative', or 'calibrated tightening' stance giving an indication to businesses and banks about the trends in future interest rates.

What is the role of MPC in inflation targeting?

- The goal of the monetary policy is keeping inflation around 4%.
- It should be within a variation of 2 percentage points in the up or down direction.
- The more robust the inflation surveys, the more effective would be the policies of the RBI and its Monetary Policy Committee (MPC) in targeting inflation.

Performance of Inflation targeting in India

- **Control over inflation:** Inflation reduced from a high of more than 10% before 2014 to a more comfortable value after IT. For instance, the average inflation rate between October 2016 and March 2020 was below 4%.
- **Stability in Inflation expectations:** The inflation forecasts of financial professionals and the responses to inflation forecasts of households declined with the shift to IT, although household expectations of inflation continue to consistently exceed actual outcomes. As a result, increases in actual inflation now do less to excite inflation expectations, indicative of improved anti-inflation credibility.
- **Behavior of ancillary variables:** The IT regime has had a stabilizing effect on ancillary variables like exchange rates, equity markets etc. For example, the money market conditions have been broadly orderly and in tandem with the changes in repo rate.
- **Increased expression of diversity at policy level:** The working of MPC has saw expression of independent viewpoints from both external and internal members. This indicates towards improved robustness of the Monetary Policy Framework which indirectly ensures a delicate balance between price stability and economic growth.

Challenges

- **Narrow objective:** Some experts argue that RBI has objectives to take care of other parameters like economic growth, stable exchange rate and financial stability, and cannot restrict itself to the single objective of inflation.
- For instance, some market stakeholders believe that the RBI does not cut rates easily or as much as they would like to see. This is **interpreted as the RBI not giving growth as much importance as inflation.**
- **Pre-requisites of effective inflation targeting:** IT demands a number of pre-conditions for its successful implementation in the long-term such as independence of central banks, well developed financial markets, flexible exchange rate, etc. Most emerging economies, including India may not be able to fulfil it in the near future.
- The consequence of not fulfilling these preconditions could be that the transmission mechanism of the IT system in the country may not be very strong. For example, sometimes change in Repo Rate by RBI is not effectively transmitted to change in inflation levels.
- **Issue of accuracy and limited availability of data:** An inflation-targeting regime requires vast amount of

data in the form of assessment of inflation in the medium term, forecasts on economic growth and other indicators of financial stability like estimates of foreign investment etc. There is a limited buffet of indicators that the RBI can use. Also, several institutions including the RBI have questioned the accuracy of the data given large discrepancies and considerable time-lag in data collection.

- **Designed for demand driven inflation systems:** It is argued that the IT system is mainly designed for countries where the inflation is due to demand factors, whereas in India, it is the supply side factors which are causing inflation.

Overcoming challenges

- RBI should be made to explain what it plans to do to control inflation.
- The central bank should be allowed to state expressly what support by way of government policy it needs to meet the inflation target.
- This can only strengthen the RBI's hand; it should not let go of the opportunity to reinforce the MPC framework.

Liquidity Trap

Economy

Why in news?

- Recently, the IMF economist Gita Gopinath stated that the global economy may be heading towards a liquidity trap.

What is Liquidity Trap?

- Liquidity trap refers to a situation where the interest rates in an economy are at extremely low levels, and individuals prefer to hold their money in cash or cash equivalent form as they are uncertain about the performance of a nation's economy.

Causes of Liquidity trap

- Liquidity trap limits the monetary expansion and reduces the effectiveness of monetary policy in combating recessions. It is called liquidity trap because any increase in money supply does not result in any decrease in the interest rate and the economy is trapped in liquidity (i.e. excess money). It is called zero lower bound because the zero nominal interest rate acts as a floor on the interest rate. The nominal interest rate can't be negative.
- In response to a recession, central banks (such as US Federal Reserve) decreases the nominal interest rate. It does so by carrying open market operations in which its traders buy treasury bonds from banks. The purchase of bonds involves transfer of money to banks which increase their reserves and increases money supply. This process works effectively when the nominal interest rates are sufficiently high. But as soon as the interest rates gets close to zero, any further increase in money supply does not result in any associated decrease in interest rates. Since interest rates are stuck at the lower bound, expansionary monetary policy doesn't work.

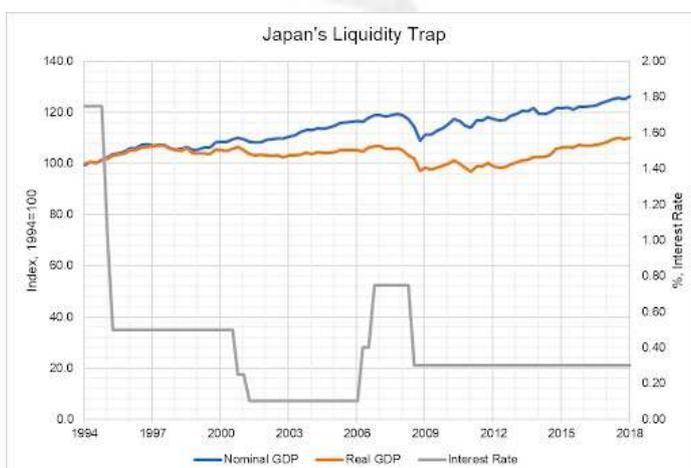


Example - Japan

- Japan has been stuck in a liquidity trap since 1990. The growth has been stagnant despite very low interest rates as shown below.
- Reasons for the sustained liquidity trap include: (a) intermittent and volatile fiscal stimulus, (b) non-commitment of sustained low interest rates, (c) aging population, (d) low population growth rate, etc.

Overcoming Liquidity Trap

- The key to overcoming the liquidity trap is to create inflationary expectations so that the nominal interest rates rise. This can be achieved through expansionary fiscal policy and unconventional monetary policy. In an expansionary fiscal policy, governments either increase their spending or decrease taxes or both in order to increase aggregate demand which induces an increase in consumption and investment.
- Unconventional monetary policy advocates using forward guidance and quantitative easing. Forward guidance is when the central banks commit to keeping the interest rates low well into future. Promise of sustained lower



interest rate gives business more confidence in undertaking new investments which stimulates consumption. Quantitative easing occurs when central banks purchase long-term bonds in an attempt to reduce the long-term interest rates. Both these tools show that monetary policy is not entirely useless in fighting liquidity trap.

MSP and Protesting farmers

Economy

Why is it in news?

The recently enacted law that dismantles the monopoly of **APMC (agricultural produce market committee) mandis**, has raised concerns that farmers may no longer be assured MSP for their crop.

What is MSP?

- MSP is the minimum price paid to the farmers for procuring food crops. MSP is announced by the Government at the beginning of the sowing season. They are recommended by the Commission for Agricultural Costs and Prices (CACP) and approved by Cabinet Committee on Economic Affairs.



Formula for calculating MSP:

- For calculating MSP, the CACP considers factors such as cost of production, change in input prices, market price trends, demand and supply, and a reasonable margin for farmers.
- The CACP projects three kinds of production cost for every crop both at the state and all—India average level. These three production costs includes:
 - A2: It covers all paid-out costs directly incurred by the farmer in cash and king on seeds, fertilizers, pesticides, hired labour, leased-in land, fuel, irrigation etc.
 - A2+FL: It includes A2 plus an imputed value of unpaid family labour.
 - C2: It is a more comprehensive cost that factors in rental and interest forgone on owned land and fixed capital assets, on top of A2+FL.

Procurement under MSP:

- The Food Corporation of India is the nodal agency for procurement along with State agencies.
- FCI establishes purchase centres for procuring food grains under the price support scheme.
- While, the State government decides on the locations of these centres with the aim of maximizing purchases.

Why MSP is important?

- Price volatility makes life difficult for farmers. Though prices of agri commodities may soar while in short supply, during years of bumper production, prices of the very same commodities plummet.
- MSPs ensure that farmers get a minimum price for their produce in adverse markets.
- MSPs have also been used as a tool by the Government to incentivise farmers to grow crops that are in short supply.

Various problems related to MSP:

- Crop production:** The crop production is still unviable. The support prices that are being provided do not increase at par with increase in cost of production.
- MSPs have unequal access:** The benefits of this scheme do not reach all farmers and for all crops.
- There are many regions of the country like the north-eastern region where the implementation is too weak.
- Procurement related problems:** Almost 2/3rd of the total cereal production is taken through the route of MSP, leaving only 1/3rd for open market. As a result, a farmer who chooses the MSP route cannot take advantage of beneficial market prices and has to depend solely on the MSP. It prevents earning of profit by producers. This has created shortage of crops in the open market also which has a serious impact on consumption pattern. It has shifted consumption towards non-cereal foods (that are available more in open market relatively), but production has not risen simultaneously, causing a production-demand. Many famers due to lack of awareness about MSP are far away from FCI procurement areas.
- Excess storage:** This kind of procurement without sufficient storage has resulted in huge piling of stocks in the warehouses. The stock has now become double the requirements under the schemes of PDS, Buffer stock etc.
- Issues in WTO:** India's MSP scheme for many crops has been challenged by many countries in the WTO. For example, Australia has complained of the MSP on wheat, US and EU complained of sugarcane and pulses MSP. They have been claimed to be highly trade-distorting by its method of calculation.

- If the current process continues, the country will face international criticism for breaching the 10 per cent norm for subsidy on farm production set by the WTO.
- **Market distortion:** It distorts the free market. It favours some particular crops over other crops.
- Not all farmers have been able to get the benefits of MSP because of lack of awareness. Higher MSP over-incentivise production leading to supply glut. Hikes in MSP also adversely affect the exports by making Indian farm goods non-competitive especially when international market prices are lower. It does not cover perishables.
- **Ecological problem:** MSP lead to non-scientific agricultural practices whereby the soil, water are stressed to an extent of degrading ground water table and salinisation of soil.
- **Killing of competition:** Any interference by the government kills the competition. This affects the agents who procure the crops at lower prices and sell them at higher prices and earn profits. This mainly disturbs the working of people who sell these outputs from farmers into the open market.

Various committees on MSP

National Commission on Farmers

- The National Commission on Farmers (NCF) was constituted on November 18, 2004 under the chairmanship of Professor M.S. Swaminathan.
- The reports contain suggestions to achieve the goal of "faster and more inclusive growth" as envisaged in the Approach to 11th Five Year Plan.
- The Swaminathan Committee widely disseminated recommendations, to fix minimum support prices(MSP) for crops at levels" atleast 50 per cent more than the weighted average cost of production.

Ramesh Chandra Committee

- It was constituted to examine the methodological issues in fixing MSP.
- The Commission suggested that for calculating production cost, family labour head should be considered as skilled worker.
- The interest on working capital should be given for the whole season.
- Post harvest costs, including cleaning, grading, drying, marketing and transportation should be included.
- The committee recommended that the cost 2 should be raised to 10% account for risk premium and managerial charges.

MSP and the new Law

- It is somewhat strange that the concept of minimum support price finds no mention in any law even if it has been around for decades.
- While the government does declare the MSP twice a year, there is no law making MSP mandatory.
- What this technically means is that the government, though it buys at MSP from farmers, is not obliged by law to do so.
- As a matter of fact, there is no law which says that MSP can be imposed on private traders as well.
- The CACP had asked earlier recommended legislation to iron out a concrete MSP law for farmers, but it was not accepted by the Centre.

The Farmers Bill

- The **Farmers Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020** allows farmers to sell their produce outside APMC mandis to whoever, even the end customer, offers a higher price.
- The second one — **The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Bill, 2020** — allows farmers to enter into a contract farming agreement the buyer for procurement of crops at pre-approved prices.
- The third bill is **The Essential Commodities (Amendment) Bill** which declassifies items like onions, cereals, pulses, potatoes, edible oilseeds and oils as essential items in normal circumstances.

Draft Merchant Shipping Bill 2020

Economy

Why in news?

Ministry of Ports, Shipping and Waterways has issued a draft of the Merchant Shipping Bill, 2020 for public consultation

Objectives of the bill

- It aims to repeal and replace the Merchant Shipping Act, 1958 and the Coasting Vessels Act, 1838
- It also aims to promote the growth of the Indian shipping industry by incorporating the best practices adopted by other advanced countries like the U.S., Japan, U.K., Singapore and Australia.



Significance of the bill

- **Promoting ease of doing business:** The Bill **does away with requirement of general trading license** for Indian vessels
- **Embracing digital technology:** It enables **electronic means of registration, and grants statutory recognition to electronic agreements**, records, and log books, in addition to electronic licenses, certificates and payments.
- **Increasing tonnage and Vessel as a Tradable Asset:** The Bill seeks to increase India's tonnage by widening the eligibility criteria for ownership of vessels and providing for the registration of bareboat charter cum demise, thereby **increasing opportunities for international trade**.
- The proposed Bill seeks to introduce for the first-time **statutory framework for regulating maritime emergency response against maritime incidents**.
- The provisions seek to provide for **time effective implementation of response mechanisms** in order to ensure that the same is prevented from becoming a wreck or other catastrophic event.
- **Welfare of Indian seafarers on abandoned vessels and safety of abandoned vessels:** Provisions for repatriation of abandoned seafarers have been enhanced, in line with the **Maritime Labour Convention (MLC) regulations**.
- **Strengthening adjudication and predictability of claims:** In order to strengthen the investigation and adjudication of claims arising out of collision of vessels, assessors may be tasked by the High Courts to present their findings on the degrees of fault of each vessel.
- The Bill **incorporates powers of the Director-General to take action against vessels that are unsafe**, and pose a threat to safety of life at sea and environment, and includes a procedure for appeal from detention orders.
- The Bill also incorporates provisions that **encourage active enforcement of pollution prevention standards** and the Central Government has been granted the power to mandate compulsory insurance or such other financial security, for pollution damage.

Positive impact of the bill

- The Bill seeks to provide increased opportunities for investment and provide greater impetus to a self-reliant domestic investment climate in the maritime industry.
- The provisions regulating the maritime education, training, certification and the recruitment and placement of seafarers and ease of registration of ships under the Indian flag will give an impetus to the quality and quantity of Indian seafarers.
- Consequently, it will boost employment opportunities for Indian seafarers in the national and international market.
- The benefits will be extended to ancillary sectors connected with the shipping industry in consonance with 'Atmanirbhar Bharat' initiatives of the government.

Production Linked Incentive (PLI) Scheme

Economy

Why is it in news?

Global electronics giants are set to expand their presence in India under the Production Linked Incentive (PLI) Scheme for making mobile phones and certain other specified electronic components.

What is Production Linked Incentive (PLI)?

- As a part of the National Policy on Electronics, the IT ministry had notified the PLI scheme on April 1 this year.
- The scheme will, on one hand, attract big foreign investment in the sector, while also encouraging domestic mobile phone makers to expand their units and presence in India.
- It would give incentives of 4-6 per cent to electronics companies which manufacture mobile phones and other electronic components.
- A/c to the scheme, companies that make mobile phones which sell for Rs 15,000 or more will get an incentive of up to 6 per cent on incremental sales of all such mobile phones made in India.
- In the same category, companies which are owned by Indian nationals and make such mobile phones, the incentive has been kept at Rs 200 crore for the next four years.

Government announcement and PLI Scheme in India

10 new sectors added

The ten sectors have been identified on the basis of their potential to create jobs and make India self-reliant, include:

1. Food processing
2. Telecom

3. Electronics
4. Textiles
5. Speciality steel
6. Automobiles and auto components
7. Solar photo-voltaic modules and
8. White goods such as air conditioners and LEDs

Sectors and Implementing Ministry/Department are as follows

- **Advance Chemistry Cell (ACC) Battery:** NITI Aayog and Department of Heavy Industries
- **Electronic/Technology Products:** Ministry of Electronics and Information Technology
- **Automobiles & Auto Components:** Department of Heavy Industries
- **Pharmaceuticals drugs:** Department of Pharmaceuticals
- **Telecom & Networking Products:** Department of Telecom
- **Textile Products (MMF segment and technical textiles):** Ministry of Textiles
- **Food Products:** Ministry of Food Processing Industries.
- **High Efficiency Solar PV Modules:** Ministry of New and Renewable Energy.
- **White Goods (ACs& LED):** Department for Promotion of Industry and Internal Trade.
- **Speciality Steel:** Ministry of Steel.

Which companies and what kind of investments will be considered?

- All electronic manufacturing companies which are either Indian or have a registered unit in India will be eligible to apply for the scheme.
- These companies can either create a new unit or seek incentives for their existing units from one or more locations in India.
- Any additional expenditure incurred on the plant, machinery, equipment, research and development and transfer of technology for the manufacture of mobile phones and related electronic items will be eligible for the incentive.
- However, all investment done by companies on land and buildings for the project will not be considered for any incentives or determine the eligibility of the scheme.

Benefits of the scheme

- The Production Linked Incentive (PLI) Scheme is designed to incentivise incremental production for a limited number of eligible anchor entities in each of the selected sectors.
- These selected entities will invest in technology, plant & machinery, as well as in R&D.
- The scheme will also have beneficial spillover effects by the creation of a widespread supplier base for the anchor units established under the scheme.
- Along with the anchor unit, these supplier units will also help to generate massive primary and secondary employment opportunities.
- The sectors for PLI have been shortlisted on the basis of their potential for economic growth, extent of benefit to the rural economy, revenue and employment generation.
- A key benefit of the PLI Scheme is that it can be implemented in a very targeted manner to attract investments in areas of strength and to strategically enter certain segments of global value chains (GVCs).
- This will help bring scale and size in key sectors and create and nurture global champions.
- The scheme incentivises upcoming technologies that represent the biggest economic opportunities of the 21st century.
- The scheme intends to generate large-scale employment by incentivising the development of traditional, labour intensive sectors like Food Processing and Textiles.
- The current basket of Indian manufacturing constitutes of large volume of low-value products.
- The scheme aims to correct this by encouraging large manufacturers to bring technology and to build capabilities for high-value output thereby providing higher returns to the upstream producers.
- It will also enable an increase in exports.
- The scheme envisages globally-integrated manufacturing in sectors such as automobile and auto components, pharmaceuticals, telecommunications, white goods and steel.
- These are crucial sectors in terms of their strategic importance, contribution to the GDP and employment-generation potential.

Challenges faced by domestic manufacturers:

- Less presence of domestic firm: Domestic firms have been nearly wiped out from the Indian market and thus their ability to take advantage of the PLI policy and grab a large domestic market share seems difficult.

- Cheap imported material: Domestic firms may have the route of exporting cheaper mobile phones to other low-income countries but their performance has not been promising.
- For example, among the chosen domestic firms, Lava International reported exports of ₹324 crores in 2018, while Optimus Electronics exported ₹83 crores in 2018 and ₹4 lakh in 2019.
- Low Level of Participation in Global Value Chains (GVCs): India's participation in GVCs has been low compared to the major exporting nations in East and Southeast Asia. Export growth of capital-intensive products from China has been mainly driven by its participation in the GVCs.
- Lack of integration: China's export promotion policies since the 1990s have relied heavily on a strategy of integrating its domestic industries within the GVCs.
- Lack of competitiveness: India's mobile phone exports grew from \$1.6 billion in 2018-19 to \$3.8 billion in 2019-20, but per unit, value declined from \$91.1 to \$87, respectively.
- Missing Profits: Despite the impressive growth of electronic products in India, the net value added by production units is very low.
- Challenges in Set-up of Foundries: Many industry experts also cite the lack of a foundry as contributing to low R&D in this sector in India, which results in poor talent retention and eventually 'brain drain'.
- Low R & D: Domestic players have also shown low interest due to their inability to compete with tech giants in research and development (R&D) and investment.

Steps that were taken to boost manufacturing

- Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors:
 - Under the scheme, a financial incentive of 25% of capital expenditure has been approved by the Union Cabinet for the manufacturing of goods that constitute the supply chain of an electronic product.
 - The SPECS notified for manufacturing of electronics components and semiconductors has a budget outlay of Rs 3,285 crore spread over a period of eight years.
 - The government estimates that the push for the manufacturing of electronics components and electronic chips will create around 6 lakh direct and indirect jobs.
- Modified Electronics Manufacturing Clusters Scheme
 - The EMC 2.0 has a total incentive outlay of Rs 3,762.25 crore spread over a period of 8 years with an objective to create 10 lakh direct and indirect jobs under the scheme.
 - The EMC 2.0 scheme will provide financial assistance up to 50% of the project cost subject to a ceiling of Rs 70 crore per 100 acres of land for setting up of Electronics Manufacturing Cluster projects.
 - Electronic manufacturing clusters to be set up under the scheme will be spread in an area of 200 acres across India and 100 acres in the North-East part of the country.

SOLAR Power in India

Economy

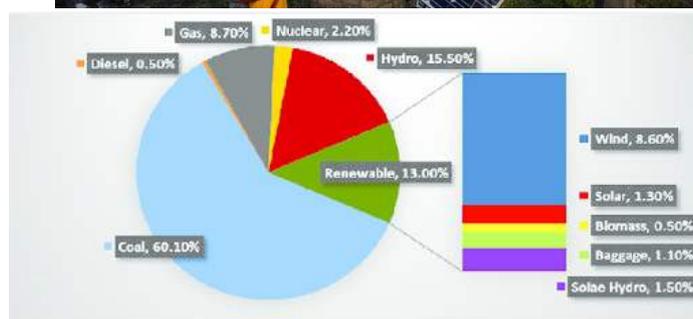
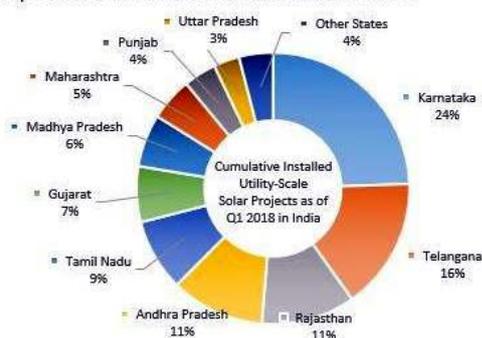
- **Why is it in news?**
- India's solar power tariffs have hit a new record low of ₹2 per unit.

Present capacity of solar manufacturing

- India has an ambitious target to increase its solar power base – by 2022, it wants to quadruple its current solar capacity to 100GW.
- A number of industrial-scale solar energy plants have come up in the past few years.
- The government-backed company Solar Energy Corp. of India (SECI) has been auctioning solar energy capacity to various private developers using a bidding process that favours the cheapest tariffs.



India: Top 10 Solar States with Cumulative Installations



Reasons for low prices

- **Reverse bidding:** The record low solar tariffs are mainly due to the "reverse bidding" process, which selects the cheapest bidder. India is now said to be considering a ceiling on solar tariffs – a cap of ₹2.5 (\$0.035) and ₹2.68 (\$0.038) per unit – for solar power companies that use both domestic and imported equipment.
- **Demand:** As seen above, India recently became the third-largest energy consumption country. With the growth in every sector of the economy like infrastructure building, manufacturing, and service provision, the demand has still to hit its peak. According to BP energy outlook 2050, India's fossil fuel import is expected to double by 2050
- **Energy Security:** India's energy mix comprises mainly of thermal power which required a large quantity of imported coal, gas, and diesel. This heavy import dependence is a threat to energy security for a high demand nation like India. Plus, the frequent geopolitics induced fluctuations in oil price makes our energy basket prone to external threats.
- **Climate change:** The excessive burning of fossil fuels is the main culprit of global warming and its severity. In the past 5 decades, the world community has agreed on the plan to reduce its energy dependence on fossil fuels and search for alternative clean energies. This has led to a search for non-polluting sources with low global warming potential. Solar energy can be the best possible solution among various alternatives.
- **Ambitious targets under UNFCC:** India's INDCs declare that by 2030, we'll reduce the emission intensity of our GDP by 33-35% below the 2005 level. Also, we commit to increase the share of non-fossil fuel-based electricity to 40% by 2030. These targets are ambitious given our current level of emissions and energy basket. Solar power, with sufficient impetus through technology and funding can play a decisive part in achieving these targets.

Challenges w.r.t developing Solar Energy

- **Silicon panel industry losing:** A big bulk of the new investments in green energy went into silicon panels, which were powered by the sun. However, the slow pace of development in the last few years is now bringing the industry on the verge of a shutdown.
- **Cost and T&D Losses:** Solar PV is some years away from true cost competitiveness and from being able to compete on the same scale as other energy generation technologies. Adding to the cost are T&D losses that at approximately 40 percent make generation through solar energy sources highly unfeasible. However, the government is supporting R&D activities by establishing research centres and funding such initiatives. The government has tied up with world-renowned universities to bring down the installation cost of solar power sources and is focusing on upgradation of substations and T&D lines to reduce T&D losses.
- **Land Scarcity:** Per capita land availability is very low in India, and land is a scarce resource. Dedication of land area near substations for exclusive installation of solar cells might have to compete with other necessities that require land.
- **Low tariffs:** Solar energy tariffs in India are among the lowest in the world, but state governments are still keen to push them down further. These dangerously low tariffs are turning unsustainable for some developers, who in turn start compromising on quality.
- **Uncertain policy changes:** Before competitive bidding for awarding projects was introduced for the renewable energy sector in 2017, states invited developers by setting a fixed tariff (called the feed-in tariff). Policy changes have been sudden and unpredictable.
- **Mounting discom dues:** Some state power distribution companies (discoms) are also late on paying their power bills. As of July 2019, state discoms owe a whopping Rs. 9,735.62 crore to the renewable energy companies.
- **Slack in new Investment:** While the renewable energy sector has been fuelled mostly by private equity (PE) investments so far, the number of firms now able to attract investment has dwindled due to the problems faced by the industry. There is also uncertainty in the bidding of new projects. The projects that have already started, the pace has slowed down dramatically.
- **No broad solar development:** Countries which are a success story in solar energy have all had a parallel development in solar-based IP, manufacturing and deployment. But in India, we went straight to deployment and that makes it vulnerable to global players like China and Vietnam who lead in manufacturing. That dependence will only grow more as India's energy transition slows or gets delayed.
- **Currency risk:** There is also currency risk involved because modules are imported and then the cost of the module itself keeps varying.
- **Low quality power:** Beyond the rising risks and regulatory uncertainty, an increasing area of concern is also the quality of solar energy installations in India, most of which are purchasing cheaper panels from China to break-even. There are higher-than-expected degradation levels in the solar modules that Indian developers are using.
- **Decline in power sector demand:** A large part of the stress in renewable energy sector is because the slow rates of growth in power demand, particularly from high energy-consuming industries.
- **Operational issues:** The solar panels used are **not designed for very high temperatures**. In remote areas with high temperatures, the panels do not yield their optimal usage.
 - **Dust is a problem**, especially in Rajasthan, which require frequent cleaning and increase the operational costs. There is alluvial dust present in plains of north India and delta regions of south India) which turns into mud when water is poured. Other main issue is the hardness of the water. **Hard water is not suitable for**

cleaning, and companies have to invest in reverse osmosis (RO) and other technology to make it suitable.

- **Skilled workforce is required** for cleaning and maintenance is not available in these areas and so companies have to bring them in from other areas and train them.

India's Import dependency

- According to the Ministry of New and Renewable Energy (2018), India has an annual solar cell manufacturing capacity of about 3 GW.
- But markedly, the average annual demand is 20 GW.
- The shortfall is met by imports of solar panels.
- The government is a near monopsonistic buyer (the market condition that exists when there is one buyer) in solar sector.
- India is regarded by the global solar industry as one of the most promising markets.
- But the low-cost Chinese imports have undercut India's ambitions to develop its own solar technology suppliers.
- Imports, mostly from China, accounted for 90% of 2017 sales, up from 86% in 2014.

Role of China

- **Core competence** - It takes time for companies to learn and put in action new technologies. When the solar industry in China began to grow, Chinese companies already possessed the know-how. The 6 largest Chinese manufacturers had core technical competence in semiconductors well before starting solar cells manufacturing. In contrast, Indian companies had no learning background in semiconductors when the solar industry in India began to grow from 2011. State governments need to support semiconductor production as part of a determined industrial policy to develop this capacity.
- **Government policy** - The Chinese government has subsidised land acquisition, raw material, labour and export, among others. None of this is matched by the Indian government. Perhaps even more important is commitment by the government to procure over the long run. This is crucial for investment in building up the design and manufacturing for each of the 4 stages of production of solar power equipment.
- **Cost of capital** - Cost of capital is another advantage for China in this regard. The cost of debt in India (11%) is highest in the Asia-Pacific region, while in China it is about 5%.
- **Sustaining exports** - In 2018, China cut financial support to developers and halted approval for new solar projects. As a result, Chinese producers will cut prices to sustain their manufacturing plant capacity utilisation by sustaining exports to India. In other words, the Chinese strategy is to undercut any planned effort by India to develop the entire supply chain capacity within India. It thereby ensures that dependence on imports from China continues.

Importance of Domestic manufacturing of solar equipment

India need to fully use its solar power potential, this is not possible unless making India self-sufficient in the manufacture of solar cells and modules, batteries and ancillary equipment.

Mitigating dependency: Currently, 80% of solar cells and modules used in India are imported from China and comprise \$2.16 billion of imports in 2018-19. Hence, domestic solar power manufacturing capacity needs to be improved to save tremendous foreign exchange.

Meeting current demands: India's solar manufacturing capacity is insufficient, under-utilised and unviable, as out of 2.5 GW demand in 2020 only 15% was met through domestic manufacturing.

Challenges faced by solar manufacturing in India

- **Investment crunch:** Firstly, to achieve the 100 GW target, India needs to invest \$65 billion in the next four years, but major part investment is raised within the country and there is less investment from foreign direct investment(FDI).
- **Technology and R&D:** India in comparison to China does not bring latest (next generation) technology at a competitive price, which hampers development of solar manufacturing in India.
- **Uncompetitive cost:** Indian solar cells are, on average, 20-30% more expensive than cells manufactured in China. Hence, manufacturer tend to choose affordable equipments through import from China.
- **Quality control issues:** Some companies have voiced their concerns about the quality of Indian made cells and reported some manufacturers falsely label their 380 Wp (capacity of a solar in watt peak) cells as 400 Wp because there are no government entities to ensure the quality of these cells.
- **Policy issues:** Only those models and manufacturers that are included in the approved list of models and manufacturers (ALMM) for solar PV cells and modules will be eligible to participate in projects under government programs.
- **Challenge at the World Trade Organisation (WTO):** US has challenged India's solar energy policy before the World Trade Organisation (WTO) on the line of domestic sourcing of solar panels, which was upheld by WTO.

Way forward

- Remaining dependent on imports only leads to short-term benefits for India.
- Substituting for imports requires human capabilities, technological capabilities and capital in the form of finance.
- Making input components locally instead of importing them and putting the modules together here are essential for covering the entire supply chain.
- Public procurement should be promoted with high priority.
- The government is still free to call out bids for solar power plants with the requirement that these be made fully in India.
- This will not violate any World Trade Organization (WTO) commitment.
- However, no bids will be received as manufacturing facilities for these do not exist in the country.
- If the bids are large enough with supplies spread over years, then bidders will emerge and local manufacturing can begin.
- This is because it will give enough time for a green field investment to be made for manufacturing in India.
- In all, India needs a solar manufacturing strategy, perhaps like the Automotive Mission Plan (2006-2016).
- [The Plan is credited with making India one of the largest manufacturers of two-wheelers, three-wheelers, four-wheelers and lorries in the world.]

NSS Report: Time Use in India-2019

Economy

Why is it in news?

The all India Time Use Survey, 2019 has just been published by the Government of India.

Objectives of the survey

The primary objective of Time Use Survey (TUS) is to measure participation of men, women and other groups of persons in paid and unpaid activities.

About the survey

- Time Use Survey (TUS) provides a framework for measuring time dispositions by the population on different activities.
- National Statistical Office (NSO) conducted the first Time Use Survey in India during January – December 2019.
- The survey measures the participation rate and time spent on paid activities, care activities, unpaid activities, etc.
- It has collected data on time dispositions of household members, is an area of survey introduced in response to demands from various stakeholders.
- It is an important source of information about the activities that are performed by the population and the time duration for which such activities are performed.
- One distinguishing feature of Time Use Survey from other household surveys is that it can capture time disposition on different aspects of human activities, be it paid, unpaid or other activities with such details which is not possible in other surveys.
- The survey has covered the whole of the Indian Union except the villages in Andaman and Nicobar Islands which are difficult to access.
- The survey has been conducted from 1st January, 2019 to December 2019 in four sub-rounds.

Findings of the survey

- As per the survey, only 38.2 per cent of the population participates in "employment and other related activities", spending 429 minutes (7 hours and 9 minutes) on an average each day.
- It also states that there is a wide gender disparity, with only 18.4 per cent women participating in employment activities compared with 57.3 percent men; also, while men spend on an average 459 minutes (7 hours and 39 minutes), women spend only 333 minutes (5 hours and 33 minutes).
- It shows women participation in unpaid domestic services for household members – cooking, cleaning, household management – is as high as 81.2 per cent each day compared with 26.1 per cent for men.
- There is also a stark difference in the time spent by men and women in care-giving activities to a dependent child or an adult.
- While only 14 per cent of men participate in unpaid care giving services for household members spending on average 76 minutes a day (1 hour and 16 minutes), the share of women((2 hours 14 minutes)) is double at 27.6 per cent

Motor vehicle aggregator guidelines 2020

Economy

Why in news?

The Ministry of Road Transport and Highways has issued the Motor Vehicle Aggregator Guidelines 2020 as per the requirements and provisions of the Motor Vehicles (Amendment) Act, 2019 and the Motor Vehicles Act, 1988.



Objectives of the guidelines

- **Regulating shared mobility and reducing traffic congestion and pollution**, the Motor Vehicles Act, 1988 has been amended by the Motor Vehicles Amendment Act, 2019 to include the definition of the term 'aggregator'. Prior to the amendment the regulation of Aggregator was not available
- To provide **ease of doing business, customer safety** and driver welfare

Significance of the guidelines

- **License issued by the State Government is a mandatory** re-requisite for permitting business operations by the aggregator.
- For regulating the aggregators, the guidelines specified by the **Central Government may be followed by State Governments**
- In order to ensure compliance with the license requirements the Act stipulates **penalties under Section 93 of the Act**.
- These Guidelines seek to **establish a regulatory framework for aggregators by State Governments** to ensure that the aggregators are accountable and responsible for the operations executed by them.
- The business shall also be considered as a service provided by the aggregators to serve the larger public interest in terms of **generation of employment**, commutation facilities to the public which is cost effective and comfortable.
- Enable the government to achieve its goal of ensuring **maximisation of using public transport, reduced fuel consumption** consequently reducing the import bill, reduced vehicular pollution thereby reduced harm to human health.
- This Ministry vide notification dated 18th October, 2018 has exempted the electric vehicles and vehicles running on Ethanol or Methanol from the requirements of Permit. The State Governments to facilitate operations of such vehicles.

HYBRID RENEWABLE ENERGY

Economy

Why is it in news?

The Ministry of New and Renewable Energy has proposed a new scheme to develop Wind-Solar Hybrid Parks. The scheme aims to address the key issues faced by renewable energy projects

About the proposed scheme

The Wind-Solar Hybrid park will be a concentrated zone of power projects. It will provide an area with the required infrastructure. This will include evacuation facilities as well. The evacuation areas are important to minimise the risks of the projects. The sites to develop the wind-solar hybrid parks are to be selected by National Institute of wind Energy

Benefits

The park will help to fasten the development of wind power in the country. The scheme will help to minimise uncertainties faced by the developer such as clearances, land, transmission, etc. The development of wind power is scarce as it requires scattered land and thus the transmission cost is high. The scheme will help the DISCOMs to fulfil their non-solar Renewable Purchase Obligation (RPO).

What is hybrid renewable energy?

- Hybrid renewable energy usually **comprises of two or more renewable energy sources combined in such a way to provide an efficient system** with appropriate energy conversion technology connected together to feed power to local load or grid.
- Renewable Energy Hybrids are the **solution to a reliable, affordable and dispatchable integration of renewable energies**, from the combination and integration of renewable energy generation sources with one

another, such as wind and solar.

- There are different types of hybrid renewable energy systems like **Biomass-wind-fuel cell, Photovoltaic-wind, Hydro-wind and Photovoltaic-Biomass** etc.

Concerns with hybrid renewable energy parks

- **High installation cost:** Initial investment for the installation of a hybrid renewable energy systems is high as compared to installation of pure wind or solar systems.
- **Grid security and stability:** These systems can be connected to a utility grid and often frequency mismatch arises between both systems leads to instability of the overall system.
- **Environmental impact:** There are concerns about the impact of renewable energy parks on ecology and wildlife in the region.
- **Resource location:** Hybrid renewable energy plants require large areas of space, hence availability and acquisition of such large scale of land delaying the installation of parks.
- **Weather condition:** As energy generation from park is dependent on associated local weather and if favourable weather is not available then operating capacity of park becomes inefficient and unfeasible.

MODEL TENANCY ACT, 2019

Economy

Why is it in News?

The Ministry of Housing and Urban Affairs ("**Ministry**") has prepared a Draft Model Tenancy Act, 2020 ("**MTA**") with the objective of balancing the interests and rights of landlords and tenants and to create a more efficient and transparent system for renting premises, both residential and commercial barring those for industrial use.

Why we need a new tenancy law?

- The existing rent control laws are restricting the growth of the rental housing segment and discourage the landowners from renting out their vacant premises.
- Policy states that transparency must be brought into the housing sector by fixing the accountabilities of landlords and tenants to promote rental housing at a time when the government is chasing its Housing-For-All-By-2022 target.
- Since land comes under state list, States have their own laws with long drawn legal provisions which result in lengthy litigation to resolve disputes.
- Low rental yield is accrued from residential properties – averaging not more than 3% in major cities. Existing rent control laws that put a ceiling on rent are restrictive in nature.
- The affordability to own a house is a challenge especially for low-income households.
- Non-availability of affordable accommodation was the key reason behind migrant leaving towns amidst COVID-19 pandemic.
- Exorbitant increase in year-on-year rent and interference by landlord too have caused disputes.
- This has made rental housing financially unattractive resulting into informal sub-standard rental market lacking basic amenities.



About Draft Model Tenancy Act, 2019

- It envisages to balance the interest and rights of both the owner and tenant and to create an accountable and transparent ecosystem for renting the premises in disciplined and efficient manner.
- The Model Act provides for its applicability for the whole of the State i.e. urban as well as rural areas in the State.

Features

- Establish Rent courts and Tribunals
- Rent Authority may direct for compensation on the person responsible for cutting off or withholding the essential supply.
- To ensure speedy redressal of disputes, it also proposes to establish Rent Court and Rent Tribunal that have to dispose off the cases within 60 days.
- Act provides for fast-track quasi-judicial mechanism for adjudication of disputes. Officer of the rank of deputy collector or higher will act as rent authority to adjudicate any issue arising out of a rental disagreement
- All premises (residential or commercial) shall be rented only after a written agreement on mutually agreed

terms.

- Landlord cannot arbitrarily increase the rent in variance with what has been agreed to in the agreement and Property owner has to give 3 month notice before increasing rent.
- It proposes to cap the security deposit to maximum of two month's rent in case of residential properties and Security deposit to be refunded by the landlord at the time of taking over vacant possession of the premises.
- Repair and Maintenance: If the landowner refuses to carry out the required repairs, the tenant can get the work done and deduct the same from periodic rent.
- A landowner cannot enter the rented premises without 24-hour prior notice to carry out repairs or replacement.

Agreement

- A digital platform will be set up in local vernacular language of the State for submitting tenancy agreement and other documents.
- The tenant cannot sublet a part of or the whole property or carry out any structural change without execution of supplementary agreement between landlord and tenant.
- Land owner cannot cut power and water supply in case of a dispute with the tenant.
- Act acknowledges property manager (the one who manages property on behalf of the landlord) as a legal entity. It further provides for duties of property manager and consequences of violation of duties.

Impact

- **Rent authority:** Currently, rent agreements are registered at the sub-registrar's office. In order to bring transparency, fix accountability and promote fairness in the rental housing segment, the policy proposes setting up of a rent authority. So far, there is no official data source to analyse data related to rental real estate. This informality is the key reason why this housing segment, despite its huge potential, remains largely untapped.
- **Rent courts/rent tribunals:** The policy envisages setting up of rent courts/rent tribunals to hear disputes. So far, landlords/tenants have to move civil courts in case of contention. So in case of an issue, the parties concerned must first approach the rent authority. India's lower courts are overburdened which leads to contending parties finding no relief for years. A segment-specific court would mean grievance redressal mechanism would work efficiently. This would generate in landlords the confidence to let out their units, which they otherwise shy away from, fearing squatting and other such unfavourable consequences.
- **Cap on security deposit:** Landlords, says the policy, cannot ask for more than two months' rent as security deposit. In cities such as Mumbai and Bengaluru, landlords demand the tenant's deposit at least a year's rent as a security deposit. This makes renting almost impossible for a large section of the working population. A cap on security deposits would make a correction in these markets, where housing is expensive and renting is not cheap either. Tenants in other big cities would benefit equally from the more.
- **Cap on rent revision:** If a rent agreement is created for a specific period, landlords will not be able to increase the rent in between. However, tenants must be careful while the terms and conditions of the agreement are set. If a provision expressly states that the landlord can hike the rent as he deems fit, they would be within their right to do so. Also, the landlord will have to give a written notice three months in advance before revising rent. Arbitrary rent hiked by landlords is quite common in Indian rental real estate. A provision that limits landlords' right in this regard would benefit the tenants immensely.
- **Penalty on overstay:** In case a tenant continues to live in the rented accommodation after the tenure of the rent period has expired, they will have to pay the landlord twice the monthly rent for two months and four times the monthly rent in the months thereafter.
- **Maintenance responsibility:** The Act says landlords and tenants are equally responsible for maintaining the premises unless the rent agreement sets specific conditions over the matter. In case the unit is not fit for habitation because no regular maintenance has been carried out, the tenant would be within his right to leave it after serving a 15-day notice period.
- **Promoting Housing**
- It will encourage private participation in rental housing for addressing the huge housing shortage across the country.
- It provides relief for both tenants and landlords and help to take some load off India's overburdened litigation process.
- It will enable creation of adequate rental housing stock for various income segments of society including migrants, formal and in formal sector workers, professionals, students etc.
- It will increase access to quality rented accommodation and enables gradual formalization of rental housing market.
- It complements the government's vision of Housing for All' by 2022.
- It will bring transparency and accountability in the existing system of house renting.

Emergency Credit Line Guarantee Scheme

Economy

Why is in news?

Government extends the credit guarantee scheme to the health sector and 26 other sectors identified by the Kamath Committee.

Aims of the scheme

The Scheme is a specific response to the unprecedented situation COVID-19. It seeks to provide much needed relief to the MSME sector by incentivizing Member Lending Institutions (MLIs), to provide additional credit of up to Rs. 3 lakh crore at low cost, thereby enabling MSMEs to meet their operational liabilities and restart their businesses

About the scheme

- This scheme was announced by the government earlier this month as part of the Rs 2.65 lakh crore Atmanirbhar Bharat 3.0 package.
- The ECLGS 2.0 will provide 100% guaranteed collateral-free additional credit at capped interest rates to entities in the 26 stressed sectors, plus the health sector
- **Five year term:** The loans provided under ECLGS 2.0 will have a five-year tenor, with a 12-month moratorium on repayment of principal
- **Additional funding:** As per the new scheme, these entities or borrower accounts will be eligible for additional funding up to 20 per cent (which could be fund based or non-fund based or both) of their total outstanding credit (fund based only) as a collateral free Guaranteed Emergency Credit Line (GECL), which would be fully guaranteed by National Credit Guarantee Trustee Company Ltd (NCGTC)
- **Extending ECLGS 1.0:** In addition to ECLGS 2.0, where no annual turnover ceiling has been prescribed, it has also been decided to extend ECLGS 1.0 to entities under ECLGS which had a total credit outstanding (fund-based only) of up to Rs 50 crore as on February 29, 2020, but were previously ineligible owing to their annual turnover exceeding Rs 250 crore.
- **Applicability:** The scheme would be applicable to all loans sanctioned under ECLGS during the period from the date of issue of these guidelines by NCGTC to March 31, 2021 or till guarantees for an amount of Rs 3 lakh crore is sanctioned under the ECLGS (taking into account both ECLGS 1.0 and 2.0), whichever is earlier.
- **Contributing to economic revival:** New scheme, while providing an incentive to Member Lending Institutions (MLIs) to enable availability of additional funding facility to the eligible borrowers, both MSMEs/business enterprises and identified sectors that supports MSMEs, will go a long way in contributing to economic revival, protecting jobs, and create conducive environment for employment generation

State of Food and Agriculture

Economy

Why is it in news?

According to a flagship report published by the Food and Agriculture Organization (FAO) around 1.2 billion people globally experienced very high levels of water stress.

Key highlights of report

- Nearly half of the 1.2 billion people lived in south Asia, while 460 million lived in east and southeast Asia.
- In central Asia, west Asia and north Africa, about one-fifth of the population lived in agricultural areas with very high water shortages or scarcity.
- In Europe, Latin America and the Caribbean, north America and Oceania, only 1-4 per cent lived in extremely water-constrained areas. In sub-Saharan Africa, only about five per cent of the population lived in affected areas.
- In terms of agricultural land affected, 128 million hectares of rain-fed cropland and 656 million hectares of pastureland faced frequent droughts, while 171 million hectares of irrigated cropland were subject to high or very high water stress.
- In other words, about 11 per cent of rain-fed cropland and 14 per cent of pastureland experienced severe recurring droughts, while more than 60 per cent of irrigated cropland was highly water-stressed.
- More than 62 million hectares of cropland and pastureland experienced both, severe water stress and drought frequency, affecting about 300 million people.
- The report also noted that the annual amount of available freshwater resources per person had declined by more than 20 per cent in the past two decades.



India 's water crisis :

- India is currently facing the biggest crisis in its history. And no, it's not COVID-19. India is suffering from one of the world's worst national water crises. In fact, it is considered the center of the global water and sanitation crisis.
- More than 50% of the population has no access to safe drinking water and about 200,000 people die every year for lack of access to safe water.
- The 2018 Composite Water Management Index (CWMI) noted that 6% of economic GDP will be lost by 2050, while water demand will exceed the available supply by 2030.
- Food supply is also at risk as areas for wheat cultivation and rice cultivation face extreme water scarcity.

Mapping the SDG target

- The report said the first estimates for Sustainable Development Goal (SDG) Indicator 6.4.2 on water stress, together with persistent water shortages in rain-fed agriculture, suggested that ensuring sustainable management of water for all remained a challenge.
- As water was closely linked to several other United Nations-mandated SDGs, not least that of achieving Zero Hunger, managing scarce water resources well would be a critical determinant for fully achieving them, the report said.

Sustainable water management

- The UN called for better management of water, especially in agriculture, to keep resources in check and boost agricultural yields. Agriculture accounts for 70 per cent of the world's freshwater withdrawals.
- From investing in water-harvesting and conservation in rain-fed areas to rehabilitating and modernising sustainable irrigation systems in irrigated areas, actions had to be combined with the best agronomic practices, the report said.
- Water accounting and auditing, which were rarely done, should be the basis for any effective strategy for addressing water shortages and scarcity, especially in agriculture, the report said.

Fisheries and Aquaculture Infrastructure Development Fund (FIDF)**Economy****About the fund**

- Creation and modernization of capture & culture fisheries infrastructure
- Creation of Marine Aquaculture Infrastructure
- Creation and modernization of Inland Fisheries Infrastructure
- Reduce post-harvest losses and improve domestic marketing facilities through infrastructure support.
- To bridge the resource gap and facilitate completion of ongoing infrastructure projects.

Implementation agencies

- National Bank for Agriculture and Rural Development (NABARD)
- National Cooperatives Development Corporation (NCDC)
- All scheduled Banks

Features of the fund

- It was set up by Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.
- FIDF envisages creation of fisheries infrastructure facilities both in marine and inland fisheries sectors and augment the fish production to achieve the target of 15 million tonnes by 2020 set under the Blue Revolution.
- It aims to achieve a sustainable growth of 8-9 per cent, in a move to augment the country's fish production to the level of about 20 million tonnes by 2022-23.
- In the Union Budget 2018, the Hon'ble Finance Minister has announced to set aside a corpus of Rs. 10,000crores for setting up of a Fisheries and Aquaculture Infrastructure Development Fund (FIDF) for fisheries sector
- The proposed Fund entails an estimated fund size of Rs 7522.48 Crore comprising of Rs 5266.40 crore to be raised by the Nodal Lending Entities (NLEs), Rs 1316.60 crore beneficiaries' contribution and Rs 939.48 crore budgetary support from Government of India.

Regional Cluster Concept**Economy**

- **Why is it in news?**
- Regional Cluster concept of economic development playing important role in Indian success story, as per UNIDO Representative.

ABOUT:

- United Nations Industrial Development Organisations (UNIDO) has been closely working with India to implement UN's activities in harmony with national policy priorities and development strategies.
- The UNIDO Regional Office in New Delhi acts as a focal point to promote UNIDO's mandate of inclusive and sustainable industrial development in India.

What are regional clusters and their economic importance?

- Interest in regional clusters and their role in economic development has grown substantially over the last several years among academics, economic development professionals, and firm managers.
- The main reasons have been:
 - the increased intensity of interregional and international competition in the world economy
 - the apparent shortcomings of traditional regional development models and policies
 - the emergence of successful clusters of firms and industries in many nations around the world

The **United Nations Industrial Development Organization (UNIDO)**, is a specialized agency in the United Nations system, headquartered in Vienna, Austria. The Organization's primary objective is the promotion and acceleration of industrial development in developing countries and countries with economies in transition and the promotion of international industrial cooperation. It is also a member of the United Nations Development Group.

UNIDO believes that competitive and environmentally sustainable industry has a crucial role to play in accelerating economic growth, reducing poverty and achieving the Millennium Development Goals. The Organization therefore works towards improving the quality of life of the world's poor by drawing on its combined global resources and expertise in the following three interrelated thematic areas:

- Poverty reduction through productive activities;
- Trade capacity-building; and
- Energy and environment.

Activities in these fields are strictly aligned with the priorities of the current United Nations Development Decade and related multilateral declarations, and reflected in the long-term vision statement, business plan and mid-term programme frameworks of UNIDO.

In order to fulfill these objectives, UNIDO

- assists developing countries in the formulation of development, institutional, scientific and technological policies and programmes in the field of industrial development;
- analyzes trends, disseminates information and coordinates activities in their industrial development;
- acts as a forum for consultations and negotiations directed towards the industrialization of developing countries; and
- provides technical cooperation to developing countries for implementing their development plans for sustainable industrialization in their public, cooperative and private sectors.

UNIDO thus works largely in developing countries, with governments, business associations and individual companies. The Organization's "service modules" are Industrial Governance and Statistics, Investment and Technology Promotion, Industrial Competitiveness and Trade, Private sector Development, Agro-Industries, Sustainable energy and Climate Change, Montreal Protocol, and Environmental management.

Viability Gap Funding VGF Scheme for Public Private Partnerships**Economy****Why is it in news?**

The government has expanded the provision of financial support by means of viability gap funding for public-private partnerships (PPPs) in infrastructure projects to include critical social sector investments in sectors such as health, education, water and waste treatment. **The revamped Scheme is mainly related to introduction of following two sub-schemes for mainstreaming private participation in social infrastructure**

Objectives of scheme:

- The revamped Scheme is mainly for mainstreaming private participation in social infrastructure.
- The aim of the scheme is to promote PPPs in social and Economic Infrastructure leading to efficient creation of assets and ensuring their proper Operation and Maintenance and make the economically/socially essential projects commercially viable.

Benefits:

- The aim of the scheme is to promote PPPs in social and Economic Infrastructure leading to efficient creation of assets and ensuring their proper Operation and Maintenance and make the economically/socially essential projects commercially viable.
- The scheme would be beneficial to public at large as it would help in creation of the Infrastructure for the country.

Implementation Strategy:

- The new Scheme will come into force within one month of the approval of Cabinet. Proposed amendments under the revamped VGF scheme would be suitably incorporated in the Guidelines for the Scheme. All steps will be taken up for the promotion of the revamped VGF and in monitoring of the supported projects.

Impact:

- Revamping of the proposed VGF Scheme will attract more PPP projects and facilitate the private investment in the social sectors (Health, Education, Waste Water, Solid Waste Management, Water Supply etc.). Creation of new hospitals, schools will create many opportunities to boost employment generation.

Components of scheme: There are two components of scheme namely:

- **Sub scheme -1**

- o The Central Government will provide a maximum of 30% of Total Project Cost (TPC) of the project as VGF and State Government/Sponsoring Central Ministry/Statutory Entity may provide additional support up to 30% of TPC.
- o Eligibility:
 - This is for Social Sectors projects such as Waste Water Treatment, Water Supply, Solid Waste Management, Health and Education sectors etc.
 - These projects face bankability issues and poor revenue streams.
 - The projects should have at least 100% Operational Cost recovery.

- **Sub scheme -2**

- This Sub scheme will support demonstration/pilot social sectors projects.
- In such projects, the Central Government and the State Governments together will provide up to 80% of capital expenditure and upto 50% of Operation & Maintenance (O&M) costs for the first five years.
- Eligibility: The projects may be from Health and Education sectors where there is at least 50% Operational Cost recovery.

Public-private partnership (PPP):**Viability Gap Funding (VGF) Scheme**

Viability Gap Finance means a grant to support projects that are economically justified but not financially viable. The scheme is designed as a Plan Scheme to be administered by the Ministry of Finance and amount in the budget are made on a year-to-year basis.

Such a grant under VGF is provided as a capital subsidy to attract the private sector players to participate in PPP projects that are otherwise financially unviable.

Projects may not be commercially viable because of the long gestation period and small revenue flows in future. The VGF scheme was launched in 2004 to support projects that come under Public-Private Partnerships.

Funding of VGF

Funds for VGF will be provided from the government's budgetary allocation. Sometimes it is also provided by the statutory authority who owns the project asset.

If the sponsoring Ministry/State Government/ statutory entity aims to provide assistance over and above the stipulated amount under VGF, it will be restricted to a further 20% of the total project cost.

DISCOMs**Economy****Why is in news?**

Ministry of Power mandates all DISCOMs to comply Energy Conservation (EC) Act,2001

About DISCOMS

After this notification, all the DISCOMs will be governed under the various provisions of EC Act, such as Appointment of Energy Manager, Energy Accounting & Auditing, identification of Energy Losses Category wise, Implementation of energy conservation & efficiency measures etc.

- Earlier, the DISCOMs whose annual energy losses were equal to or above 1000 MU were only covered as DCs. Now with this notification, the number of DISCOMs covered under the EC Act will increase from 44 to 102.
- This decision will facilitate Energy Accounting & Auditing as mandatory activity for all the DISCOMs, leading to the actions towards reducing losses and increase profitability of DISCOMs.
- The amendment is expected to help DISCOMs to monitor their performance parameters and bring in transparency in the Distribution sector through professional inputs.
- It will also assist in developing projects for reducing the electricity losses by DISCOMs and implementing effective solutions.

Bureau of Energy Efficiency

- Bureau of Energy Efficiency (BEE) is a statutory body under the Ministry of Power, Government of India.
- It assists in developing policies and strategies with the primary objective of reducing the energy intensity of the Indian economy.
- BEE coordinates with designated consumers, designated agencies, and other organizations to identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the ECA Act.
- The amendment is expected to improve the financial state of the DISCOMs. This move is expected to gradually become more effective if extended up to the level of end consumers.

Micro Food Processing Enterprises (PM-FME) Scheme

Economy

Why is in news?

Union Minister for Food Processing Industries has inaugurated the capacity building component of the Pradhan Mantri Formalization of Micro food processing Enterprises scheme (PM-FME Scheme). The event also sought the launch of the GIS One District One Product (ODOP) Digital Map of India.

About the scheme

PM-FME Scheme

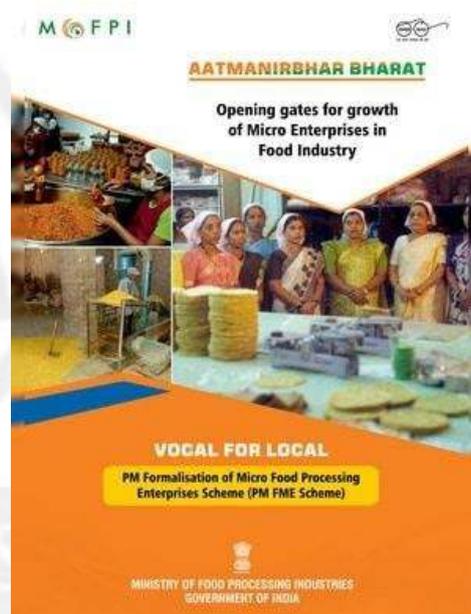
- Launched under the Aatmanirbhar Bharat Abhiyan, the PM-FME Scheme is a centrally sponsored scheme.
- It aims to enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector.
- It seeks to provide support to Farmer Producer Organizations, Self Help Groups, and Producers Cooperatives along their entire value chain.
- Under the PM-FME scheme, capacity building is an important component.
- The scheme envisages imparting training to food processing entrepreneurs, various groups, viz., SHGs / FPOs / Co-operatives, workers, and other stakeholders associated with the implementation of the scheme.

Features of the scheme

- The Scheme adopts One District One Product (ODOP) approach to reap the benefit of scale in terms of procurement of inputs, availing common services and marketing of products.
- The States would identify food product for a district keeping in view the existing clusters and availability of raw material.
- The ODOP product could be a perishable produce based product or cereal-based products or a food product widely produced in a district and their allied sectors.
- An illustrative list of such products includes mango, potato, litchi, tomato, tapioca, kinno, bhujia, petha, papad, pickle, millet-based products, fisheries, poultry, meat as well as animal feed among others.
- The Scheme also place focus on waste to wealth products, minor forest products and Aspirational Districts.

About ODOP Digital Map

- The GIS ODOP digital map of India provides details of ODOP products of all the states to facilitate the stakeholders.
- The digital map also has indicators for tribal, SC, ST, and aspirational districts.
- It will enable stakeholders to make concerted efforts for its value chain development.



Bloomberg New Economy Forum

Economy

Why is it in news?

- Prime Minister addressed at the 3rd Annual Bloomberg New Economy Forum, 2020.

What is Bloomberg New Economic Forum?

- This Forum was established in 2018 by Mr. Michael Bloomberg.
- It seeks to build a community of leaders to engage in real conversations leading to actionable solutions about the critical challenges facing a world economy in the throes of a historic transition.

- A select group of companies play an active role in shaping Bloomberg New Economy, including the forum.

The mission of the forum

- To realize the potential of a healthy New Economy by enabling global leaders from East and West to forge common ground.

Its annual forums

- The inaugural Forum was held in Singapore, and the second annual Forum was hosted in Beijing.
- These covered a range of topics, including global economic management, trade and investment, technology, urbanization, capital markets, climate change, and inclusion.
- This year the forum witnessed discussions centered on refuelling the economy (which was affected by Covid-19 pandemic) and charting a course for the future.

Moratorium on Lakshmi Vilas Bank

Economy

Why in news?

Reserve Bank of India imposed a 30-day moratorium (temporary suspension of activities) on Lakshmi Vilas Bank Ltd (LVB) & proposed a draft scheme for its amalgamation with DBS Bank India.

Why this merger?

- The government had earlier on the advice of the RBI imposed a **30-day moratorium on the crisis-ridden LVB** restricting cash withdrawal at Rs 25,000 per depositor.
- The RBI simultaneously placed in public domain a draft scheme of amalgamation of LVB with DBIL, a banking company incorporated in India under Companies Act, 2013.
- The Reserve Bank had also **superseded the board of the LVB** and appointed an administrator of the bank for 30 days.
- It was done to **protect depositors' interest** and the interest of financial and banking stability.
- **LVB is the second private sector bank after Yes Bank** which has been troubled this year.
- The government rescued Yes Bank by asking state-run State Bank of India to infuse Rs 7,250 crore and take 45 per cent stake in the bank.

Prompt Corrective Action (PCA)

- It is a framework **under which banks with weak financial metrics** are put under watch by the RBI.
- **Applicable:** The PCA framework is applicable **only to commercial banks** and not to co-operative banks and non-banking financial companies (NBFCs).
 - It may be noted that of the 21 state-run banks, **11 are under the PCA framework.**
- It **aims to check the problem of Non-Performing Assets (NPAs)** in the Indian banking sector.
- Essentially **PCA helps RBI monitor** key performance indicators of banks, and taking corrective measures, to restore the financial health of a bank.
- The PCA framework deems banks as risky if they slip some **trigger points** - capital to risk weighted assets ratio (**CRAR**), net **NPA**, Return on Assets (**RoA**) and **Tier 1 Leverage ratio**.
- It has **three risk threshold levels** (1 being the lowest and 3 the highest) based on where a bank stands on these ratios.

Measures under PCA

- Depending on the threshold levels, the RBI can place **restrictions on dividend distribution, branch expansion, and management compensation.**
- Only in an extreme situation, **breach of the third threshold**, would identify a bank as a likely candidate for resolution through amalgamation, reconstruction or winding up.

Why Investors in Lakshmi Vilas Bank (LVB) are unhappy over its amalgamation with Singapore's DBS Bank?

- The Reserve Bank of India's (RBI) proposed to write off LVB's entire paid-up equity capital and reserves, resulting in a zero value of its shares.
- The situation is similar to that of Yes Bank's AT-1 (additional tier-1) bond investors, who suffered a total write-down of their Rs 8,415 crore holdings as part of a rescue plan.
- The LVB's shareholders, like Yes Bank's AT-1 bondholders, are demanding compensation for the forced extinguishing of their investments.

The question of who is more important an Investor or a depositor?

- The RBI's concern as a banking sector regulator is to first secure the interest of depositors because Banks, unlike regular companies, make money not from owning plants, machinery and property instead, it is derived from deploying other people's money primarily deposits.
- No bank, however well-capitalised, can survive if depositors decide to pull out money.

Why the choice of amalgamating with DBS is right?

- Unlike public sector banks that are burdened with stressed loans and requirement of fund infusion, DBS has committed to bring in additional capital of Rs 2,500 crore upfront.
- Also, despite being a foreign bank, it has chosen to operate in India through a wholly-owned subsidiary, as opposed to just having branches.
- Has submitted itself to the RBI's more stringent regulatory requirements, and DBS will be able to add 550-plus branches to its existing 33. This will send a strong signal to other foreign banks to pursue greater growth opportunities

Unified single window clearance system for FDI

Economy

Why is in news?

A new, unified single window clearance system for foreign direct investment (FDI) proposals would be in place by March 31

Key highlights

- According to the secretary in the department of promotion of industry and internal trade under the Ministry of Commerce and Industry, the single window clearance system being developed will be 'very effective' and enable the potential investor to interact with all the Ministries whose approvals are required, in the central government as well as in the States.
- This window will help investors a lot in not just getting information about the status of approvals, but in getting faster approvals
- This portal provides end-to-end facilitation support, including the pre-investment advisory, information related to land banks and facilitating clearances both at Central and state level.
- A brief note on the present Foreign Investment Facilitation Portal of India
- It is the online single point interface of the Government of India for investors to facilitate Foreign Direct Investment.
- This portal is being administered by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.
- This portal will continue to facilitate the single window clearance of applications which are through the approval route.
- Upon receipt of the FDI application, the concerned Administrative Ministry/Department shall process the application as per the Standard Operation Procedure (SOP).

RE-Invest 2020

Economy

Why is in news?

Prime Minister inaugurated the virtual 3rd Global Renewable Energy Investment Meeting and Expo (RE-Invest 2020). The summit was organised by the Ministry of New and Renewable Energy.

About RE-INVEST 2020

- The 3rd Global RE-INVEST Renewable Energy Investors Meet & Expo is organized by the Ministry of New and Renewable Energy (MNRE) and it is being held from 26 – 28 November 2020
- RE-INVEST 2020, **themed 'Innovations for Sustainable Energy Transition'** aims to accelerate the worldwide effort to scale up development and deployment of renewable energy and connect the global investment community with Indian energy stakeholders.
- It is a 3-day conference on renewables and future energy choices, and an exhibition of manufacturers, developers, investors and innovators.
- RE-INVEST 2020 is expected to be attended by over 75 international Ministerial delegations, over 1000 global industry leaders, and 50,000 delegates.



- A second plenary of the 'One Sun One World One Grid'—that seeks to transfer solar power generated in one region to feed the electricity demands of others—has also been planned during the RE-Invest

Renewable energy target by India

- India has a plan to achieve 175 gigawatts (GW) by 2022 and 450GW by 2030 as part of its climate commitments. Of this, while 89 GW has been installed, 48 GW is under implementation and another 26 GW is being bid out.

Current status of renewable energy in India

- India's renewable power capacity is the 4th largest in the world.
- It is growing at the fastest speed among all major countries.
- The renewable energy capacity in India is currently 136 Giga Watts, which is about 36% of our total capacity

India's target to reduce its carbon footprint

- India plans to reduce its carbon footprint by 33-35% from its 2005 levels by 2030, as part of its commitments to the United Nations Framework Convention on Climate Change adopted by 195 countries in Paris in 2015.

SDG Investor Map for India

Economy

Why in news?

UNDP and Invest India have launched the SDG Investor Map for India, laying out 18 Investment Opportunities Areas (IOAs) in six critical SDG enabling sectors, that can help India push the needle forward on Sustainable Development.

About the SDG Investor Map for India

- UNDP and Invest India have launched the SDG Investor Map for India, laying out 18 Investment Opportunities Areas (IOAs) in six critical SDG enabling sectors, that can help India push the needle forward on Sustainable Development.
- Of the 18 IOAs identified, 10 are already mature investable areas that have seen robust Private Equity and Venture Capital activity, and feature companies that have been able to unlock scale and demonstrate profitability. The remaining eight IOAs are emerging opportunities, which have seen traction from early-stage investors.
- The map has also identified eight White Spaces, which have seen investor interest and have the potential to grow into IOAs within a 5-6-year horizon. However, these require further policy support and private sector participation to mature into commercially attractive IOAs.
- Nearly 50% of the shortlisted IOAs have historical investments that have yielded IRRs in excess of 20%.
- 84% of the IOAs have investment timeframes ranging from the short term (less than 5 years) to the medium-term (between 5- 15 years).



Significance

- The observations from the map present a strong case for investing in SDG enabling sectors and IOAs, bridging the gap between high-level development targets and the need for commercially viable returns. Moreover, investing in the SDGs is crucial to 'Building Back Better' from COVID-19 and enhancing India's resilience to future threats.
- Investing in opportunities that enhance employment and employability, push forward the inclusion of underserved communities and leverage technology will be of essence to India as it grapples with the challenges of a post-COVID economy
- By mapping the overlaps and gaps between public sector priorities and private sector interest, the SDG Investor Map lays out pathways that can bring together private-sector investment and public sector support for 6 SDG-enabling sectors including Education, Healthcare, Agriculture & Allied Activities, Financial Services, Renewable Energy & Alternatives and Sustainable Environment.

Context:

- The Code on Social Security Bill, 2020, for the first time in Indian law, attempted to define 'platform work' outside of the traditional employment category.
- It says: "Platform work means a work arrangement outside of a traditional employer-employee relationship in which organisations or individuals use an online platform to access other organisations or individuals to solve specific problems or to provide specific services or any such other activities which may be notified by the Central Government, in exchange for payment."
- While the long over due move to recognise platform work has been made, the Code has drawn criticism from platform workers' associations for failing to delineate it from gig work and unorganised work.
- A categorical clarification could ensure that social security measures are provided to workers without compromising the touted qualities of platform work: flexibility and a sense of ownership.

Platform worker's rights:

- An ongoing global conversation on platform workers' rights has been around the
 - Misclassification of platform workers as 'independent contractors';
 - Adjudications and emerging amendments to labour laws in Ontario and California have shown a move towards granting employee status to platform workers, thus guaranteeing minimum wage and welfare benefits.
- This is the view propagated by international agencies in the EU, including the European Trade Union.

Flexibility of the platform:

- The ostensible preference for employment status stems from the fact that while platform work promises workers flexibility and ownership over delivery of work, they are still largely dictated by mechanisms of control wired by the algorithm.
- This affects pricing per unit of work, allocation of work, and hours.
- Additionally, entry into on-demand platform work like ride sharing and food delivery are dependent on existing access to vehicular assets.
- The average Indian worker on a ride-sharing platform has limited access to such capital.
- Thus, to enter the platform economy, workers rely on intensive loan schemes, often facilitated by platform aggregator companies.
- This results in dependence on platform companies, driven by financial obligations, thus rendering flexibility and ownership moot in the short- to middle-term investment cycle.
- However, contrasting evidence suggests that for specific categories of workers with basic access to capital, the flexibility of the platform is a significant attraction.
- Smallholder agrarian labour migrants with access to vehicular assets and capital hailing from peri-urban areas rely on the low barrier of entry and flexibility of platform work to accumulate wealth that they invest back into farmwork.

Conclusion:

- The Code states the provision of basic welfare measures as a joint responsibility of the Central government, platform aggregators, and workers.
- However, it does not state which stakeholder is responsible for delivering what quantum of welfare.
- To mitigate operational breakdowns in providing welfare services, a tripartite effort by the State, companies, and workers to identify where workers fall on the spectrum of flexibility and dependence on platform companies is critical.
- The role of platform workers amidst the pandemic has presented a strong case to attribute a more robust responsibility to platform aggregator companies and the State.
- As argued by Aditi Surie, platform workers were responsible for delivery of essential services during the pandemic at great personal risk to themselves.
- They have also been responsible for keeping platform companies afloat despite the pandemic-induced financial crisis.
- This has cemented their role as public infrastructures who also sustain demand-driven aggregators.
- The dependence of companies on platform workers merits a jointly assumed responsibility by public and private institutions to deliver welfare measures.

Way forward:

- Adopting International best practices- Ontario and California have shown a move towards granting employee status to platform workers, thus guaranteeing minimum wage and welfare benefits.
- Further, the government needs to ensure easy availability of credit to platform workers.

Virtual Global Investor Roundtable (VGIR)

Economy

Context- Prime Minister has chaired the Virtual Global Investor Roundtable (VGIR), with an aim to attract investment.

What Virtual Global Investor Roundtable (VGIR) 2020 conference?

It is an exclusive dialogue between leading global institutional investors, Indian business leaders and the highest decision-makers from the Government of India and Financial Market Regulators.

- **Organized by**– Ministry of Finance and the National Investment and Infrastructure Fund(NIIF).
- **Focus for 2020**– Discussions around India's economic and investment outlook, structural reforms and the government's vision for the path to a USD 5 trillion economy by2024-25.

Key highlights of the conference-

- **National Infrastructure Pipeline**– Under it, India has an ambitious plan to invest USD1.5trillion in various social and economic infrastructure projects, aimed for faster economic growth and alleviation of poverty in the country.
- **India as safest investment hub**– Prime minister in this conference pitched India as the ideal destination and the country offered returns with reliability, demand with democracy, stability with sustainability and growth with a greenapproach.

What are the challenges for revival of investment?

- **Low FDI inflow in India** –Contraction in investment since July-September quarter in 2019 and then the Pandemic has caused a further shock.
- **Fixed investment** has continues to face an uncertain outlook given the weak consumption because of the Demand shock caused by pandemic.
- **Lack of funds**–the government's ability to apportion more funds for growth-spurring capital projects is hamstrung by a widening fiscal deficit amid border stand-off, the health crisis and revenue shortfall.
- The three-fourths of FDI equity inflows in 2019-20 fiscal-year being accounted by single large telecom company, a bulk of this investment is unlikely to manifest as new job-creating factories or businesses.
- **Lack of policy stability** – Bureaucratic procedures and corruption continue to make India less attractive to foreign investors.
- **Infrastructure** is also one of the issues that need to be addressed.

Single window approval for FDI

Economy

- **Context:** The government is working on a new, unified single-window clearance system for foreign direct investment (FDI) proposals.
- It is taking up several other active reform-related steps related to sovereign wealth funds and tax dispute settlements to continue the momentum of reforms. It also seeks feedback from global investors to make the system more functional.

Background:

- Despite the presence of several IT platforms for investing in India such as the Foreign Investment Facilitation Portal(FIFP) and state single-window clearances, investors need to visit multiple platforms to gather information and obtain clearances from different stake holders.
- FIFP is the online single point interface of the Government of India with investors to facilitate FDI.
- It is administered by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

About Single-window System:

- To address this, the creation of a centralised Investment Clearance Cell was proposed by the DPIIT.
- The cell will be a one-stop digital national portal that integrates the existing clearance systems of various ministries/departments of the government and will have a single, unified application form.
- It would provide end-to-end facilitation support, including pre-investment advisory, information related to land banks and facilitating clearances at Central and state level.
- It will allow digital access to regulators, policy makers and facilitators at one point irrespective of their geographical location and also provide time-bound approvals and a real-time status update to investors.
- It will enable the potential investor to interact with all the ministries whose approvals are required, in the central government as well as in the states.

Sovereign Wealth Funds:

- Despite the Covid-19 pandemic, the government has seen fresh interest from large sovereign wealth funds looking to invest in the country.
- In the Budget 2020-21, the government promised 100% tax exemption to the interest, dividend and capital gains income on the investment made in infrastructure and priority sectors before 31st March, 2024 with a minimum lock-in period of 3 years by the Sovereign Wealth Fund of foreign governments.
- A sovereign wealth fund is a state-owned investment fund composed of the money generated by the government, often derived from a country's surplus reserves.
- Despite lock downs, the National Infrastructure Investment Fund (NIIF) actively engaged with the investors to find out the best way to facilitate them with the benefits of the tax exemptions.

Floating rate bonds

Economy

What are floating rate bonds?

- Floating rate bonds, also known as floating rate notes, are a type of bond characterized by floating rate of interest.
- Unlike traditional bonds that pay a fixed rate of interest, floating-rate bonds have a variable rate that resets periodically.
- The frequency at which the yield of a floating rate note resets can be daily, weekly, monthly, or every three, six, or 12 months.

Advantages and Disadvantages

- The advantage of floating-rate bonds, compared to traditional bonds, is that interest rate risk is largely removed from the equation.
- While an owner of a fixed-rate bond can suffer if prevailing interest rates rise, floating rate notes will pay higher yields if prevailing rates go up.
- As a result, they will tend to perform better than traditional bonds when interest rates are rising.
- However, investors in floating-rate securities will receive lower income if rates fall because their yield will adjust downward.
- Also, investors in individual floating rate bonds lack certainty as to the future income stream of their investments.

Various types of bonds

- **Fixed rate bond:** It is a bond that pays the same level of interest over its entire term. An investor who wants to earn a guaranteed interest rate for a specified term could purchase a fixed rate bond in the form of a Treasury, corporate bond, municipal bond, or certificate of deposit (CD)
- **Mortgage bond:** This kind of a bond is secured by mortgage, or a pool of mortgages, that are typically backed by real estate holdings and real property, such as equipment
- **Zero Coupon bond:** It is a debt security that does not pay interest but instead trades at a deep discount, rendering a profit at maturity, when the bond is redeemed for its full face value.
- **Serial bond:** It is a bond issue that is structured so that a portion of the outstanding bonds mature at regular intervals until all of the bonds have matured. These bonds are used to finance projects that provide a consistent income stream for bond repayment
- **Callable/redeemable bond:** It is a bond that the issuer may redeem before it reaches the stated maturity date. A callable bond allows the issuing company to pay off their debt early
- **Extendable bond:** It is a long-term debt security that includes an option to lengthen its maturity period. Because these bonds contain an option to extend the maturity period, a feature that adds value to the bond, extendable bonds sell at a higher price than non-extendable bonds

Department of Investment and Public Asset Management (DIPAM)

Economy

Why in news?

DIPAM signs an agreement with World Bank for advisory services on Asset Monetization

About DIPAM

- DIPAM is one of the departments in the Ministry of Finance
- The Department of Disinvestment (now DIPAM) was set up as a separate Department on 10th December, 1999 and was later renamed as Ministry of Disinvestment from 6th September, 2001.



निवेश और लोक परिसंपत्ति प्रबंधन विभाग

DEPARTMENT OF
INVESTMENT AND PUBLIC ASSET
MANAGEMENT

- The department took up all the functions of the erstwhile ministry which broadly was responsible for a systematic policy approach to disinvestment and privatisation of Public Sector Units (PSUs).
- From 27th May, 2004, the Department of Disinvestment is one of the Departments under the Ministry of Finance.
- The Department of Disinvestment has been renamed as Department of Investment and Public Asset Management (DIPAM) from 14th April, 2016.
- Current Target of disinvestment for 2020-21 is Rs 1.20 lakh crore

Functions of DIPAM

1. As per the present Allocation of Business rules, the mandate of the Department is as follows:
 - All matters relating to management of Central Government investments in equity including disinvestment of equity in Central Public Sector Undertakings..
 - All matters relating to sale of Central Government equity through offer for sale or private placement or any other mode in the erstwhile Central Public Sector Undertakings.
2. Decisions on the recommendations of Administrative Ministries, NITI Aayog, etc. for disinvestment including strategic disinvestment.
3. All matters related to Independent External Monitor (s) for disinvestment and public asset management.
4. a. Decisions in matters relating to Central Public Sector Undertakings for purposes of Government investment in equity like capital restructuring, bonus, dividends, disinvestment of government equity and other related issues.
 - b. Advise the Government in matters of financial restructuring of the Central Public Sector Enterprises and for attracting investment in the said Enterprises through capital market.
5. The Unit Trust of India Act, 1963 along with subjects relating to Specified Undertaking of the Unit Trust of India (SUUTI).

Measures on Atmanirbhar Bharat 3.0

Economy

Why in news?

The government has announced a fresh set of measures, worth around Rs. 1.2 lakh crore, to boost job creation, provide liquidity support to stressed sectors and encourage economic activity in housing and infrastructure areas. Measures have been announced under Aatmanirbhar Bharat 3.0. The announcement of Expansion of Production Linked Incentives (PLI) Scheme to 10 more sectors is also a part of Atmanirbhar Bharat3.0.

Atmanirbhar Bharat RozgarYojana:

- It is aimed at incentivising the creation of new employment opportunities during the Covid- 19 economic recovery phase.
- It will provide subsidy for provident fund contribution for adding new employees to establishments registered with the Employees' Provident Fund Organisation (EPFO).
- The organisations of upto 1000 employees would receive employee's contribution (12% of wages) & employer's contributions (12% of wages), totalling 24% of wages, for two years.
- Employers with over 1,000 employees will get employees' contribution of 12%, for two years.
- The subsidy amount under the scheme will be credited upfront only in Aadhaar-seeded EPFO accounts (UAN) of new employees.
- Establishments registered with EPFO will be eligible for the benefits if they add new employees compared to the reference base of employees as in September 2020.
- Establishments, with up to 50 employees, would have to add a minimum of two new employees.
- The organisations, with more than 50 employees, would have to add at least five employees.

Relief for homebuyers

- Differential between circle rate and agreement value increased from 10 to 20%, till 30th June 2021 for only primary sale of residential units of value up to Rs 2 crore.

Boost for rural employment

- An additional **outlay of Rs 10,000 crore will be provided for the PM Garib Kalyan Rozgar Yojana** in the current financial year to accelerate rural economic growth. (PM Garib Kalyan Rozgar Yojana is in progress in 116 districts).

Fertilizer subsidy for farmers

- ARs 65,000-crore fertilizer subsidy for farmers has been announced.
- An additional outlay of Rs 10,000 crore will be provided for PM Garib Kalyan Rozgar Yojana in current financial year.
- Rs 3,000 crore will be released to EXIM Bank for promotion of 'Project Exports' through lines of credits.

Promise of new jobs

- Subsidy to be given to those EPFO registered establishments that make new hires.
- Would be to cover for retirement fund contributions by employees as well as employers for two years.
- Employees contribution (12% of wages) and employer's contribution (12% of wages) would be given to establishments for two years.
- Any new employee on monthly wages less than Rs. 15,000.
- The scheme would be operational till June 30, 2021.

Emergency Credit Line Guarantee Scheme extended

- ELGS 1.0 extended till 31st March, 2021.
- It would be fully guaranteed and collateral free.
- Additional credit of up to 20% of outstanding loans will be given for entities with outstanding credit up to Rs 50 crore and annual turnover up to Rs 250 crore.
- MSMEs, business enterprises, individual loans for business purposes and MUDRA borrowers will be eligible.
- The scheme will be available till 31 March, 2021.
- The scheme will be utilized for 100 percent guarantee collateral free additional credit at capped interest rates.
- This will be for Entities in 26 stressed sectors identified by Kamath Committee with credit outstanding above Rs 50 crore and up to Rs 500 crore.
- Entities with outstanding up to Rs 50 crore covered under the existing scheme.

The plan to take on China

- Current five-year PLI scheme extended to ten more sectors.
- Total allocation of Rs 1.46 lakh crore.
- Special focus to draw businesses away from China.

PM AwaasYojana-Urban (PMAY-U)

- Rs 18,000 crore will be provided for PMAY-U over the 2020-21 budget estimates through additional allocation.
- This may help 12 lakh houses to be grounded and for 18 lakh houses to be completed.
- Expected job creation of 78 lakhs.

Relief to contractors

- Earnest money deposit (EMD) and performance security on govt tenders relaxed by reducing locking up of capital.
- Performance security on contracts will be reduced to 3 per cent, and will be extended to ongoing contracts which are free of disputes.
- EMD will not be required for tenders, being replaced by Bid Security Declaration.
- Relaxations will be given till 31 December, 2021 under the General Financial Rules.

Booster shot to vaccine research:

- Rs 900 crore grant to the Department of Biotechnology for COVID-19 vaccine research.
- The grant does not cover the actual cost of vaccine and distribution expenses, which will be made separately as and when the vaccine is available.

Infrastructure debt financing:

- NIIF Strategic Opportunities Fund has set up a debt platform comprising an NBFC Infra Debt Fund and NBFC Infra Finance Company.
- By 2025, will provide infrastructure project financing of Rs 1,10,000 crore.
- NIIF has already invested nearly Rs 2,000 crore in equity of the platform, and the govt will be investing Rs 6,000 crore as equity, with the rest being raised from private investors.

Capital and industrial stimulus:

- Rs 10,200 crore additional budget outlay will be provided towards capital and industrial expenditure, which covers domestic defence equipment, industrial incentives, industrial infrastructure and green energy.

Boost For Project Exports:

- Rs 3,000 crore will be released to Exim Bank for promotion of project exports through lines of credit (LOC) under the IDEAS scheme.
- It promotes Indian export by mandating recipient countries to import 75 per cent value of the LOC.

Insider Trading

Economy

Why in news?

Recently, Amazon accused the future of insider trading and asked SEBI to probe it.

What is insider trading?

- It is a trading of a public company's stock or other securities (such as bonds or stock options) based on material, nonpublic information about the company.
- It is defined as a malpractice wherein trade of a company's securities is undertaken by people who by virtue of their work have access (key employees or executives who have access to the strategic information about the company) to the otherwise non public information which can be crucial for making investment decisions.
- This can be either illegal or legal depending on when the insider makes the trade
- In other words, Insider trading is illegal when the material information is still non-public, and this sort of insider trading comes with harsh consequences.
- Insider trading **is highly discouraged by the Securities and Exchange Board of India to promote fair trading in the market for the benefit of the common investor.**
- However, in certain cases, if the information has been made public, in a way that all concerned investors have access to it, that will not be a case of illegal insider trading.
- In India it is regulated by SEBI, Securities and Exchange Board of India (Prohibition of Insider Trading) (Amendment) Regulations, 2020 were passed in this regard.

World Economic Forum to pioneer roadmap for Smart Cities

Economy

- The World Economic Forum selected 36 cities from 22 countries for pioneering a policy roadmap for smart cities.
- These smart cities are being developed under the G20 Global Smart Cities Alliance. Of the 36 cities selected, four are Indian cities. The four Indian cities selected are Bengaluru, Faridabad, Indore and Hyderabad.
- The selected 36 cities will collaborate with global experts and enhance their city policies in areas ranging from cyber security to services to be provided to physically challenged people. These 36 cities will adopt five policies namely better broadband coverage, privacy protection, accountability for cyber security, better accessibility to digital city services for physically disabled and increased openness of city data. With these inputs they will frame a road map to become a smart city which will then be used by other cities in the world in following phases of the initiative.

15th Finance Commission Report

Economy

Why in news?

- The Finance Commission's role in providing conditional and unconditional transfers to the states has far-reaching consequences for the provision of public services and the union-state fiscal relations. State governments have to be given fiscal freedom to ensure better governance of state and to enhance their economic and social wellbeing.

About the report:

- The main report is titled "Finance Commission in Covid Times" which depicts a set of scales on its cover to denote balance between the Union and the States.
- Along with it, two more volumes as part of its submissions have been presented.
- The first one focuses on the State of the Union government's finances, with an in-depth scrutiny of key departments, the medium-term challenges facing the Centre and a roadmap for the future.
- The second volume is entirely dedicated to States, with the finances of each analysed in great depth.
- The panel has come up with State-specific considerations to address key challenges that individual States face.
- All terms of reference (ToR) such as considering a new non-lapsable fund for financing national security and defence spending and offering performance incentives for States that deliver on reforms are considered.
- Apart from the vertical and horizontal tax devolution, local government grants, disaster management grant, the Commission also examined whether a separate mechanism for funding of defence and internal security ought to be set up.
- The Commission had submitted an interim report for 2020-21 in 2019.
- The interim report had reduced States' share in the divisible pool of taxes from 42% to 41% for that current year, after the dissolution of Jammu and Kashmir as a State.
- The devolution of funds between the Centre and the States for the period 2021-22 to 2025-26 has been recommended.

Defence fund:

- In 2019, the central government had added a new ToR for the FC, asking it to examine the scope of setting up a non-lapsable defence and internal security fund.
- Several states had raised concerns over the proposal to create a non-lapsable defence fund out of the divisible pool of central taxes.
- The states had sent in additional memoranda to the commission over pointing out that allocation of funds for defence was entirely the responsibility of the union government, should come from the Consolidated Fund of India and not result in any reduction in the divisible pool of central taxes.
- The status of the fund is yet to be known as the report has not been made public.

The Saffron Bowl of India Reaches Out Toward the North East

Economy

Why in news?

The North East Center for Technology Application and Reach (NECTAR) has embraced a pilot task to investigate the attainability of developing saffron in the North East district.

More Details:

- Plants from seeds shipped from Kashmir to Sikkim and adjusted there are currently blooming in Yangyang in the Southern piece of the North-East state.
- The Botany and Horticulture branch of the Sikkim Central University did tests to comprehend the dirt and real pH states of Yangyang of Sikkim and thought that it was practically identical to saffron developing spots of Kashmir.
- The task additionally centred around post-collect administration and the worth option of saffron with the goal that quality saffron drying and proficient post-gather preparing can improve saffron recuperation, in this way improving its creation.
- Saffron creation has for some time been confined to a restricted geological zone in the Union domain of Jammu and Kashmir.
- Pampore area, in India, normally known as the Saffron bowl of Kashmir, is the primary supporter of saffron creation, trailed by Budgam, Srinagar, and Kishtiwari areas.
- Saffron has customarily been related with the well known Kashmiri food. Its therapeutic qualities were considered as a component of the rich social legacy of Kashmir. As saffron becoming was kept to unmistakable regions in Kashmir, its creation stayed restricted.
- In spite of the fact that the National Mission on Saffron zeroed in on a few measures to improve its cultivating, the measures were as yet restricted to the predetermined zones of Kashmir.

Cotton and sugar exports from India

Economy

Agricultural exports from India during pandemic:

- India has started exporting cotton more in the 2020/21 season, which started on Oct. 1, 2020.
- Export demand is good as India's cotton is the cheapest in the world market.
- A recovery in global prices could lift Indian exports to 7 million bales in the new season from 5 million bales a year ago.
- Global cotton prices have been near their highest in nearly 17 months.
- This move could weigh on global prices and limit shipments from rivals such as the United States and Brazil to key Asian buyers such as China, Bangladesh and Vietnam.
- Most of India's shipments are heading towards China and Bangladesh.
- The Indian rupee hit a two-month low recently, increasing traders' margins from overseas sales.
- India will have ample surplus for exports as the country is set to produce more cotton this year than last year.
- However, limited availability of containers has been delaying exports by a few days.

Ethanol production:

- The food ministry is working on a proposal for seeking cabinet approval for extension of the existing sugar export policy for about 6 million tonnes in the 2020-21 season.
- India has offered export subsidies during the last two years in order to reduce surplus stocks and help cash-starved sugar mills clear cane payment to growers.
- Sugar mills exported 5.7 million tonnes of sugar against the mandatory quota of 6 million tonnes set for the 2019-20 season. (October-September), as per official data.
- There is a good export opportunity for India as Thailand's production is expected to be down this year, while Brazil's crushing will only start in April 2021.

- India needs to export more than 5 million tonnes of sugar this year to ensure domestic rates do not fall below the cost of production.
- The surplus stock situation is expected to continue this season as well because domestic sugar production is pegged at 31 million tonnes, well above the annual demand of 26 million tonnes.
- To avoid sugar glut-kind of situation, the government is encouraging mills to produce ethanol instead of sugar as the former can be used for blending with petrol under the National Biofuel Policy.
- The subsidised loans are being given to millers for distilleries capacity expansion in order to achieve the ethanol production of over 360 crore litres.
- As per newly proposed ethanol blending policy, the ethanol blending with petrol target is increased to 10 percent by 2022 and 20 percent by 2030.

PM Inaugurates Ro-Pax Terminal At Hazira

Economy

Why in news?

The Prime Minister additionally flagged off the Ro-Pax ship administration among Hazira and Ghoghain Gujarat. This administration presently shortens the excursion from 10–12 hours to 3–4 hours.

Details of the terminal

- This administration will empower the transportation of natural products, vegetables and milk without any problem. It will likewise prompt diminished contamination.
- This will be the second such ship administration to be dispatched by the PM after the Ghogha–Dahej highway three years prior, which is presently useless.
- Both the administrations were dispatched to connect the Gulf of Khambhat by giving an ocean course to an enormous number of travellers making a trip back and forth between Bhavnagar situated on the western side of the Gulf and South Gujarat on the east. The ocean course would be more limited to contrasted with the street.
- Ghogha is a fishing village and an old port. Furthermore, Hazira is a business green field port. Ro Pax represents Roll-On-Roll-Off-Passenger-transport/ship.
- Numerous significant offices are preparing in the province of Gujarat, for example, the Gujarat Maritime Cluster, Gujarat Maritime University and the nation's first CNG Terminal at Bhavnagar.
- Gujarat oceanic bunch ports to be inherent GIFT city would be a committed framework to deliver Ports to the ocean-based coordinations.
- These bunches would help in fortifying the participation between the administration, industry and instructive organizations and will likewise help in esteem expansion in this area.
- India's first Chemical Terminal was set up in Dahej, Bharuch district, Gujarat.

Nurturing Neighborhoods Challenge

International Relations

Why in news?

Recently, the Union Ministry of Housing & Urban Affairs (HUA) has launched 'Nurturing Neighborhoods Challenge'.

About the challenge

- It is a challenge for cities to develop and implement initiatives to improve the quality of life of young children, caregivers and families.
- The challenge is conducted with the support of the Bernard van Leer Foundation, Netherlands with technical support from World Resources Institute (WRI)-India.
- The challenge will be open to all smart cities, cities with more than five lakh population and capital cities of states and union territories.

Benefits

re-imagine parks and open spaces;

- improve access to early childhood facilities;
- adapt public spaces with early childhood-oriented amenities; and
- create accessible, safe, walkable streets for young children and families

Executive Board of WHO

International Relations

Why in news?

Union Minister for Health and Family Welfare virtually chaired the 147th WHO Executive Board recently

About the board

The World Health Organization (WHO) is governed by two decision-making bodies: the World Health Assembly and the Executive Board.

- The Executive Board consists of 34 Members, elected for three-year terms, and meets twice each year.
- At the main meeting, which is held in January, the Board establishes an agenda for the upcoming World Health Assembly, which is held in May. An administrative meeting is also held immediately after the Health Assembly.
- The main functions of the Board are to implement the decisions and policies of the Health Assembly, and advise and generally to facilitate its work

WHO Assembly

- It is the supreme governing body of the WHO and is comprised of delegations from all 192 Member States.
- The Health Assembly is charged with establishing policies for the Organization, as well as approving the programme budget and appointing the Director-General.
- These two bodies create a forum for debate on health issues and for addressing concerns raised by Member States.

Documents produced by these two bodies

Three types of documents, described below, are produced by the Executive Board and the World Health Assembly:

1. Resolutions and Decisions passed by the Executive Board or World Health Assembly
2. Official Records, as published in the in the WHO Official publications, of the Executive Board or World Health Assembly
3. Documents, as presented "in session", of the Executive Board or World Health Assembly

15th East-Asia Summit

International Relations

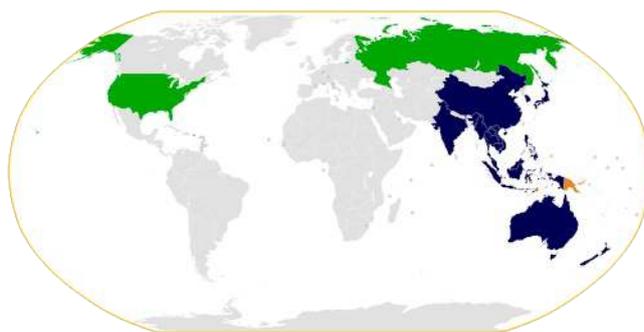
External Affairs Minister S Jaishankar represents India at the 15th East Asia Summit (EAS) recently

Key highlights of the summit

- The virtual summit meeting will be chaired by the Prime Minister of Vietnam, Nguyen XuanPhuc, and see participation from all the 18 EAS countries —10 ASEAN countries and Australia, China, India, Japan, South Korea, New Zealand, Russia and the United States.
- During the summit, the members will discuss ways and means to strengthen the EAS platform and to make it more responsive to emerging challenges on its 15th anniversary
- Members will also exchange views on issues of international and regional interest, including the pandemic and cooperation among EAS participating countries to achieve an expeditious and sustainable economic recovery

About East Asia Summit (EAS)

- It is a premier leaders-led forum for discussions on important strategic issues in the Indo-Pacific, and a leading confidence-building mechanism in the region.
- It is the only leader-led forum at which all key partners meet to discuss political, security and economic challenges facing the Indo-Pacific, and has an important role to play in advancing closer regional cooperation
- It has 18 members
- The EAS calendar culminates in the annual Leaders' Summit, which is usually held alongside ASEAN Leaders' meetings in the fourth quarter of every year
- EAS members represent 54 per cent of the world's population and account for 58 per cent of global GDP worth an estimated US\$49.6 trillion



17TH ASEAN-INDIA SUMMIT

International Relations

Why in news?

Recently, the Prime Minister Shri Narendra Modi along with Vietnamese counterpart has co-chaired the 17th ASEAN India Summit.

Key Highlights of the Summit

- The ASEAN members and India would explore ways to increase the trade between them despite of India's exit from the 15-nation Regional Comprehensive Economic Partnership (RCEP) agreement.
- The Prime Minister had called for an "early review" of the ASEAN-India Trade in Goods Agreement (AITIGA).
- ASEAN and India signed the ASEAN-India Trade in Goods Agreement (AITIGA) in Bangkok in 2009 and entered into force in 2010.
- The summit underlined the importance of diversification and resilience of supply chains for post-COVID economic recovery.
- The Prime Minister had also highlighted India's "Indo-Pacific policy" as an area of convergence for ASEAN and India.
- The Prime Minister invited the ASEAN countries to cooperate on various pillars of India's Indo-Pacific Oceans Initiative (IPOI).
- All countries stressed upon the importance of a rules-based order in the region including through upholding adherence to international law, especially the United Nations Convention on the Law of the Sea (UNCLOS).
- The leaders affirmed the importance of maintaining and promoting peace, stability, safety and security in the South China Sea in particular freedom of navigation and overflight.
- Importance of ASEAN

Association of Southeast Asian Nations (ASEAN)

- It is an intergovernmental organization of ten Southeast Asian countries: **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.**
- It promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration among its members and other countries.



INDIA AND ASEAN

- India's relationship with ASEAN is a key pillar of her foreign policy and the foundation of Act East Policy.
- India and ASEAN already has 25 years of Dialogue Partnership, 15 years of Summit Level interaction and 5 years of Strategic Partnership with ASEAN.
- India has a separate Mission to ASEAN and the EAS in Jakarta.
- India places ASEAN at the centre of its Indo-Pacific vision of Security and Growth for All in the Region.
- India has an annual Track 1.5 event Delhi Dialogue, for discussing politico-security and economic issues between ASEAN and India.
- ASEAN is India's fourth largest trading partner.
- People-to-People Interaction with ASEAN, such as inviting ASEAN students to India each year for the Students

Exchange Programme, Special Training Course for ASEAN diplomats, Exchange of Parliamentarians.

- India has made considerable progress in implementing the India-Myanmar-Thailand Trilateral Highway and the Kaladan Multimodal Project
- India-Myanmar-Thailand Trilateral Highway to Cambodia, Lao PDR and Viet Nam / Protocol of the India-Myanmar-Thailand Motor Vehicle Agreement (IMT MVA)

Importance of ASEAN for India

- India needs a close diplomatic relationship with ASEAN nations both for economic and security reasons.
- Connectivity with the ASEAN nations can allow India to improve its presence in the region. These connectivity projects keep Northeast India at the centre, ensuring the economic growth of the northeastern states.
- Improved trade ties with the ASEAN nations would mean a counter to China's presence in the region and economic growth and development for India.
- ASEAN occupies a centralised position in the rules-based security architecture in the Indo-Pacific, which is vital for India since most of its trade is dependent on maritime security.
- Collaboration with the ASEAN nations is necessary to counter insurgency in the Northeast, combat terrorism, tax evasions etc.

Challenges

- Regional imbalances in the economic and social status of its individual markets.
- The emphasis on consensus sometimes becomes chief drawback.
- There is no central mechanism to enforce compliance.
- Gap between rich and poor ASEAN member states remains very large and they have a mixed record on income inequality.
- The members' political systems are equally mixed with democracies, communist, and authoritarian states.
- Inefficient dispute-settlement mechanism, whether it be in the economic or political spheres.
- While the South China Sea is the main issue exposing the organization's rifts.
- ASEAN has been divided over major issues of human rights. For example, crackdowns in Myanmar against the Rohingyas.
- Inability to negotiate a unified approach with regards to China, particularly in response to its widespread maritime claims in the South China Sea.

China and ASEAN

- In the rapidly evolving geopolitical scenario marked by China's assertive military, political and economic rise, the Act East Policy has imparted greater dynamism to India's ties with ASEAN.
- The issue of ownership, control, use and exploitation of oil, gas, and mineral and fisheries resources in the South China Sea has emerged as a major dispute between China and several ASEAN nations like Vietnam, Philippines, Brunei and Malaysia.
- This issue has divided ASEAN and there is no unanimity amongst them.
- The South China Sea is of economic importance for India as more than 40% of trade is dependent on this region. Fossil fuel resources in this region are also being harnessed by India on a collaboration basis.
- Maritime security is essential in this region for the protection of India's national interest.
- However, India's effort in this regard is meagre when compared to China's dominance in the region.
- Therefore, India must forge a greater alliance with these nations for the promotion of rules-based maritime security.

- **ASEAN-India Cooperation Fund:** India contributes \$50 million to the ASEAN-India Fund to support the implementation of the ASEAN-India Plans of Action, which envisages cooperation in a range of sectors as well as capacity building in the political, economic and socio-cultural spheres for enhancing the ASEAN-India Cooperation. An additional grant of \$50 million was proposed by India during the 14th ASEAN India Summit in 2016.
- **ASEAN-India Science and Technology Development Fund (AISTDF):** India contributed \$1 million to promote joint research and development projects in the field of science and technology. The fund has been enhanced to \$5 million from 2016-17.
- **ASEAN-India Green Fund:** Set up by India with an initial contribution of \$5 million, it supports collaboration activities related to environment and climate change. Some of the areas identified for collaboration under the fund are climate change, energy efficiency, clean technologies, renewable energy, biodiversity conservation and environmental education.

Political Security Cooperation

- It is the key and emerging pillar of the ASEAN-India relationship.
- This is to deal with the growing traditional and non-traditional challenges.

- It involves the coordination, cooperation and sharing of experience to deal with terrorism and radicalisation.
- India keeps ASEAN at the centre of its Indo-Pacific security vision.
- ASEAN Regional Forum (ARF) is the main forum for security dialogue and India has been attending these annual meetings since 1996.
- The ASEAN Defence Ministers' Meeting (ADMM) is the highest consultative and cooperative mechanism in ASEAN. The ADMM+ brings together the 10 ASEAN nations and Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the US on a biannual basis.

Booming Economy:

- ASEAN-India relation has led to benefitting both by steadily growing trade and investment, with ASEAN becoming India's fourth largest trading partner. With the implementation of ASEAN-India Agreements on Trade in Service and Investments, there has been increase in FDI inflows to each other. There has been enhancement in private sector engagement after setting up of ASEAN India-Business Council (AIBC).
- Growing Socio-Cultural Ties
- There has been a boost in People-to-People Interaction due to organisation of a large number of programmes such as invitation of ASEAN students to India each year for the Students Exchange Programme, Special Training Course for ASEAN diplomats, Exchange of Parliamentarians, Participation of ASEAN students in the National Children's Science Congress, ASEAN-India Network of Think Tanks and ASEAN-India Eminent Persons Lecture Series.

Increasing connectivity

- There is increase in support to promote projects that provide physical and digital connectivity between India and ASEAN. Separate Project Development Funds are released for it. There has been considerable progress in implementing the India-Myanmar-Thailand Trilateral Highway and a possible extension of it to Cambodia, Lao PDR and Viet Nam is under consideration.

Agriculture:

- India and ASEAN are cooperating in projects like Exchange of Farmers, ASEAN-India Fellowships for Higher Agriculture Education in India and ASEAN, Exchange of Agriculture Scientists, Empowerment of Women through Cooperatives, Training Course of Organic Certification for Fruits and Vegetables etc.
- These were further strengthened in 2018 with the ratification of the Medium Term Plan of Action for ASEAN-India Cooperation in Agriculture and Forestry for 2016-2020.

BRICS

International Relations

Why in news?

On November 17, 2020, the 12th BRICS Summit was held virtually and was hosted by Russia. The theme of this year's BRICS Summit was 'Global Stability, Shared Security, and Innovative Growth'.

Highlights of the 12th BRICS Summit

Why is this significant?

- The BRICS Summit 2020 comes as India and China are locked in a bitter border standoff in eastern Ladakh since early May, which has significantly strained the ties between the two nations. Both the nations have held a series of diplomatic and military talks to resolve the issue.
- While there has been no breakthrough yet between the two countries over the LAC standoff, there have been no provocative actions also since September 10, when a five-point consensus was reached upon for taking forward dis-engagement and de-escalation along LAC after the meeting between Indian external affairs minister S Jaishankar and his Chinese counterpart Wang Yi in Moscow on the sidelines of the SCO Foreign Ministers meeting in Moscow, Russia.
- Indian Defence Minister Rajnath Singh had also met his Chinese counterpart after the latter requested for a bilateral meet on the sidelines of the SCO Defence Ministers meeting in Moscow, Russia.



Key Highlights:

- The BRICS Summit 2020 will focus on further strengthening cooperation among the member states -Brazil Russia, India, China and South Africa -amid the COVID-19 pandemic.
- According to an official statement from the Russian Government, Russia is focused to promote multifaceted

cooperation between the BRICS countries to contribute to raising living standards and quality of life.

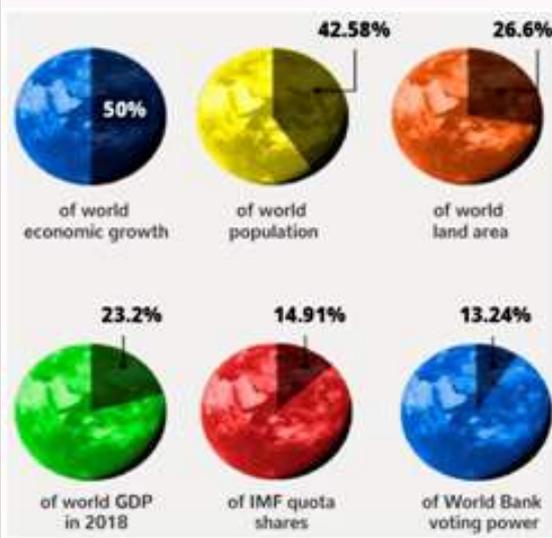
- The Russian statement also said that this year the five countries have continued close strategic partnerships on all the three major pillars: peace and security, economy and finance, cultural and people-to-people exchanges.
- Russia has played a huge role in facilitating the meetings between Indian and Chinese defence and foreign ministers on the sidelines of the SCO Meetings in Moscow in September 2020.
- Moscow Declaration was adopted which reflects the five countries' consolidated approach to the further development of the association. Two pillars of this year's summit are the economy and counter terrorism.

India's voice in the summit

- Terrorism: India stated that the biggest problem that the world is currently facing is 'terrorism'. There's a need to confront the countries which support and sponsor terrorism must be held accountable and the problem must be addressed in a unified manner.
- India also acknowledged the support of Russia to the BRICS Counter-Terrorism Strategy and further reiterated India's support to it.
- United Nation Security Council (UNSC) Reforms: India highlighted the issue of credibility and effectiveness of the institutions which are important for global governance and urged other BRICS members for the support.
- Ongoing COVID-19 pandemic: As the world is hopeful for COVID-19 vaccines, India underscored the issue of cooperation amongst the BRICS partners on the production of the COVID-19 vaccines. Additionally, the scope of trade improvement amongst the BRICS nations was highlighted by India.
- Aatmanirbhar Bharat Campaign: India introduced Aatmanirbhar Bharat or the self-reliant campaign to its BRICS partners. India highlighted that the said campaign is based on a self-reliant and resilient India and it can act as a force multiplier for the global economy in the post-COVID-19 world.. Under this campaign, India delivered essential medicines to more than 150 countries because of the capability of the Indian Pharma Industry.

About BRICS

- BRICS **started in 2001** as BRIC, an acronym coined by Goldman Sachs for Brazil, Russia, India, and China. South Africa was added in 2010. The notion behind the coinage was that the nations' economies would come to collectively dominate global growth by 2050.
- The BRICS grouping **aims to promote peace, security, development and cooperation** in the world. It also **aims at making a positive impact on the development of humanity** and establishing a **more equitable and fair world**.
- **BRICS Nations account for**



Political Cooperation:

- BRICS' political and security cooperation is aimed at achieving peace, security, development and cooperation for a more equitable and fair world.
- BRICS provides opportunities for sharing policy advice and exchange of best practices in terms of domestic and regional challenges as well as advancing the restructuring of the global political architecture so that it is more balanced, resting on the pillar of multilateralism.
- BRICS is utilised as a driver for South Africa's foreign policy priorities including the pursuit of the African Agenda and South-South Cooperation.
- BRICS Parliamentary Forum (BRICS PF) helps in consultations among members to present a common agenda in the BRICS parliament meetings.
- The BRICS Outreach Dialogue and Plus aim at involving regional neighbors of the host country in BRICS activities.
- Afghanistan, Argentina, Indonesia, Mexico and Turkey have expressed strong interest in full membership of the BRICS, while Egypt, Iran, Nigeria, Sudan, Syria and most recently Pakistan, Bangladesh and Greece have also expressed interest in joining BRICS.
- BRICS plays an important forum for all the member countries in promoting South-South cooperation and North-South dialogue.
- In recent years, BRICS have come together in a political grouping in a way that has far exceeded expectations.

Economic Cooperation:

- There are rapidly growing trade and investment flows between BRICS countries as well as economic cooperation activities across a range of sectors.
- Agreements have been concluded in the areas of Economic and Trade Cooperation; Innovation Cooperation, Customs Cooperation; strategic cooperation between the BRICS Business Council, Contingent Reserve Agreement and the New Development Bank.

- These agreements contribute to realization of the shared objectives of deepening economic cooperation and fostering integrated trade and investment markets.
- BRICS' Cryptocurrency: BRICS nations discussed the creation of New Cryptocurrency for Unified Payment System in 2019 BRICS Summit.

People-to-People Cooperation:

- BRICS members have recognised the need for strengthening People-to-People exchanges and to foster closer cooperation in the areas of culture, sport, education, film and youth.
- People-to-People exchanges seek to forge new friendships; deepen relations and mutual understanding between BRICS peoples in the spirit of openness, inclusiveness, diversity and mutual learning.
- Such People to people exchanges include the Young Diplomats Forum, Parliamentarian Forum, Trade Union Forum, CivilBRICS as well as the Media Forum.

Education and Research Cooperation:

- Russia expects the fellow BRICS nations to finalize the formation of their national expert groups for the BRICS Energy Research Platform by the end of 2019, so that the new entity could present priority areas for cooperation in 2020. It will pay way for technological cooperation on reducing the dependence on energy equipment imports which all developing countries are submerged in.
- BRICSMATH, the international Mathematics competition was inaugurated at the 11th BRICS summit in Brazil in 2019. The competition is meant to create a sense of unification among the BRICS countries and more than 2 million children are expected to participate in the competition.
- Educational programmes to take students from the member countries have been developed.

Achievements

Impact of BRICS on global institutional reforms

- The main reason for co-operation to start among the BRICS nation was the financial crises of 2008. The crises raised doubts over sustainability of the dollar-dominated monetary system.
- The BRICS called for the "the reform of multilateral institutions in order that they reflect the structural changes in the world economy and the increasingly central role that emerging markets now play".
- BRICS managed to push for institutional reform which led to International Monetary Fund (IMF) quota reform in 2010 (finally implemented in 2016). Thus the financial crises had momentarily reduced western legitimacy and briefly let the BRICS countries become "agenda setters" in multilateral institutions.

New Development Bank

- At the Fourth BRICS Summit in New Delhi (2012) the possibility of setting up a new Development Bank was considered to mobilize resources for infrastructure and sustainable development projects in BRICS and other emerging economies, as well as in developing countries.
- During the Sixth BRICS Summit in Fortaleza (2014) the leaders signed the Agreement establishing the New Development Bank (NDB).
- Fortaleza Declaration stressed that the NDB will strengthen cooperation among BRICS and will supplement the efforts of multilateral and regional financial institutions for global development thus contributing to sustainable and balanced growth.
- NDB's key areas of operation are clean energy, transport infrastructure, irrigation, sustainable urban development and economic cooperation among the member countries.
- The NDB functions on a consultative mechanism among the BRICS members with all the member countries possessing equal rights.
- Equal capital infused in NDB by BRICS members.
- **NDB's achievement has 44 projects with its lending touching \$12.4 billion, in just five years.**

Contingent Reserve Arrangement

- Considering the increasing instances of global financial crisis, BRICS nations signed BRICS Contingent Reserve Arrangement (CRA) in 2014 as part of Fortaleza Declaration at Sixth BRICS summit.
- The BRICS CRA aims to provide short-term liquidity support to the members through currency swaps to help mitigating BOP crisis situation and further strengthen financial stability.
- The initial total committed resources of the CRA shall be US one hundred billion dollars (USD 100 billion).
- It would also contribute to strengthening the global financial safety net and complement existing international arrangements (IMF).

Significance of BRICS for India

- **Safe space to modulate rivalry:** The grouping provides India and China the opportunity to decouple their strategic contest from the other dimensions of the relationship.
- During the Doklam standoff of 2017 and the recent Ladakh standoff, both China and India remained engaged through BRICS throughout the entirety of the crisis.
- **Providing a transcontinental reach:** With the presence of Brazil and South Africa in the group, it provides is a low-cost way for India to signal its aspirations as a global power.
- **Boosting India's demand for institutional reforms:** BRICS' repeated calls for reform of multilateral institutions, boosts India's own assertions in this direction, acting as a multiplier to the country's own demands for reform.
- **Contribution in creating an inclusive international financial architecture:** India was the main BRICS country behind the establishment of the NDB and has remained the **LARGEST BENEFICIARY of NDB loans** so far.
- NDB intends to provide non-conditional financing, unlike the WB and IMF and attempts to rectify the North-South divide to make it more inclusive.
- **Trade dependency:** Thirty-four percent of India's total imports are from the other four BRICS nations.

Challenges faced by the grouping

Challenges

- **Dominance of RCI:** The marked dominance of big three Russia-China-India is a challenge for the BRICS as it moves ahead. To become a true representative of large emerging markets across the world, BRICS must become pan-continental. Its membership must include more countries from other regions and continents.
- **Narrow Scope:** The BRICS will need to expand its agenda for increasing its relevance in the global order. As of now, climate change and development finance, aimed at building infrastructure dominate agenda.
- **Narrow Base:** It is restricted to five nations. It is not flexible for the entry of new nations into the group.
- The extremist view is that they have established neither new counter-balancing institutions nor come up with an alternative ideology. It has no ability to challenge the primacy of the United States and NATO.

Lack of Consensus:

- They uphold drastically different political systems, from active democracy in Brazil to entrenched oligarchy in Russia, and communism in China, and their economies are little integrated and are different in size by orders of magnitude.
- As BRICS moves forward foundational principles of BRICS i.e. respect for sovereign equality and pluralism in global governance are liable to be tested as the five member countries pursue their own national agendas.
- China's efforts to co-opt nation states, which are integral to its Belt and Road Initiative, into a broader political arrangement has potential to cause conflict among BRICS members especially China and India.

Joint Comprehensive Plan of Action

International Relations

- Result of the USA's Presidential election has brought light on Joint Comprehensive Plan of Action

What is JCPOA?

- JCPOA is an agreement signed by Iran and the P5+1+1 (China, France, Germany, Russia, the United Kingdom, the United States and EU) on July 14, 2015.
- This nuclear deal or JCPOA seeks to prevent Iran from producing a nuclear weapon — something Iran insists it does not want to do — by putting curbs on its atomic programme in exchange for economic incentives.
- As per the deal, Iran reduced the number of its centrifuges used for enriching uranium by two-thirds, restricted its uranium enrichment to 3.67%, and removed the core of its heavy water facility in Arak.
- The nuclear deal was endorsed by UN Security Council Resolution 2231, adopted on July 20, 2015.
- Iran's compliance with the nuclear-related provisions of the JCPOA is verified by the International Atomic Energy Agency (IAEA) according to certain requirements set forth in the agreement.
- Following the issuance of an IAEA report verifying implementation by Iran of the nuclear-related measures, the UN sanctions against Iran and some EU sanctions will terminate and some will be suspended.
- 15-year term: After the 15 years, the treaty will come to its term; then the extraordinary restrictions will no longer be applicable

Commitments set out in the JCPOA are:

- Research and development must take place only at Natanz and be limited until 2024.
- No enrichment will be permitted at Fordo until 2031, and the underground facility will be converted into a nuclear, physics and technology centre.

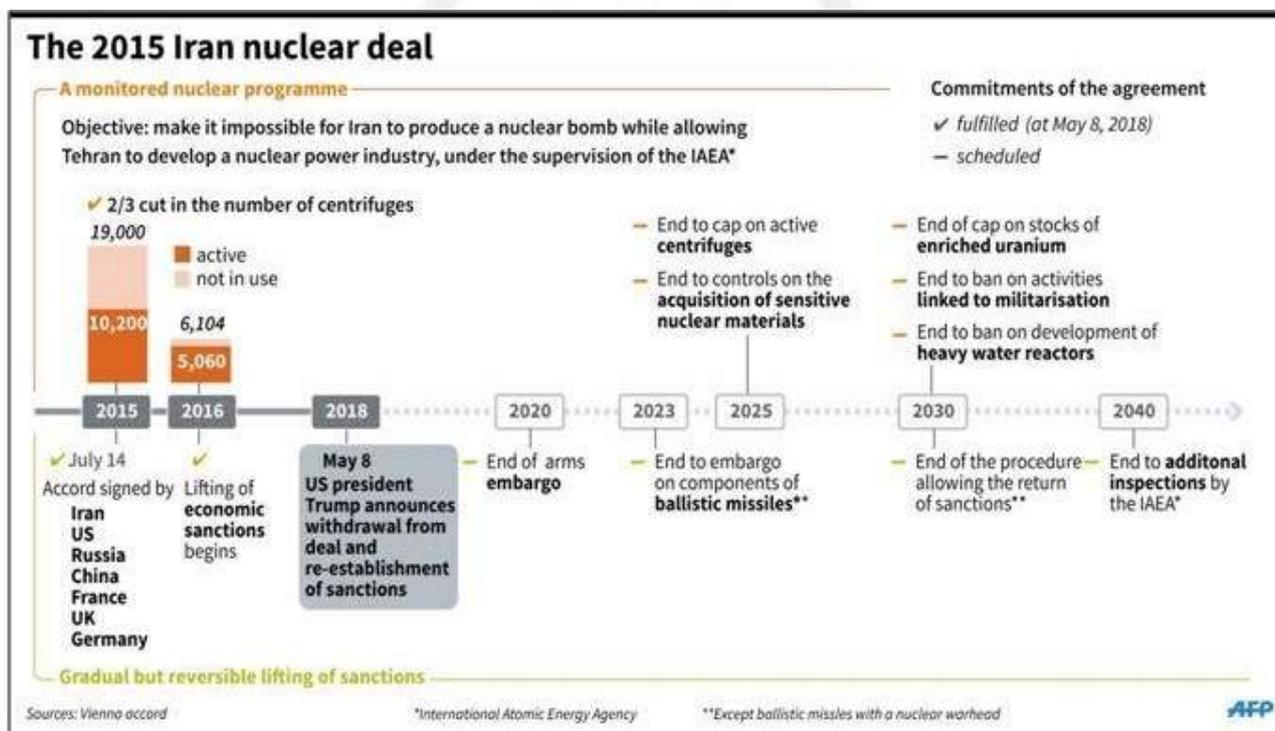
- A UN ban on the import of ballistic missile technology would also remain in place for up to eight years.
- Should redesign the Arak reactor so that it cannot produce any weapons-grade plutonium.
- Iran will not be permitted to build additional heavy-water reactors or accumulate any excess heavy water until 2031.
- Iran is required to allow International Atomic Energy Agency (IAEA) inspectors to access any site they deem suspicious.
- Inspectors from the IAEA continuously monitor Iran's declared nuclear sites and also verify that no fissile material is moved covertly to a secret location to build a bomb.
- Until 2031, Iran will have 24 days to comply with any IAEA access request. If it refuses, an eight-member Joint Commission – including Iran – will rule on the issue which can decide on punitive steps, including the reimposition of sanctions. A majority vote by the commission suffices.
- UN's new rules for ships in the Arctic Region

The uniqueness of the treaty

This is the first time that the United Nations Security Council has recognized the nuclear enrichment program of a developing country and backs an agreement signed by several countries within the framework of a resolution (United Nations Security Council Resolution 2231)

Why has US pulled out of the deal now?

Trump and opponents to the deal say it is flawed because it gives Iran access to billions of dollars but does not address Iran's support for groups the U.S. considers terrorists, like Hamas and Hezbollah. They note it also doesn't curb Iran's development of ballistic missiles and that the deal phases out by 2030. They say Iran has lied about its nuclear program in the past.



United Nations Population Award

International Relations

Why in news?

Bhutan's Queen Mother Gyalyum Sangay Choden Wangchuck has been awarded the United Nations Population Award in the individual category for 2020 for her work on sexual health and ending gender violence.

About United Nations Population Award

- The United Nations General Assembly established the United Nations Population Award in resolution 36/201 on 17 December 1981.
- The Award is presented annually to an individual or individuals, or to an institution or institutions or to any



combination thereof, for the most outstanding contribution to the awareness of population questions or to their solutions.

- The Committee for the United Nations Population Award selects the laureates of the Award. The Committee is composed of 10 representatives of Members States of the United Nations elected by the Economic and Social Council for a term of three years (2019-2021).
- UNFPA serves as its secretariat.

2020 awardees are:

- Queen Mother of Bhutan (Individual category) and
- HelpAge India (organizational category) _ works on elder care

Previous awardees from India

- Only two Indians have been awarded in the past four decades since the award was established in 1981: former Prime Minister Indira Gandhi in 1983 and industrialist-philanthropist J.R.D. Tata in 1992.

About United Nations Population Fund (UNFPA)

- UNFPA is the United Nations sexual and reproductive health agency.
- UNFPA is formally named the United Nations Fund for Population Activities.
- The organization was created in 1969, the same year the United Nations General Assembly declared "parents have the exclusive right to determine freely and responsibly the number and spacing of their children."
- Its work includes developing national healthcare strategies and protocols, increasing access to birth control, and leading campaigns against child marriage, gender-based violence, obstetric fistula, and female genital mutilation.
- UNFPA calls for the realization of reproductive rights for all and supports access to a wide range of sexual and reproductive health services – including voluntary family planning, maternal health care, and comprehensive sexuality education.

G20 - Virtual Summit

International Relations

Why in News?

Recently, the **15th G20 Summit 2020** chaired by **Saudi Arabia** was concluded.

Key focus areas of 15th G20 Summit 2020

- The theme for the 15th G20 Summit was "Realising the Opportunities of the 21st Century for All".
- The focus of the G20 Summit was on an inclusive, resilient, and sustainable recovery from the COVID-19.
- The three key agenda items to be addressed under this theme are:
 - Empowering People, by creating the conditions in which all people (especially women and youth) can live, work and thrive;
 - Safeguarding the Planet, by fostering collective efforts to protect our global commons; and
 - Shaping New Frontiers, by adopting long-term and bold strategies to share benefits of innovation and technological advancement.



Key Highlights of G20 Summit

COVID-19

- The EU leaders stressed the need for strong multilateral cooperation in the fight against the pandemic.
- The EU called on the G20 to provide, before the end of the year, USD 4.5 billion for mass procurement and delivery of COVID-19 tools.
- G20 leaders committed to sparing no effort to make sure that all people have affordable and equitable access to safe and effective COVID-19 diagnostics, therapeutics and vaccines.
- It recommended an International Treaty on Pandemics which could help us respond more quickly and in a more coordinated manner when pandemics occur.

Debt Relief

- The G20 leaders were determined to support the most vulnerable and fragile countries, notably in Africa, in their fight against the pandemic.

- The G20 leaders are committed to allowing countries eligible under the G20 Debt Service Suspension Initiative to suspend official bilateral debt service payments until June 2021.
- The EU leaders stressed that additional steps might be needed and the summit endorsed the "Common Framework for Debt Treatments beyond the DSSI", which is also endorsed by the Paris Club.

Climate change and green transition

- The EU leaders urged all G20 members to work towards the full and effective implementation of the Paris Agreement.
- They stressed that the EU leads the way to climate neutrality by 2050 and welcomed that many G20 partners had taken the same commitments.
- They also promoted a recovery based on green, inclusive, sustainable, resilient and digital growth in line with the 2030 Agenda and its Sustainable Development Goals.

Global trade and taxation of the digital economy

- The G20 leaders recalled their support to the WTO reform process in the lead-up to the 12th WTO Ministerial Conference.
- The leaders also agreed to strive to find a consensus-based solution for a globally fair, sustainable, and modern international tax system by mid-2021, built on the ongoing work of the OECD.
- Key announcements made by India at G20 Summit 2020
- The Prime Minister termed the COVID-19 pandemic as an important turning point in history of humanity and the biggest challenge the world is facing since the World War II.
 - He called for decisive action by G20 which should not be limited to economic recovery, jobs and trade, but to focus on preserving Planet Earth.
- The PM called for a new Global Index for the Post-Corona World that comprises four key elements:
 - Creation of a vast Talent Pool;
 - Ensuring that Technology reaches all segments of the society;
 - Transparency in systems of governance; and
 - Dealing with Mother Earth with a spirit of Trusteeship.
- The PM underscored the importance of the 2030 Agenda for Sustainable Development Goals aimed at 'leaving no one behind'.

Global Significance of G20 Summit

- As globalization progresses and various issues become more intricately intertwined, the recent G20 summits have focused not only on macro-economy and trade, but also on a wide range of global issues which have an immense impact on the global economy, such as development, climate change and energy, health, counter-terrorism, as well as migration and refugees.
- This meeting is coming at a time which is seeing perhaps the most significant shift in the global environment since the cold war. This can be explained on the basis of following points:
 - Threat to International Trade: World Trade Outlook has signalled continuous fall in trade growth in the first half of 2019. In the name of protecting domestic industries, countries like US, Russia, China and India are imposing steep tariffs on products of rival countries.
 - Foreign Direct Investment: According to a UN Report released recently, Global FDI slid to 1.3 Trillion dollars in 2018, in its third annual decline
 - Increasing Pollution and Climate Change: According to World Bank, air pollution costs societies more than 5 trillion dollars every year.
 - Terrorism: According to Global Terrorism Index 2018, compiled by the Institute for Economics & Peace (IEP), Islamic State, the Taliban, Al-Shabaab and Boko Haram were responsible for 10,632 deaths in 2017.
 - Gulf Crisis: The Gulf crisis has had both global and specific effects on developing countries. The crisis, in particular the period of higher oil prices, has adversely affected world growth and hence growth in developing countries.

India and G20

- **India has been a founding member of G20** process and has played an active role in proposing new ideas and findingsolutions.
- **Some of the proposals that India made in the previous G20summits:**
- **Terrorism:** International action on terrorism is needed as the roots of terrorism may be in some other country; the conspiracy could be hatched in some third country, and the actual target maybe another country like India.
- **Economic offenders:** Dealing with the economic offenders has been emphasized by India as a serious policy challenge for India and other countries in G20. Economic offenders often commit the crime in one country and flee to another to escape the legal process at home.
- **GlobalTaxation:**G20hasalreadytakencognizanceof this fact and has come up with the Base Erosion and Profit Sharing (BEPS) framework.
- **New Digital Technologies:** Although the benefits of digital technologies for economic growth and social development are well-known, there are certain issues such as privacy, data security and digital governance which are to be properly understood.

Significance for India

- India was able to raise issues such as financial stability, artificial intelligence, energy security, reforming multilateralism and common efforts to address terrorism at the summit.
- Apart from a series of bilateral meetings with other countries, India may also go ahead with a couple of trilaterals (RIC=Russia-India-China and JAI=Japan-America-India) on the sidelines of the G20 summit.
- India was able to defend the RBI's proposed data localisation guidelines by refusing to attend the digital economy pushed by Japanese PM.
- The concerns related to dealing with fugitive economic offenders and climate change also found place in the final declaration.

About G20 (Group of Twenty)

- After the Asian Financial Crisis in 1997-1998, it was acknowledged that the participation of major emerging market countries is needed on discussions on the international financial system, and G7 finance ministers agreed to establish the G20 Finance Ministers and Central Bank Governors meeting in 1999.
- G-20 was founded with the aim to discuss policy pertaining to the promotion of international financial stability. It is a premier forum for international economic cooperation which represents 85% of the global GDP.
- G – 20 is the world's most powerful economic club, bringing together 20 most developed and emerging economies in the world, spread across five continents. The G20 comprises around 90 per cent of the global GDP, 80 per cent of the world trade and more than two-third of the world's population.
- The G20 Summit is formally known as the "Summit on Financial Markets and the World Economy".
- The participants are leaders from 19 countries and the European Union (EU). The 19 countries are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Republic of Korea, Republic of South Africa, Russia, Saudi Arabia, Turkey, United Kingdom, United States of America

G-20 Summits

- The very first of G-20 summit was held in the Washington, D.C. (United States) in 14–15 November 2008. The 14th G-20 summit was held in Osaka (Japan) on 28–29 June 2019.
- India has not hosted a G20 summit till now. But 17th G-20 Summit is scheduled to be hosted by India in 2022.

India-Japan 5G pact

International Relations

Why in news?

Both India and Japan, as the two strategic partners want to broad base their joint efforts in ensuring a free and open Indo-Pacific based on rule of law and respect for sovereignty and territorial integrity. As they need to counter the increasing Chinese aggression in the region the recent pacts signed are of immense significance.

About the agreement:

- India and Japan have finalized a landmark cyber-security agreement providing for enhancing cooperation on 5G technology, artificial intelligence and critical information infrastructure.
- This pact will **promote cooperation in 5G technology, internet of things (IoT), Artificial Intelligence (AI) and key areas of cyberspace.**
- It was decided after a meeting between External Affairs Minister S Jaishankar and his Japanese counterpart Toshimitsu Motegi in Tokyo, a day after the Quadrilateral Foreign Ministers' meet.
- This deal comes in the midst of growing concerns in India over cyber attacks from China, particularly after India banned over 100 mobile apps with Chinese links.
- A meeting of the union cabinet chaired by Prime Minister Narendra Modi approved signing of the agreement with Japan.
- Now both the sides will share information on countering cyber-security threats and develop **joint mechanisms to mitigate threats to information communication technology (ICT) infrastructure.**
- Both countries will cooperate on cyber-security at international bodies such as the UN.

Indo Pacific Ocean Initiative:

- Japan has agreed to be the lead partner in the connectivity pillar of the Indo-Pacific Oceans' Initiative (IPOI).
- The IPOI is an **India-backed framework aimed at making meaningful efforts to create a safe and secure maritime domain in the Indo-Pacific.**
- It was launched on November 04, 2019, by Prime Minister Narendra Modi at the East Asia Summit held in Bangkok, Thailand.
- IPOI draws on existing regional cooperation architecture and mechanisms to focus on **seven central pillars conceived around Maritime Security** –
- Maritime Ecology

- Maritime Resources
- Capacity Building and Resource Sharing
- Disaster Risk Reduction and Management
- Science, Technology and Academic Cooperation
- Trade Connectivity
- Maritime Transport

Resilient Supply Chain Initiative:

- The Resilient Supply Chain Initiative (**RSCI**) is proposed by **India, Japan and Australia**.
- The collapse of production within China in the early months of the outbreak of the pandemic caused cracks in several supply chains.
- For countries like India, Japan and Australia, whose trade relations with China are deep and exhaustive, and whose producers and consumers are reliant on sourcing from China, the impact was catastrophic.
- India's current relations with China are at their lowest ebb in several decades.
- Australia and Japan are also experiencing various difficulties and discomfort in managing ties with China.
- Hence the RSCI would build resilient supply chains in the Indo-Pacific that are either independent or barely dependent on China.

Importance of the above agreements:

- The cooperation between India and Japan on 5G technology comes in the backdrop of growing reluctance by a significant number of countries globally to allow Chinese telecommunications giant Huawei to roll out 5G services in their territories.
- As India and Japan commit to an open, interoperable, free, fair, secure and reliable cyberspace environment and to promote the Internet as an engine of innovation, economic growth, the new pact would be consistent with their respective domestic laws and international obligations.
- The Indo-Pacific Oceans initiative is a strategic step towards commitment of a free, open, prosperous and inclusive Indo-Pacific Region based on shared values and principles and respect for international law.
- The RSCI is looking to expand by including more countries from Southeast Asia. The investment prospects for Southeast from RSCI are considerably attractive. RSCI is an example of how regional supply chains might be repositioning in line with the emerging geopolitics post-Covid-19.
- As the US-China hostilities increase, the possibility of countries joining broader alignments on either side of the US-China divide, and the global economic order getting split accordingly, is substantial.

SHANGHAI COOPERATION ORGANIZATION(SCO)

International Relations

Why in News?

India hosted the SCO Heads of Government Summit on 30 November 2020 for the first time since it joined the grouping in the year 2017.

SHANGHAI COOPERATION ORGANISATION (SCO) SUMMIT 2020

- PM focussed to further deepen connectivity network (among the SCO members), it is necessary to respect each other's sovereignty and territorial integrity,".
- He also cited examples of the Chabahar port and the North South Corridor.
- The 20th summit of SCO heads of state is important as it brought President Xi Jinping of China and Mr. Modi together in the virtual format.
- As both the sides are caught in a stand-off along the Line of Actual Control (LAC) in eastern Ladakh.
- Foreign ministers from across the Shanghai Cooperation Organization (SCO) are in Moscow this week for meetings.
- The SCO Concept of Cooperation in Developing Remote and Rural Territories in the Digital Era was discussed.
- The Comprehensive Plan for the SCO Member States' Joint Measures to Counteract Epidemic Threats in the Region.
- The participants also approved the reports by the SCO Secretary-General and the Director of the RATS Executive Committee on their performance in 2019.
- They also supported the Kyrgyz Republic's intention to establish and ensure the functioning of an SCO Cultural and Integration Centre in Bishkek.
- The Republic of Tajikistan has taken over the SCO Chairmanship.

Shanghai Cooperation Organization

The Shanghai Cooperation Organization (SCO) is a regional intergovernmental security alliance involving Russia, China and four Central Asian states



Milestones

- 1996
Foundation of the Shanghai Five, the SCO predecessor
- 1999
Foundation of the Bishkek Group to counter border criminality
- 2001
Uzbekistan joins SCO
- June 15, 2001
Shanghai Cooperation Organization Founding Declaration signed
- 2008
Iran submits official application for full-right SCO membership

Basic documents

- 2001
Shanghai Convention on the Struggle against Terrorism, Separatism and Extremism
- 2002
SCO Charter
- 2002
Regional Anti-Terrorist Structure (RATS) Founding Agreement

Goals and Objectives

- Strengthening of mutual trust and good-neighborly policies between member states
- Promotion of effective cooperation in politics, trade, economics, science, technology, and culture, as well as education, energy, transport, tourism and environmental protection
- Jointly ensuring peace, security and stability in the region
- Advancement to a new democratic, fair and rational global political and economic order

SCO Structure

- Council of Heads of State
 - Council of Heads of Government
 - Council of Foreign Ministers
 - Meetings of Heads of Ministries and Departments
 - Council of National Coordinators
 - Regional Anti-Terrorist Structure
- Russian Foreign Ministry
Ambassador-at-Large Vitaly Vorobyov is the
Presidential Envoy for SCO Affairs

About the SCO

- The Shanghai Cooperation Organisation (SCO) is a permanent intergovernmental international organisation.
- The creation of which was announced on 15 June 2001 in Shanghai (China)

FOUNDING MEMBERS

- The Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan, and the Republic of Uzbekistan.
- It was preceded by the Shanghai Five mechanism.
- The SCO Charter entered into force on 19 September 2003.
- This is the fundamental statutory document which outlines the organisation's goals and principles, structure and core activities.
- The historical meeting of the Heads of State Council of the Shanghai Cooperation Organisation was held on 8-9 June 2017 in Astana.

Related News

- India's Vice President chaired **19th meeting of SCO Council of Heads of Government**.
- This is the **first time that summit-level meeting was held under India's chairmanship** since it gained full membership of SCO in 2017.
- **Keyhighlights**
- India called upon SCO member states to enforce internationally- recognised legal statutes to comprehensively **eradicate safe havens, infrastructure and financial networks supporting terrorism**.
- **SCO members stressed the need to reform WTO**, including by improving its key functions such as negotiations, monitoring and disputeresolution.
- **India refused to support China's Belt and Road project** which was backed by all othermembers.
- Approved action plan for implementation of the **program of multilateral trade and economic cooperation for 2021-2025**.

Structure of SCO

The structure of the Shanghai Cooperation Organization (SCO) is as follows:

- 1- Heads of State Council:** It is the apex body of the organization which makes decisions on the internal functioning and interaction of the organization with other States & international organisations, and considers international issues.
- 2- Heads of Government Council:** It makes decisions on the issues related to the economic spheres of interaction within the organization.
- 3- Council of Ministers of Foreign Affairs:** This body of the organization makes decisions on day-to-day issues.
- 4- Regional Anti-Terrorist Structure (RATS):** It is formed to counter-terrorism, separatism and extremism.
- 5- SCO Secretariat:** It is based in Beijing and provides informational, analytical & organisational support.

Significance for India

- SCO now has about half the world's population and a quarter of its GDP. Its boundary extends southwards to the Indian Ocean.
- The SCO's relevance for India lies in geography, economics and geopolitics.
- India has important economic and security interests in these countries.
- With India having complicated ties with neighbours, it makes sense to strengthen ties with its neighbours' neighbours.
- With Pakistan joining the Organisation and Afghanistan and Iran knocking on the doors for membership, the logic of India's membership becomes stronger.
- Expanding opportunities for India in Central Asia: India's relations with Central Asian countries have been constrained by lack of overland access through Pakistan and Afghanistan/Iran, because of political and/or security reasons. SCO should help in this regard.
- Russian and Chinese officials suggested that harmonious cooperation in the SCO may pave the way for an India-Pakistan rapprochement, recalling that SCO membership had facilitated resolution of China's boundary disputes with Russia and Central Asian countries.
- Connectivity is important for India's Connect Central Asia policy. Energy cooperation dominates its interest – and it's in China's neighbourhood. But India will also have to deal with an assertive China, which will push its Belt and Road Initiative during the summit.
- SCO membership also bolsters India's status as a major pan-Asian player, which is boxed in the South Asian paradigm.
- The SCO is one of the few regional structures India is a part of now, given a decline in its engagement with SAARC, BBIN and the RCEP. The SCO provides India a convenient channel for its outreach for trade and strategic ties to Central Asian countries. It has afforded a platform, when needed, for bilateral discussions with the two countries India has the most tense ties with: China and Pakistan.

Challenging areas:

- The SCO is expected to nudge both countries to cooperate in sensitive areas. One example is the Regional Anti-Terrorist Structure (RATS) of the SCO, which coordinates cooperation for security and stability, through intelligence-sharing on criminal and terrorist activities. India and Pakistan have to find ways of cooperating in the RATS.
- Defence cooperation is another tricky area: enhanced linkages between armed forces is an SCO objective. India has agreed to participate in the SCO's counter-terrorism military exercises in Russia later this year, when Indian and Pakistani troops will operate together.
- Reconciling Indian and Pakistani perspectives in the SCO's initiatives on Afghanistan would be yet another challenge.
- The challenge for India — besides that of security and defence cooperation with Pakistan — may come from increasing Chinese dominance of the SCO.

ORGANIZATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC)

I & R

Why in news?

OPEC Secretariat Hosted 4th High-Level Meeting of OPEC-India Dialogue; Co-Chaired by Dharmendra Pradhan & Mohammad Sanusi Barkindo

About the summit

OPEC (Organization of the Petroleum Exporting Countries) Secretariat hosted the **4th High-Level Meeting** of the **OPEC-India Dialogue** through video conference. The meeting was **co-chaired** by **Dharmendra Pradhan**, Union Minister of Petroleum and Natural Gas & Steel and **Mohammad Sanusi Barkindo**, Secretary General of OPEC.



Highlights of the Meeting:

- **Discussions** were made on the fast changing global energy landscape, overcoming energy challenges, global oil price mechanisms, measures being taken by OPEC and its partners to balance oil markets, and to ensure oil supply security for India.
- Dharmendra Pradhan **invited the member countries of OPEC to invest in India**, particularly in the country's efforts to transform India into a manufacturing hub, which will be at the core of the global value chain and to strengthen gas infrastructure and build commercial-cum-strategic petroleum storages under Phase-II.
- India urged to assess the impact of **COVID-19 induced disruptions on global energy sector supply chains**. It also stated that the OPEC needs to address the deviations in the crude price differential for different regions.
- Iraq remains top oil supplier to India.

OPEC's World Oil Outlook 2020: India accounts for 16% of the global economy

- OPEC in its recent World Oil Outlook 2020, has projected that India will account for 16% of the global economy by 2045, double that of 2020.
- It has projected that India will emerge as a leading energy consumer over the long term.
- The oil demand of India is forecasted to increase to 10.7 million bpd (barrels per day) by 2045 from 4.7 million barrels per day in 2019.
- With this the global share will rise from 5.2% to 10.8% by 2045.

Key Info:

- India imports about 80% of its oil from OPEC Member Countries.
- During FY 2019-20, India imported USD 92.8 billion worth of hydrocarbons from OPEC Member Countries.
- It is to be noted that OPEC meets 78% of India's crude oil demand, 59% of liquefied petroleum gas (LPG) demand, and about 38% of its liquefied natural gas (LNG) demand.

About OPEC

It is a permanent, intergovernmental Organization created at the Baghdad Conference in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.

Aim: To manage the supply of oil in an effort to set the price of oil on the world market and to avoid fluctuations that might affect the economies of both producing and purchasing countries.

Members: Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates and Venezuela

Headquarters: Vienna, Austria.

India is not OPEC member.

What are the challenges faced by OPEC?

Differences among members

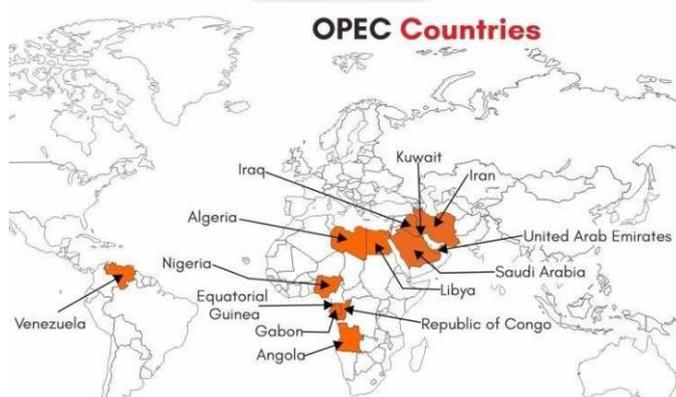
Various member countries of OPEC along with the US are creating pressure to cut down the imports from Iran and this has raised serious supply concerns for India. India is being pushed to cut down the imports from Iran, which offers discounts and options of deferred payments

The dominance of Saudi Arabia

- Saudi Arabia is the most powerful among the OPEC countries as it produces roughly a third of the group's overall crude oil, which further increased by the US sanctions on Iran.
- Saudi Arabia's disproportionate output has stirred discussion of how much influence other OPEC members have and the overall power of the cartel itself.

Asian Premium

- Asian Premium is extra charge being collected by OPEC countries from Asian countries when selling oil in comparison to western countries.
- For example, production cost of one barrel of crude oil is Rs. 100 in OPEC countries. These countries want to make profit of Rs. 100 so they ideally should sell one barrel for Rs. 200.
- But under Asian Premium pricing mechanism, OPEC countries give discriminatory treatment to Asian countries (though being largest importer of OPEC produced oil) by charging them Rs. 220 per barrel and on other side giving discount to western countries by selling them at Rs.180 or below one 180 per barrel
- There are **3 important benchmarks in global market**, representing the cost of oil produced in respective geographies.
- **Brent:** Light sweet oil representative of European market
- **West Texas Intermediate (WTI):** US market
- **Dubai/Oman:** Middle East and Asian Market.



Political crisis

- Political instability is very common in the Middle East, which has been exacerbated in late 2019 by massive protests in Lebanon, Iran and Iraq, enforced departure of long-time presidents in Sudan and Algeria.
- While the Assad Government has regained control over Syria, it faces an economic crisis because of economic sanctions and Turkish intervention.
- The US sanctions on Iran's oil exports is followed by hostile US-Iran bilateral ties, which led to a brink of war during certain instances.
- These along with frequent price wars create difficulty in ensuring stable oil prices for international consumers.

Issue of China and Russia

- China's influence in the Middle East has grown in recent years, though it is still dependent on petroleum imports from the region.
- Its energy investments are mostly focused on Iraq and to some extent the UAE.
- It has a naval base at Djibouti at the mouth of the Red Sea.

Tensions with the US

- Since 1973, OPEC has often had a tense relationship with the US.
- Trump Administration is calling OPEC a monopoly and demanding the grouping to reduce oil prices.
- For those OPEC countries that see the group as more of a political club than an economic cartel, the US' scaremongering enables maintenance of the myth of OPEC's significance and keeping the Western policymakers focused on it.

Shift from OPEC oil

- While the OPEC countries view high oil prices as a short-term advantage, they also take into consideration of it leading to importing countries to increase investments in alternative fuel sources.
- The most notable challenge for OPEC is from unconventional oils like shale-based energy that became increasingly available as the result of technological advancements.
- In 2009, after nearly a 40-year decline in US crude oil production, shale and sand-based oil extraction has helped the US increase output to record high.
- The shale revolution has adversely impacted OPEC.
- The OPEC's price reduction did little to prevent the US from becoming one among the world's major oil producer in recent years.
- The OPEC+ is a counter to the US' dominance in the oil market.

INDIA AND NUCLEAR DISARMAMENT

International Relations

Why in news?

UN General Assembly adopted two resolutions which were sponsored by India - 'Convention on the Prohibition of the use of Nuclear Weapons' and 'Reducing Nuclear Danger' under the 'Nuclear weapons' cluster. These resolutions manifest India's commitment towards the goal of nuclear disarmament.

About Nuclear Disarmament

- Nuclear disarmament is the **act of reducing or eliminating nuclear weapons**.
- The United Nations sought to eliminate Nuclear weapons in the **first resolution adopted by the UN General Assembly in 1946**.

More on the resolutions

- The "**Convention on the Prohibition of the use of Nuclear Weapons**", tabled by India since 1982 in the General Assembly requests the Conference on Disarmament in Geneva to commence negotiations on an international convention prohibiting the use or threat of use of nuclear weapons under any circumstances.
- The resolution on "**Reducing Nuclear Danger**", tabled since 1998, draws global attention to the risks of unintentional or accidental use of nuclear weapons and underscores the need for a new view of nuclear doctrines. It calls for concrete steps to reduce such risks, including through de-alerting and de-targeting of nuclear weapons.

India's role in global nuclear disarmament

- India has **always been an ardent supporter of multilateral nuclear disarmament and non-proliferation efforts**.
- On numerous occasions, India has taken the opportunity to be a driving force for attaining universal, complete and non-discriminatory disarmament:
- In 1965, India was **amongst the Non-Aligned Eight in the Eighteen Nation Disarmament Committee (ENDC)** that advocated for de-linking disarmament and non-proliferation

- India **opposed to signing the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)**, which it views as discriminatory because of its grouping of countries that divided the world into "nuclear haves" and "nuclearhave-nots".
- India **proposed a comprehensive proposal for "complete and universal nuclear disarmament"** to the UN General Assembly Special Session on Disarmament in 1988, which came to be known as the **Rajiv Gandhi Action Plan**.
- India **has not signed the Comprehensive Test Ban Treaty (CTBT)** due to the failure of the treaty to include a commitment by the nuclear-weapon States to eliminate nuclear weapons within a time-bound framework.
- Still it has observed a voluntary **nuclear testing moratorium since May 1998**.
- Through its **Nuclear doctrine in 2003**, India has asserted its continued commitment to the goal of a nuclear weapon free world through global, verifiable, and non-discriminatory nuclear disarmament.
- **India has also opposed the recent enforcement of Treaty on Prohibition of Nuclear Weapons (TPNW)** which India believes is not a comprehensive instrument on disarmament as it excludes the verification of nuclear armaments.
- India maintains that the Geneva-based **Conference on Disarmament (CD) is the single multilateral disarmament negotiation forum**.
- India is also in support of a non-discriminatory, universal, and verifiable **Fissile Material Cut-Off Treaty (FMCT)** that is being negotiated in CD.
- **FMCT is a proposed international agreement** that would prohibit the production of the two main components of nuclear weapons: highly-enriched uranium (HEU) and plutonium.

Conference on Disarmament (CD)

- It was **formed in 1979** as the single multilateral disarmament negotiation forum of the international community, after agreement was reached among Member States during the first special session of the UN General Assembly (UNGA) devoted to disarmament (1978).
- **Since the conclusion of the negotiation of the CTBT in 1996, the CD remains deadlocked** and has not been able to reach consensus on a programme of work and thus to commence substantive deliberations.

Challenges for India's vision of Nuclear Disarmament

- **Ongoing Modernization of Nuclear weapons:** Although the inventories of nuclear warheads continue to decline overtime, all the nuclear states are either developing or deploying new weapon systems or have announced their intention to do so.
- For example-US is making a **Miniaturised nuke** which will ensure shrinkage of power and enable tactical applications.
- China and Russia are developing **hypersonic glide vehicles**, and Russia is probably developing a **nuclear-armed, nuclear powered under water vehicle**.
- **Lack of consensus among major nuclear powers**
- The USA withdrew from the **Intermediate-Range Nuclear Forces (INF) Treaty, 1987** and Russia formally suspended its obligations under it.
- Uncertainty over continuation of **Further Reduction and Limitation of Strategic Offensive Arms (New START) treaty** between Russia and US beyond February 2021.
- Discussions on denuclearization between **the North Korea and the USA lost traction during 2019** and by the end of 2019 the **Iran nuclear deal (2015 Joint Comprehensive Plan of Action) was largely non-functional**.
- **Global perception for India:** Even as India's dominant assumption of its nuclear weapon has been determined by the effectiveness as a deterrence mechanism, the international community, from time to time, finds discrepancies in India's ideology and its ability to actively promote nuclear disarmament (even if it is not actively increasing it either).
- **India's regional security dilemma:** Consideration of regional developments (such as Pakistan's development of tactical nuclear weapons and its close relationship with China) in India's defence policies is although detrimental to India's quest for a Nuclear Weapon Free World (NWF) but cannot be downplayed in the context of regional stability.

INDIA'S DEVELOPMENT EFFORTS IN AFGHANISTAN

International Relations

Why in News?

Recently, India announced 100 projects worth \$80 mn in Afghanistan.

India's developmental projects in Afghanistan

- India has **pledged more than US\$2 billion in Afghanistan and invested in diverse areas** including healthcare, education, infrastructure, social welfare, and in the training of politicians, diplomats, and police (see infographic).

- India is **fifth largest donor to Afghanistan and the largest regional donor.**
- India is implementing **high-visibility large-scale projects** in relatively stable areas and **low-visibility small development projects (SDP)** in relatively remote and insecure areas in order to increase its sectoral spread and geographic reach.
- Over the years, India has shifted focus from a **narrow security-centric approach, to regional confidence building,** development, governance, and trade and investment, aiming to use Afghanistan's resource potential to build its economic viability, sustainability, and independence.

Importance of these projects

- **Soft power approach:** Avoiding a security-centered role, India adopted a soft power approach, re-establishing cultural and historical links between the two countries.
- **Demand driven strategy:** Most Indian projects have been provided based on the needs and requests of the Afghan government. This strategy has generated a **significant amount of goodwill for India.**
- **Connectivity to Central Asia:** India has worked towards reviving the role of Afghanistan as a 'link' connecting South Asia and Central Asia. Some of the large-scale infrastructure projects in Afghanistan are geared towards achieving those objectives.
- It will help India to fulfil its own energy needs and trade interests in Central Asia in the long-term.
- **Improving Afghanistan's connectivity:** Most of India's high-visibility and infrastructure development initiatives have veered around regional connectivity, trade, and transit. For landlocked Afghanistan, regional connectivity and access to the sea remains crucial.
- **Improving service delivery:** India's SDPs are designed to help provide basic service delivery and at the same time maximize Afghan participation and ownership, at both the government and community levels.
- **India has invested in training and capacity building,** working with legislators, parliamentary staff, and diplomats to develop the political sector.



ETHIOPIA CIVIL WAR

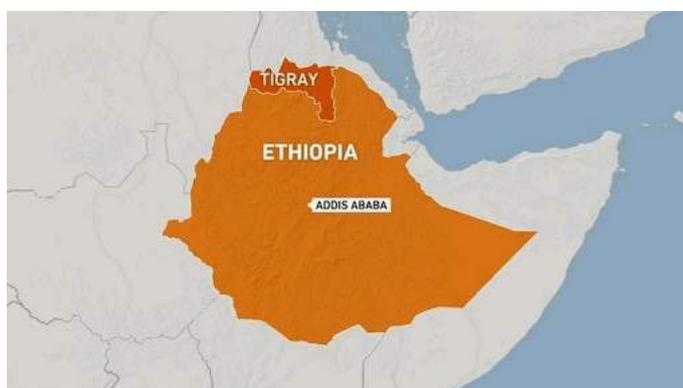
International Relations

Why in news?

Ethiopia is on the brink of civil war, threatening the stability of one of the world's most strategic regions, the Horn of Africa, and the fracturing of one of the continent's most powerful and populous countries.

About Ethiopia

Ethiopia is Africa's oldest independent country and its second largest in terms of population. Apart from a five-year occupation by Mussolini's Italy, it has never been colonized. It has a unique cultural heritage, being the home of the Ethiopian Orthodox Church - one of the oldest Christian denominations - and a monarchy that ended only in the coup of 1974.



Why has conflict started in Tigray?

- The conflict escalated in September, when Tigray held local elections in insubordination of the Ethiopian federal government.

- These elections were considered "illegal" by the federal government, further leading to conflict with Tigray authorities.
- Conflict between Tigray authorities and the federal government can be traced to when Abiy Ahmed came to power in 2018.
- Tigray region is wealthier than other parts of the country, and more importantly, has a well-trained army.
- The authority of the Tigray officials has considerably reduced since Abiy took office, making their waning influence a point of contention.
- The structure of Ethiopia's federal system allows the country's ten regions significant autonomy.
- These regions also have their own parliaments, their own security forces, and the right to a referendum for independent rule.
- This conflict is really the result of a battle between two different political ideologies for supremacy and control in the country.

What impact will this have on the Horn of Africa?

- If the conflict between the Ethiopian federal government and Tigray authorities exacerbates, it will spill over to neighbouring countries in the Horn of Africa.
- Eritrea may be hardest hit, due to its proximity to Tigray.
- Many veterans from the TPLF who participated in the Ethiopian-Eritrean war between 1998 and 2000 are now part of the Tigray region's paramilitary forces" and there is lingering resentment between these veterans and Eritrea.
- Ethiopia has also been engaged in a long-standing conflict with Egypt over the construction of the Grand Ethiopian Renaissance Dam over the Blue Nile, with Sudan having been inadvertently drawn into this conflict over the course of the dam's development.
- If the violence and conflict spills outside Ethiopia's borders, it may potentially destabilize the Horn of Africa region.
- The US and China have several strategic military bases in that region, the closest being Djibouti.
- If these military bases were to be impacted by the disturbances in any way, it may cause foreign powers to get militarily involved in the region and the conflict.
- The stability of Ethiopia is important for the entire Horn of Africa region

What is at stake?

- For Africa's second-most populous country and Ethiopia's more than 100 million citizens, particularly for those living in Tigray, the latest events may deepen the sense of distrust for the federal government and the prime minister.
- **A stable Ethiopia is crucial to the restive Horn of Africa region.**
- Ethiopia has received hundreds of millions of dollars in US aid and military assistance and has been a key ally of the US in combating extremist groups in neighboring **Somalia**.
- For now, the US, one of Abiy's key foreign allies, appears to back the prime minister's stance on the alleged TPLF attacks.
- But Abiy's real problem since coming to power hasn't been losing friends abroad -it's been making enemies at home.

PEACE DEAL BETWEEN ARMENIA & AZERBAIJAN

International Relations

Why in news?

In a latest development, Russia brokered a new peace deal between Armenia and Azerbaijan, the two countries that have been in a military conflict for over six weeks over the disputed region of Nagorno-Karabakh in the South Caucasus.

About the peace deal

- The deal, which is meant to end the conflict between the two nations, was signed by Russian President Vladimir Putin, Azerbaijani president Ilham Aliyev and Armenian prime minister Nikol Pashinyan.
- As per the new peace deal, both sides will now maintain positions in the areas that they currently hold, which will mean a significant gain for Azerbaijan as it has reclaimed over 15-20 per cent of its lost territory during the recent conflict.
- Peace keepers will be deployed along the line of contact in Nagorno-Karabakh and along the Lachin corridor that connects the region to Armenia.
- These Russian peacekeepers with a force of roughly 2,000 will be deployed in the area for a period of five years.
- Refugees and internally displaced persons will return to the region and the adjacent territories and the two sides will also exchange prisoners of wars and bodies.
- Significantly, a new corridor will be opened from Nakhchivan to Azerbaijan, which will be under Russian control.

Nagorno-Karabakh

- Straddling western Asia and Eastern Europe, Nagorno-Karabakh is internationally recognised as part of Azerbaijan, but most of the region is controlled by Armenian separatists.
- Nagorno-Karabakh has been part of Azerbaijan territory since the Soviet era.
- When the Soviet Union began to collapse in the late 1980s, Armenia's regional parliament voted for the region's transfer to Armenia; the Soviet authorities turned down the demand.
- Years of clashes followed between Azerbaijan forces and Armenian separatists.
- The violence lasted into the 1990s, leaving tens and thousands dead and displacing hundreds of thousands.
- In 1994, Russia brokered a cease fire, by which time ethnic Armenians had taken control of the region.
- While the area remains in Azerbaijan, it is today governed by separatist Armenians who have declared it a republic called the "Nagorno-Karabakh Autonomous Oblast".
- While the Armenian government does not recognise Nagorno-Karabakh as independent, it supports the region politically and militarily.



The conflict

- The recent conflict began in September, since when each country has claimed to have inflicted serious loss on its opponent.
- It was the first time that both countries have proclaimed martial law.
- During the course of the conflict, considered one of the most serious in recent years, over 1200 have lost their lives as per the Nagorno-Karabakh authorities, while thousands have been displaced.

What is Russia's role in the conflict?

- Russia's role in the conflict has been somewhat opaque since it supplies arms to both countries.
- Also, it is in a military alliance with Armenia called the Collective Security Treaty Organisation.

Mission Sagar – II

International Relations

Why in news?

As part of 'Mission Sagar-II', Indian Naval Ship Airavat entered Port Sudan in November 2020.

About the mission

Mission Sagar-II:

- Mission Sagar-II, follows the first 'Mission Sagar' undertaken in May-June 2020, wherein India reached out to Maldives, Mauritius, Seychelles, Madagascar and Comoros, and provided food aid and medicines.
- As part of Mission Sagar-II, Indian Naval Ship Airavat will deliver food aid to Sudan, South Sudan, Djibouti and Eritrea.
- This mission is in line with the Prime Minister's vision of Security and Growth for All in the Region 'SAGAR' and highlights the importance accorded by India to relations with her maritime neighbours.

SAGAR

- Security and Growth for All in the Region (SAGAR) was launched in 2015. It is India's strategic vision for the Indian Ocean Region (IOR).
- Through SAGAR, India seeks to deepen economic and security cooperation with its maritime neighbours and assist in building their maritime security capabilities.



- Further, India seeks to safeguard its national interests and ensure Indian Ocean region to become inclusive, collaborative and respect international law.
- The key relevance of SAGAR emerges when seen in conjunction with India's other policies impacting the maritime domain like Act East Policy, Project Sagarmala, Project Mausam, India as 'net security provider', focus on Blue Economy etc.

IORA (Indian Ocean Rim Association)

- Established in 1997 in Ebene Cyber City, Mauritius.
- First established as Indian Ocean Rim Initiative in Mauritius on March 1995 and formally launched in 1997 by the conclusion of a multilateral treaty known as the Charter of the IORA for Regional Cooperation.
- It is based on the principles of Open Regionalism for strengthening Economic Cooperation particularly on Trade Facilitation and Investment, Promotion as well as Social Development of the region.

1st BRICS Finance Ministers and Central Bank Governors Meeting

I & R

Why in news?

Finance Minister attends 1st BRICS Finance Ministers and Central Bank Governors Meeting

About the conference

- The agenda of the meeting included discussions on the outcomes of the G20 Saudi Presidency in 2020, a digital platform to encourage infrastructure investments and expansion of the membership of the New Development Bank.
- The G20, of which all BRICS countries are members, has delivered some very significant initiatives this year including the G20 Action Plan in response to COVID-19 which has provided broad guidance to navigate a collective global response to the crisis.
- Additionally, the G20 Debt Service Suspension Initiative ensured immediate support to address the liquidity needs of low-income countries.
- BRICS members have played an important role in ensuring that concerns of emerging economies are appropriately reflected in these initiatives.
- The BRICS Finance Ministers and Central Bank Governors also discussed expansion of the membership of the New Development Bank (NDB).
- The Finance Minister supported the expansion of the membership of NDB and emphasised the importance of regional balance.

Indo-Thai Coordinated Patrol (CORPAT)

International Relations

Why in news?

The 30th edition of India-Thailand Coordinated Patrol (Indo-Thai CORPAT) between the Indian Navy and the Royal Thai Navy took place from November 18-20.

Key Highlights

- As part of Government of India's vision of SAGAR (Security And Growth for All in the Region), the Indian Navy has been involved in assisting countries in the Indian Ocean Region with EEZ Surveillance, Humanitarian Assistance and Disaster Relief (HADR), and other capacity building and capability-enhancement activities on their request," said the release.
- The release further stated that both countries have enjoyed a friendly relationship, covering a wide spectrum of activities and interactions.
- To reinforce maritime links, the navies of both nations have been carrying out CORPAT along their International Maritime Boundary Line twice a year since 2005, with the aim of keeping this vital part of the Indian Ocean safe and secure for commercial shipping and international trade.
- CORPAT builds up the understanding and interoperability between navies and facilitates the institution of measures to prevent and suppress Illegal Unreported Unregulated (IUU) fishing, drug trafficking, maritime terrorism, armed robbery and piracy.
- The 30th Indo-Thai CORPAT will contribute towards Indian Navy's efforts to consolidate interoperability and forge strong bonds of friendship with the Royal Thai Navy.

The Humanitarian Assistance and Disaster Relief (HADR):

- The Humanitarian Assistance and Disaster Relief (HADR) Programme has been established to facilitate and enhance cooperation on preparedness and response strategies to the fragile and unpredictable situations we face in the Asia-Pacific.
- Aside from comprehensively investigating regional emergency response frameworks, governance issues, disaster preparedness strategies and the identification and development of response niches for civilian and military actors, the programme also seeks to develop the next generation of global leaders in HADR through roundtable sessions, dialogues and workshops.

UAE High Level Joint Task Force on Investments

International Relations

Why in news?

India and the UAE on Tuesday agreed to explore ways to facilitate investments in key sectors with a view to strengthen economic ties between the two countries.

The two sides agreed that the recent challenging circumstances of COVID-19 made it even more important to encourage investment and cooperation in areas of mutual interest with the purpose of stimulating economic activity.

Key Highlights

- With an aim to further strengthen trade and economic ties, both sides reiterated the importance of addressing specific perceived barriers to trade between the two countries, an official statement said.
- These include issues relating to anti-dumping duties and measures, as well as any tariff and regulatory restrictions, it added.
- The two sides agreed to coordinate efforts and promote mutual cooperation at the highest official levels in areas of anti-dumping and to consider these issues promptly with the objective of seeking mutually beneficial solutions, it said.
- The discussions were held during the eighth meeting of the India-UAE High Level Joint Task Force on Investments.
- The two sides also agreed that their civil aviation authorities should continue to work together on a priority basis, for their mutual benefit, to ensure speedy normalization of bilateral air transport operations.
- The Indian side agreed to look into these issues with the objective of facilitating further direct investments of the UAE-based funds into India and seeking mutually beneficial solutions in that regard, it added.
- The meeting was co-chaired by Piyush Goyal, Commerce and Industry Minister and Sheikh Hamed bin Zayed Al Nahyan, Member of the Executive Council of the Emirate of Abu Dhabi. Senior officials from both the countries were also present.

New Chinese Village in Bhutan

International Relations

Why in news?

Chinese media has claimed that a new border village built by China near Bhutan was on Chinese territory.

However, the released images of the village show its location on territory disputed by the two countries.

More Details:

- The village of Pangda has been newly built and authorities in Yadong county (an administrative region) of Southwest China's Tibet Autonomous Region have confirmed that 27 households with 124 people voluntarily moved from Shangdui village to Pangda village in September 2020.
- It is for the first time since 2017 that a Chinese residential area has been noticed near the Doklam region, which is strategically important for India.
- Pangda is east of the India-Bhutan-China trijunction on the Doklam plateau, which was the site of a 72-day stand-off in 2017 triggered by China's road-building up to where it sees its border.
- **Bhutan's Stand:** It has officially denied the presence of any Chinese village in its territory.
- **India's Stand:** India sees it as an attempt by China to unilaterally push the trijunction further.
- China in the past too, has tried to reinforce its territorial claims in disputed areas with the neighbouring countries by building civilian settlements. o For example, on disputed South China Sea islands and Bhutan's Trashigang district.
- **China's Stand:** According to China's maps, the village is within China's territory.
- It also blames India for the unsettled China-Bhutan border and stalled negotiations by creating the illusion that China is encroaching on Bhutanese territory.

Focal point

The map shows the location of Pangda, the new border village said to be built by China in disputed territory



- The area is east of the India-Bhutan-China trijunction on the **Doklam plateau**, the site of a 72-day stand-off in 2017

- Chinese media said the village had **27 households**, a public square, a village committee, a health room, a police room, a kindergarten, a supermarket and a plastic runway



India, Maldives sign four MoUs to boost ties

International Relations

Why in news?

New Delhi and Male on Monday signed four agreements.

About the MOU's

- Including a **\$100 million Indian grant** for an ambitious connectivity project.
- In addition to two MoUs for **"high impact"** community development projects, the countries signed an MoU on cooperation in sports and youth affairs and another for the \$100 million grant, which is part of India's "\$500 million package" for **the Greater Male Connectivity Project (GMCP)**.
- Last month, the two governments inked a deal for a \$400 million line of credit from the Exim Bank of India.



Greater Male Connectivity Project

- The GMCP consists of a number of **bridges and causeways** to connect **Male to Villingili, Thilafushi and Gulhifahu islands** that span 6.7 km.
- It would ease much of the **pressure of the main capital** island of Male for commercial and residential purposes.
- When completed, the project would render the Chinese built Sinamale Friendship bridge connecting Male to two other islands, thus far the most visible infrastructure project in the islands.
- At present, India-assisted projects in the region include water and sewerage projects on 34 islands, reclamation project for the Addlisland, a port on Gulhifalhu, airport redevelopment at Hanimadhoo, and a hospital and a cricket stadium in Hulhumale.

Other Recent Initiatives:

- In April 2020, India supplied 6.2 tonnes of essential medicines to the Maldives, under Operation Sanjeevani to tackle the pandemic.
- In May 2020, India under Mission Sagar, supplied food items and medical assistance teams to the countries in the southern Indian Ocean including the Maldives.
- Indian Government assures that the Maldives will be among the first countries to receive Covid-19 vaccines as soon as one is developed in India.
- In August 2020, the bilateral Air Travel Bubble was established which connects five Indian cities with Male through 13 weekly flights leading to a steep increase in the number of tourists.
- Creating a travel bubble involves reconnecting countries or states which have shown a good level of success in containing the Covid-19 domestically.
- Such a bubble would allow the members of the group to restart trade ties with each other and open travel and tourism.
- In October 2020, both governments inked a deal for a USD 400 million line of credit from the Export-Import Bank of India (Exim Bank), premier export finance institution of India.
- The soft loans to the Maldives have funded connectivity, water, sewerage projects, Addu Development Project, an international cricket stadium, Gulhifalhu port, etc.

Significance:

- The MoUs are symbolic of India-Maldives' strong development partnership which is multi-faceted and designed to meet the specific requirements of the government and people.
- The Maldives enjoys a special and central place in India's Neighbourhood First policy and itself has a foreign policy of India First.
- India is supportive of Maldivian Foreign Minister's candidature for the Presidency of the 76th session of the United Nations General Assembly in 2021.
- Both nations have consistently supported each other in multilateral fora such as the UN, the Commonwealth, the Non-Aligned Movement (NAM) and the South Asian Association for Regional Cooperation (SAARC).
- Amid India's growing concern over China's increasing influence in the Indian Ocean Region (IOR), the ties with the Maldives are of crucial importance.
- The current Maldivian President is being criticised by the opposition for having an "India-tilt". The Former President was dislodged from office in 2018 and was widely perceived as a close ally of China.

Chabahar Project

International Relations

Why in news?

Recently, Iran's Port and Maritime Organisation (PMO) has conveyed to India a request for locomotives and signalling equipment for the Chabahar-Zahedan railway line. Iran has been facing difficulty in procuring them directly due to the sanctions imposed by the USA. Iran has also asked India to activate the USD 150 million credit line which was offered to it by India during the Iranian President's visit in 2018.

Background

- In May 2016, India, Iran and Afghanistan signed the trilateral agreement which entailed the establishment of Transit and Transport Corridor among them using Chabahar port in Iran as one of the regional hubs for sea transportation.
- Construction of a rail line from Chabahar port to Zahedan, along the border with Afghanistan as an alternate trade route to Afghanistan and Central Asia, was also a part of it.
- The state-owned Indian Railways Construction Ltd. (IRCON) signed a Memorandum of Understanding (MoU) with the Iranian Rail Ministry to provide all services, superstructure work and financing (around USD 1.6 billion).

Reasons for Excluding India:

Iran's Stand:

- In July 2020, Iran decided to proceed with the rail line construction on its own, citing delays from the Indian side in beginning and funding the project.

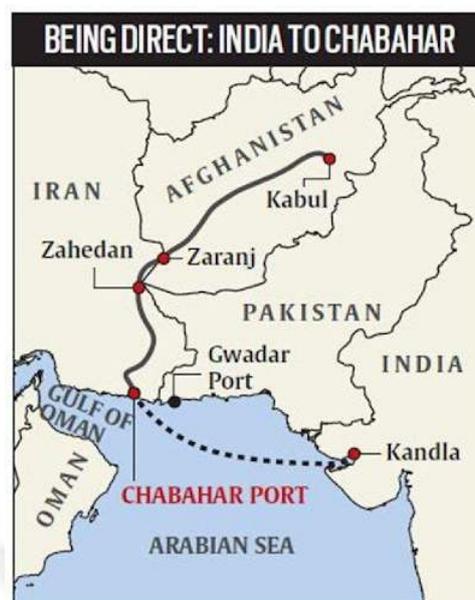
India's Stand:

- IRCON completed the site inspection and feasibility report, and had been waiting for the Iranian side to appoint a nodal authority.
- Although the project has secured a special waiver from the USA, India is hesitant to deal with the construction company which has links with the Islamic Revolutionary Guard Corps (IRGC) and is under the sanctions.
- The IRGC is a hard-line force which operates its own military infrastructure in parallel to Iran's regular armed forces. In April 2020, it launched Iran's first military satellite Noor.
- Fear of sanctions by the USA has also impacted Indian interest in the Farzad-B gas field project of Iran.

Significance of Chabahar Port for India:

Why this port is of interest to India?

- **Counter to Pakistan's Gwadar Port:** India believes the port is critical to its interests and wants to develop it as a counter to Pakistan's Gwadar port which was built with Chinese assistance
- **Bypass Pakistan:** The port will allow India to bypass Pakistan to transport goods to Afghanistan and Central Asia using a sea-land route
- **Helpful in maritime commerce:** Chabahar Port lies in the Persian Gulf in Iran and will help India in expanding its maritime commerce in the region
- It also provides opportunities to Indian companies to penetrate and enhance their footprint in the region
- From Chabahar, the existing Iranian road network can link up to Zaranj in Afghanistan, about 883 kms from the port.



- The Zaranj-Delaram road constructed by India in 2009 can give access to Afghanistan's Garland Highway, setting up road access to four major cities in Afghanistan — Herat, Kandahar, Kabul and Mazar-e-Sharif
- **Chabahar port will ensure in the establishment of a politically sustainable connectivity between India and Afghanistan.** This will in turn, lead to better economic ties between the two countries.
- **With Chabahar port becoming functional, there will be a significant boost in the import of iron ore, sugar and rice to India.** The import cost of oil to India will also see a considerable decline. India has already increased its crude purchase from Iran since the West imposed ban on Iran was lifted.

Benefits to Iran

- As India is Iran's largest customer hence the memorandum will help to increase economic growth and investment.
- It will provide regional growth and prosperity by employment generation and gdp growth.

Challenges in developing Chabahar Port for India

- **Competition from China:** The India-China competition for regional dominance has a new playground in Chabahar as China is also busy developing Gwadar port and plans to use it to connect it to CPEC and has also completed the lease agreement for 40 years.
- **USA IRAN Tensions:** Engagement over Chabahar can bring India and Iran closer which would impact the relations between India and USA as the tensions between USA and Iran over Iran's nuclear policy and enrichment program and the strict sanctions imposition and subsequent removal is yet to fully subside.
- **The Taliban Factor:** The trade between Indian and Afghanistan which has high potential is still fraught with many logistical challenges even after bypassing the Pakistan factor

China's Railway Near Arunachal Pradesh border.

International Relations

Why in news?

China has begun work on a strategically significant railway line that will link Sichuan province with Nyingchi in Tibet, which lies close to Arunachal Pradesh border.

Project Details

- The project will link Sichuan province with Nyingchi, which lies near the border with India's Arunachal Pradesh.
- The importance of the project, Chinese experts said, is two-fold.
- Secondly, it will run right up to Nyingchi near the border with India, which it will link to both Lhasa and Chengdu, the provincial capital of Sichuan.
- The entire line will run from Chengdu to Lhasa, connecting the two capitals of TAR and Sichuan and cutting the journey from 48 hours to 13 hours.

Rail to border town

China's planned railway line will run from Lhasa in Tibet to Chengdu, the capital of Sichuan province, connecting both the places to Nyingchi, a city near the Arunachal Pradesh border

- The first segment of the line within Sichuan province, from Chengdu to Ya'an, was completed in December 2018

- Work on the 1,011 km section from Ya'an to Nyingchi, which was formally launched this week, will be finished in 2030



- The 435 km section from Nyingchi-Lhasa has been under construction since 2015, and will be finished by the end of 2021

Strategic Importance for China

- The Sichuan-Tibet Railway's construction has not only created a large number of jobs along the route, but is also helping revitalize the local countryside.
- It will also boost the social transformation and modernization of Tibet.
- And by improving the transport network in eastern and south eastern Tibet, it will create a sound business environment for Tibet.
- This will help the locals to attract foreign enterprises, capital and talents to participate in its development
- Sichuan-Tibet Railway will connect China-India-Bangladesh-Myanmar economic corridor to the Yangtze River.
- It will also accelerate cultural and personnel exchanges between Tibet and the rest of country, narrowing their geographical and psychological distance.

India and Finland signed a MOU

International Relations

Why in news?

India and Finland signed a MOU for developing cooperation between two countries in the field of Environment protection and biodiversity conservation.

Key Highlights

- The MoU is a platform to further advance Indian and Finnish partnership and support, exchange best practices in

areas like prevention of Air and water pollution; Waste management; Promotion of circular economy, low-carbon solutions and sustainable management of natural resources including forests; Climate change; Conservation of Marine and Coastal Resources; etc.

- As part of its Nationally Determined Contributions submitted under the Paris Agreement, India has taken three quantitative climate change goals viz. reduction in the emissions intensity of Gross Domestic Product by 33 to 35 percent by 2030 from 2005 level, achieving about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030 and creating an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030.
- The MoU will strengthen technological, scientific and management capabilities and develop bilateral cooperation in the field of environmental protection and biodiversity conservation on the basis of equality, reciprocity and mutual benefit with due respect to promotion of sustainable development.
- Speaking at the event Shri Javadekar said that the MoU also provides the possibility to have joint projects in of mutual interest. "This MOU will definitely commit us to work together more closely on the fulfilment of commitments made under Paris Agreement.", said the Environment Minister.

FOOD COALITION: FAO

International Relations

Why in news?

Taking cognizance of the catastrophic food crisis and the urgency to tackle it, Food and Agriculture Organization (FAO) of the United Nations launched a Food Coalition.

ABOUT:

- Food Coalition is a voluntary multi-stakeholder and multi-sectoral alliance.
- Proposed by Italy and led by FAO, the global alliance aims to help countries get back on track to achieve the UN-mandated Sustainable Development Goals by 2030, especially the ones on ending hunger and poverty.
- More than 30 countries have already expressed interest in joining the coalition.
- How would the coalition work?
- The alliance would work as a network of networks and a multi-stakeholder coalition for a unified global action to support measures to ensure food access and increase the resilience of agricultural food systems in response to COVID-19.

The Food Coalition would work towards:

- Mobilising resources, expertise and innovation
- Advocating for a joint and coordinated COVID-19 response
- Promoting dialogue and exchange of knowledge and expertise among countries
- Working towards solution-oriented plans and programmes
- Expanding international cooperation and partnership for a longer term impact

Key-highlights of the State of Food Security and Nutrition in the World report, 2020

- The novel corona virus disease (COVID-19) pandemic has pulled food systems apart, threatening food security and nutrition.
- At least 690 million people went hungry in 2019.
- Now, the pandemic could tip over 130 million more people into chronic hunger by the end of 2020.

Earth Observation Satellite (EOS-01)

Science and Technology

Why in news?

India would launch its latest earth observation satellite EOS-01 and nine international customer spacecraft onboard its PSLV-C49 rocket.

About the satellite

- India's Polar Satellite Launch Vehicle in its 51st mission (PSLV-C49), will launch EOS-01 as primary satellite along with nine international customer satellites from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

Key features of satellite EOS-01 :

- An EOS or remote sensing satellite is a satellite used or designed for Earth observation (EO) from orbit, including spy satellites and similar ones intended for non-military uses such as environmental monitoring, meteorology, cartography and others.
- Starting with IRS-1A in 1988, ISRO has launched many operational remote sensing satellites.
- Today, India has one of the largest constellations of remote sensing satellites in operation.
- Currently, *thirteen* operational satellites are in Sun-synchronous orbit and *four* in Geostationary orbit.
- The data from these satellites are used for several applications covering agriculture, water resources, urban planning, rural development, mineral prospecting, environment, forestry, ocean resources and disaster management.



What is an Earth observation satellite?

- Earth observation satellites are the satellites equipped with remote sensing technology. Earth observation is the gathering of information about Earth's physical, chemical and biological systems.
- Many earth observation satellites have been employed on sun-synchronous orbit.
- Other earth observation satellites launched by ISRO include RESOURCESAT- 2, 2A, CARTOSAT-1, 2, 2A, 2B, RISAT-1 and 2, OCEANSAT-2, Megha-Tropiques, SARAL and SCATSAT-1, INSAT-3DR, 3D, etc.

About Polar Satellite Launch Vehicle:

- It is the third generation launch vehicle of India.
- It is the first Indian launch vehicle to be equipped with liquid stages.
- After its first successful launch in October 1994, PSLV emerged as the reliable and versatile workhorse launch vehicle of India with 39 consecutively successful missions by June 2017.
- The vehicle successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013 – that later travelled to Moon and Mars respectively.
- Geosynchronous Satellite Launch Vehicle (GSLV) Mark II and GSLV MkIII are the other two launch vehicles.
- .

Discovery Of Pulsars

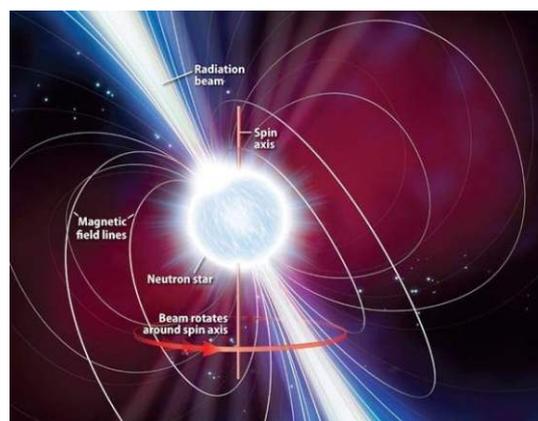
Science and Technology

Why in news?

Recently, The Royal Society unveiled a new portrait of **astrophysicist Dame Jocelyn Bell Burnell, who is credited with discovering pulsars in 1967**. Discovery was **recognised by a Nobel Prize in physics in 1974** that was shared by two professors, Antony Hewish (Burnell's supervisor) and Martin Ryle.

What are pulsars ?

Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds. Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles. These accelerated particles produce very powerful beams of light. Often, the magnetic field is not aligned with the spin axis, so those



beams of particles and light are swept around as the star rotates. When the beam crosses our line-of-sight, we see a pulse – in other words, we see pulsars turn on and off as the beam sweeps over Earth.

One way to think of a pulsar is like a lighthouse. At night, a lighthouse emits a beam of light that sweeps across the sky. Even though the light is constantly shining, you only see the beam when it is pointing directly in your direction. The video below is an animation of a neutron star showing the magnetic field rotating with the star. Partway through, the point-of-view changes so that we can see the beams of light sweeping across our line of sight – this is how a pulsar pulses.

Fast Radio Bursts(FRBS) detected in the Milky Way

Science and Technology

Why in news?

- NASA has reported that on April 28, it observed a mix of X-ray and radio signals never observed before in the Milky Way. Significantly, the flare-up it observed included the first fast radio burst (FRB) seen within the galaxy.
- Three papers reporting the detection of the phenomenon called FRB were published in the journal Nature on November 4.

Who discovered the simultaneous bursts in the Milky Way?

- The X-ray portion of the simultaneous bursts was detected by several satellites, including NASA's Wind mission, and the radio component was discovered by the Canadian Hydrogen Intensity Mapping Experiment (CHIME), a radio telescope located at Dominion Radio Astrophysical Observatory in British Columbia, which is led by McGill University in Montreal, the University of British Columbia, and the University of Toronto.
- Further, a NASA-funded project called Survey for Transient Astronomical Radio Emission 2 (STARE2) also detected the radio burst seen by CHIME. STARE2 is operated by Caltech and NASA's Jet Propulsion Laboratory in Southern California and the team behind it determined that the burst's energy was comparable to FRBs.

What are Fast Radio Bursts?

- Fast Radio Bursts are brief (few millisecond) bursts of radio waves coming from far beyond our Milky Way galaxy.
- The phenomenon was first reported in 2007 and as of mid-2017, roughly two dozen have been reported and their origin is unknown.
- However, they are ubiquitous: current best estimates suggest these events are arriving at Earth roughly a thousand times per day over the entire sky.
- Of the known detected FRBs, one, FRB 121102, has been observed to repeat and has been shown to come from a small dwarf galaxy at redshift 0.2.
- Whether all FRBs repeat and/or are in dwarf galaxies is yet known.



What is the origin of the FRB detected in April?

- The source of the FRB detected in April in the Milky Way is a very powerful magnetic neutron star, referred to as a magnetar, called SGR 1935+2154 or SGR 1935, which is located in the constellation Vulpecula and is estimated to be between 14,000-41,000 light-years away.
- The FRB was part of one of the magnetar's most prolific flare-ups, with the X-ray bursts lasting less than a second. The radio burst, on the other hand, lasted for a thousandth of a second and was thousands of times brighter than any other radio emissions from magnetars seen in the Milky Way previously. It is possible that the FRB-associated burst was exceptional because it likely occurred at or close to the magnetar's magnetic pole.
- This flare-up, which lasted for hours, was picked up by NASA's Fermi Gamma-ray Space telescope and NASA's Neutron star Interior Composition Explorer (NICER), which is an X-ray telescope mounted on the International Space Station.

Why is this observation significant?

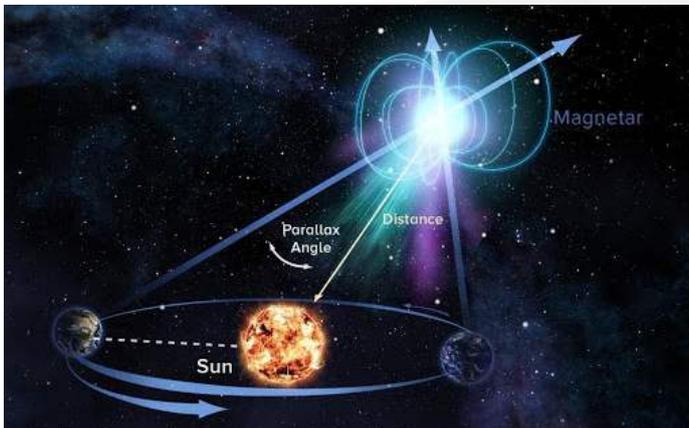
- Until now, there were various theories that tried to explain what the possible sources of an FRB could be. One of the sources proposed by the theories has been magnetars. But before April this year, scientists did not have any evidence to show that FRBs could be blasted out of a magnetar. Therefore, the observation is especially significant.
- "Taken together, the observations strongly suggest that SGR 1935 produced the Milky Way's equivalent of an FRB, which means magnetars in other galaxies likely produce at least some of these signals," NASA has said.
- Even so, for an "ironclad proof" of FRBs connection with magnetars, researchers will continue to look for an FRB outside of the Milky Way that coincides with an X-ray burst from the same source.

What is CHIME?

- The CHIME Telescope is located at the Dominion Radio Astrophysical Observatory (DRAO), a national facility for astronomy operated by the National Research Council of Canada.
- The DRAO site is protected against man-made radio-frequency interference by municipal, provincial and federal regulation.
- The CHIME telescope's large collecting area, wide bandwidth and enormous field-of-view make it a superb detector of FRBs.
- The CHIME FRB event rate is predicted to be between 2 and 50 FRBs per day.
- So high an event rate promises major progress on this puzzling new astrophysical phenomenon.
- Bright CHIME-discovered FRBs will be found in real time and reported immediately to the worldwide astrophysical community for multi-wavelength follow up.

What is a magnetar?

- As per NASA, a magnetar is a neutron star, "the crushed, city-size remains of a star many times more massive than our Sun." The magnetic field of such a star is very powerful, which can be over 10 trillion times stronger than a refrigerator magnet and up to a thousand times stronger than a typical neutron star's.
- Neutron stars are formed when the core of a massive star undergoes

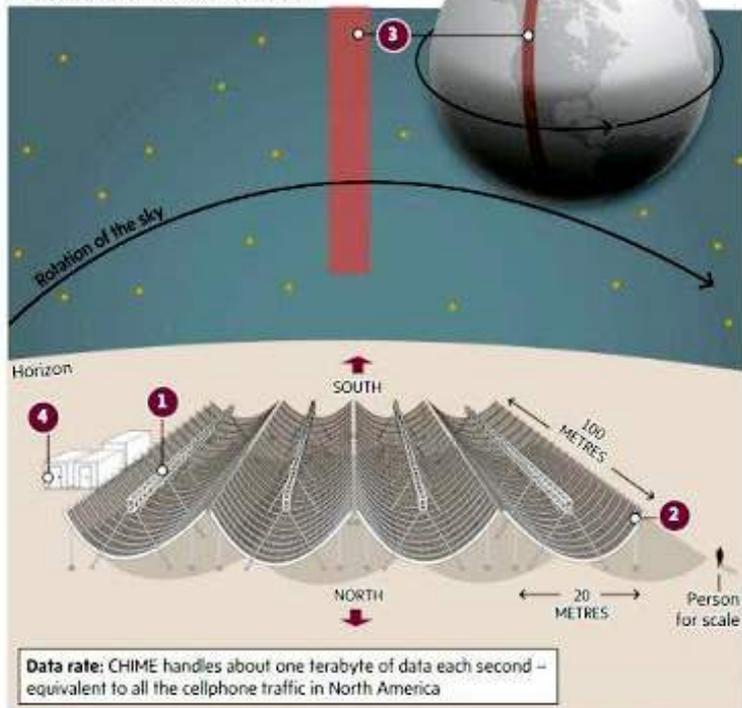


gravitational collapse when it reaches the end of its life. This results in the matter being so tightly packed that even a sugar-cube sized amount of material taken from such a star weighs more than 1 billion tons, which is about the same as the weight of Mount Everest, according to NASA.

- Magnetars are a subclass of these neutrons and occasionally release flares with more energy in a fraction of a second than the Sun is capable of emitting in tens of thousands of years. In the case of SGR 1935, for instance, the X-ray portion of the simultaneous bursts it released in April carried as much energy as the Sun produces in a month, assuming that the magnetar lies towards the nearer end of its distance range.

THE CHIME RADIO TELESCOPE

The telescope has no moving parts but collects radio signals in a narrow zone of sky that runs north to south. As the Earth turns, celestial objects that emit radio waves pass through the zone and are detected by CHIME.



- 1 **Focal line:** each line consists of 256 individual receivers spaced 30 cm apart
- 2 **Reflectors:** made of steel mesh parabolic "half-pipes" aligned north-south
- 3 **Field of view:** nearly the entire sky that can be seen from the telescope's latitude rotates through its field of view every 24 hours
- 4 **Processors:** on-site computer system cross-compares inputs from 1,024 receivers to work out incoming direction of signals and map the radio sky overhead

One Health Global Leaders Group on Antimicrobial Resistance(AMR)

S & T

Why in news?

- Recently, a global group called 'One Health Global Leaders Group on Antimicrobial Resistance' was launched in the wake of rising antimicrobial resistance (AMR).

About the group

- The group was created in response to a recommendation from the Interagency Coordination Group on Antimicrobial Resistance (IACG) that submitted its report to the Secretary-General of the United Nations in 2019.
- The IACG was convened by the Secretary-General of the United Nations after the UN high-level meeting on AMR in 2017.

- Launched by the three global organisations: Food and Agriculture Organization (FAO), World Organisation for Animal Health (OIE) and the World Health Organization (WHO).

Members:

- This 20-member group comprises heads of states, current and former ministers of different countries, leaders from the private sector and civil society.
- Ex-officio members - Heads of FAO, OIE and WHO.

Chaired by:

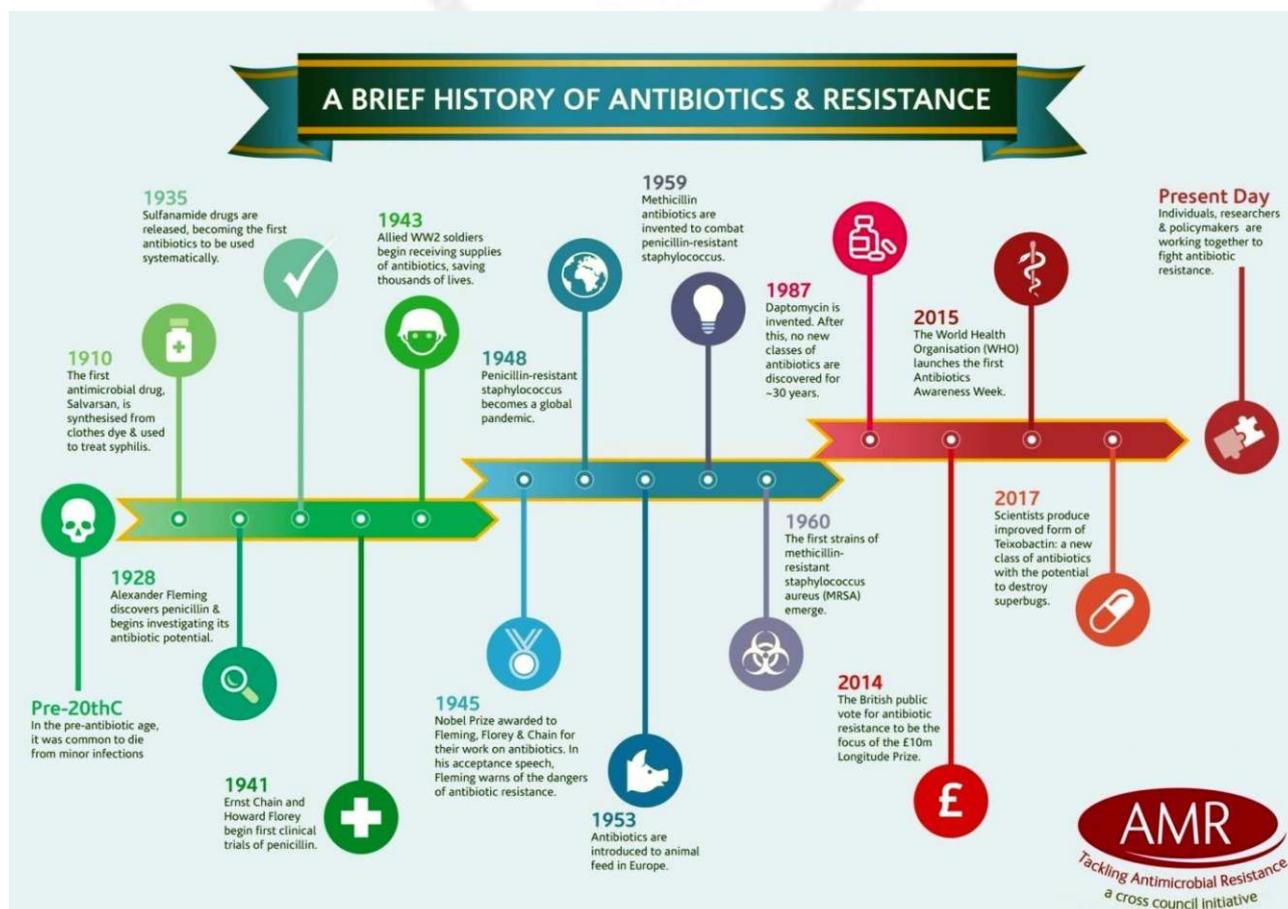
- It is co-chaired by the prime ministers of Barbados and Bangladesh, respectively.
- The group will meet twice a year.

Objectives of the group

- The group will harness the leadership and influence of these world-renowned figures to catalyze global attention and action to preserve antimicrobial medicines.
- This will help in averting the disastrous consequences of antimicrobial resistance.
- The group has to
 - Monitor the global response to antimicrobial resistance;
 - Maintain public momentum;
 - Provide regular reports on the science and evidence related to AMR to the UN member states;
 - Advocate for the inclusion of AMR in investments on agriculture, health, development, food and feed production; and
 - Push for multi-stakeholder engagement on the issue.

What is Anti-Microbial Resistance (AMR)?

- According to WHO, Antimicrobial resistance (AMR) is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.



Challenges posed by AMR:

- Anti-microbial resistance causing difficulty in controlling the diseases in the community and ineffective delivery of health care services.
- The issue of AMR causes out of pocket expenditure on health care, especially on medicines. The use of high order drugs or second-line expensive antibiotics pushing treatment cost high.
- Neonates and elderly both are prone to infections and are vulnerable.
- WHO published a list of 'priority pathogens', also called superbugs which pose the greatest threat to human health.
- Antibiotic resistance is emerging as the threat to successful treatment of infectious diseases, organ transplantation, cancer chemotherapy and major surgeries.
- Excessive use of antibiotics in bovines or poultry can cause further complication in the later food chain. For example: of tested birds destined for meat consumption, 87% had super germs based on a study published in the journal environment health perspectives.
- Annual healthcare cost due to antibiotics resistance is estimated to be very high.
- It will pose socio-economic problems in the nation like more budgetary requirement goes to the health care and this will eventually hamper the country growth both in respect of materialistic and social values.
- Recently scientists found that gut bacteria are a reservoir of drug resistance genes which, when transferred to disease-causing bacteria, may make them untreatable.

Factors causing AMR in INDIA:

- **Antibiotic Consumption:** Inappropriate consumption of broad-spectrum (last resort) of antibiotics is high because of changing prescription practice in the healthcare system due to the non-availability of a narrow spectrum of antibiotics.
- **Social Factor:** inappropriate antibiotic use among the general public like
 - Self-medication to avoid the financial burden
 - Doctors may perceive that they are compelled to give antibiotics as patients come with a preconceived idea of quick relief.
 - Nexus between doctors and pharmaceutical companies put pressure on doctors and pharmacists to prescribe new antibiotics.
- **Antibiotics Consumption in Food-Animals:** Use of antibiotics as growth promoters in food animals and poultry is a common practice and later it evolves in the food chain.
- **Poor Sanitation:** The large proportion of sewage is disposed of untreated into receiving water bodies, leading to gross contamination of rivers with antibiotic residues, antibiotic-resistant organisms.

Prevention and control measures:

- **Individuals:** To prevent and control the spread of antibiotic resistance, individuals should:
 - Only use antibiotics when prescribed by a certified health professional.
 - Never demand antibiotics if your health worker says you don't need them.
 - Always follow your health worker's advice when using antibiotics.
 - Never share or use leftover antibiotics.
 - Prevent infections by regularly washing hands, preparing food hygienically, avoiding close contact with sick people, practising safer sex, and keeping vaccinations up to date.
- **Policy makers:** To prevent and control the spread of antibiotic resistance, policy makers should:
 - Ensure a robust national action plan to tackle antibiotic resistance is in place.
 - Improve surveillance of antibiotic-resistant infections.
 - Strengthen policies, programmes, and implementation of infection prevention and control measures.
 - Regulate and promote the appropriate use and disposal of quality medicines.
 - Make information available on the impact of antibiotic resistance.
- **Health professionals:** To prevent and control the spread of antibiotic resistance, health professionals should:
 - Prevent infections by ensuring that their hands, instruments, and environment are clean.
 - Only prescribe antibiotics when they are needed, according to current guidelines.
 - Report antibiotic-resistant infections to surveillance teams.
 - Talk to their patients about how to take antibiotics correctly, antibiotic resistance and the dangers of misuse.
- **Agriculture sector:** To prevent and control the spread of antibiotic resistance, the agriculture sector should:
 - Only give antibiotics to animals under veterinary supervision.
 - Not use antibiotics for growth promotion or to prevent diseases in healthy animals.
 - Vaccinate animals to reduce the need for antibiotics and use alternatives to antibiotics when available.
 - Promote and apply good practices at all steps of production and processing of foods from animal & plant sources.
 - Improve biosecurity on farms and prevent infections through improved hygiene and animal welfare.

Other initiatives include:

- To prevent the Over the counter sales of antibiotics, central drug standard control organization(CDSO) prohibits medical stores from selling 24 key antibiotics without doctor's prescription.
- India's Red Line campaign – which demands that prescription-only antibiotics be marked with a red line, to discourage the over-the-counter sale of antibiotics– is a step forward.
- National Health Policy, 2017, terms antimicrobial resistance as one of the key healthcare issues and prioritizes the development of guidelines regarding antibiotic use and check on restricting the growth of antibiotics.
- The National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017 has assigned coordinated tasks to multiple government agencies involving health, education, environment, and livestock to change prescription practices and consumer behaviour and to scale up infection control and antimicrobial surveillance.
- FSSAI has set certain guidelines limiting the antibiotics in food products such as fish and honey.

Indian Council of Medical Research(ICMR)**Science and Technology****Why in news?**

Recently, the Union Home Minister inaugurated a mobile COVID-19 RT-PCR Lab ICMR in New Delhi, jointly developed by Spice Health and the ICMR .

About the ICMER

- It is the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world.
- In 1911, the Government of India set up the Indian Research Fund Association (IRFA) with the specific objective of sponsoring and coordinating medical research in the country.
- After independence, several important changes were made in the organisation and the activities of the IRFA.
- It was redesignated the Indian Council of Medical Research (ICMR) in 1949, considerably expanding the scope of functions (with Dr. C.G. Pandit as its first Director).
- First meeting of the Governing Body of the Indian Research Fund Association (IRFA) was held on November 15, 1911 (at the Plague Laboratory, Bombay, under the Chairmanship of Sir Harcourt Butler).
- The Governing Body of the Council is presided over by the Union Health Minister. It is assisted in scientific and technical matters by a Scientific Advisory Board comprising eminent experts in different biomedical disciplines.
- **Funding:** The ICMR is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare.
- The Council promotes biomedical research in the country through intramural as well as extramural research.

**Role in research**

- The Council's research priorities coincide with the National health priorities such as control and management of communicable diseases, fertility control, maternal and child health, control of nutritional disorders, developing alternative strategies for health care delivery, containment within safety limits of environmental and occupational health problems; research on major non-communicable diseases like cancer, cardiovascular diseases, blindness, diabetes and other metabolic and haematological disorders; mental health research and drug research (including traditional remedies). All these efforts are undertaken with a view to reduce the total burden of disease and to promote health and well-being of the population.

Chapare Virus**Science and Technology****Why in news?**

Recently, the researchers from the US Centers for Disease Control and Prevention have discovered that a rare Ebola-like illness that is believed to have first originated in rural Bolivia in 2004 can spread through human-to-human transmission.

What is chapare virus?

- The Chapare hemorrhagic fever is caused by the same arena virus family that is responsible for illnesses such as the Ebola virus disease (EVD).

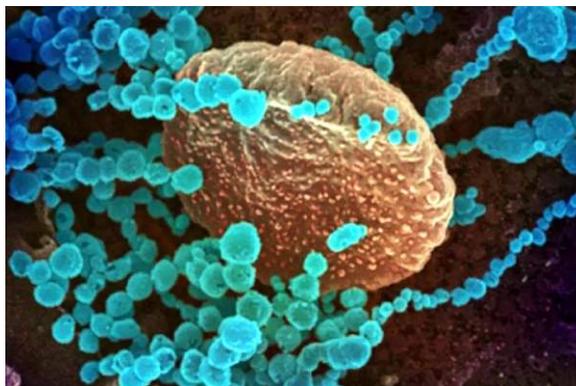
- It is named Chapare after the province in which it was first observed, causes a hemorrhagic fever much like Ebola along with abdominal pain, vomiting, bleeding gums, skin rash and pain behind the eyes.
- Viral hemorrhagic fevers are a severe and life-threatening kind of illness that can affect multiple organs and damage the walls of blood vessels.

Mode of Spread

- CDC website mentions that arena viruses like the Chapare virus are generally carried by rats and can be transmitted through direct contact with the infected rodent, its urine and droppings, or through contact with an infected person.

Key findings of the researchers

- Researchers from the US' Centers for Disease Control and Prevention (CDC) revealed that by examining the 2019 outbreak in Bolivia, they had found the virus can spread from person to person, particularly in healthcare settings.
- They found that the disease can be transmitted sexually
- They also discovered signs of the virus in rodents in the "home and nearby farmlands" surrounding the first person infected during the 2019 outbreak



Various threats posed by the Chapare virus

- Scientists have pointed out that the Chapare virus is much more difficult to catch than the coronavirus as it is not transmissible via the respiratory route.
- Instead, Chapare spreads only through direct contact with bodily fluids.
- As per the scientists healthcare workers and family members who come in close contact with infected people are particularly at risk of contracting the illness

Area of transmission

- The disease is also known to be most commonly transmitted in more tropical regions, particularly in certain parts of South America where the small-eared pigmy rice rat is commonly found.

Hepatitis C drugs shown to inhibit coronavirus enzyme

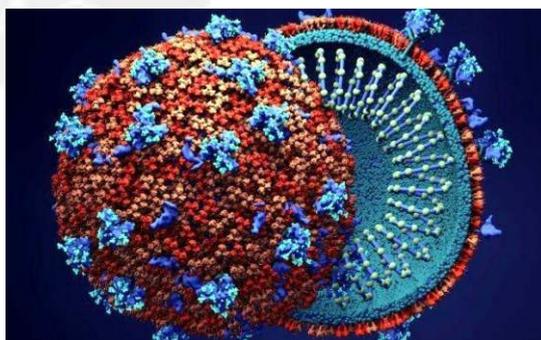
Science and Technology

Why in news?

New research finds that Several Hepatitis C drugs have been found to inhibit a crucial protein enzyme in the novel coronavirus SARS-CoV-2

Key highlights of the research

- The study was led by researchers at the US Department of Energy's Oak Ridge National Laboratory.
- Researchers looked at several well-known drug molecules for potential repurposing efforts. These included three hepatitis C protease inhibitors: telaprevir, narlaprevir and boceprevir.



Observation of researchers

- According to the researchers, after entering the human cell using its spike protein, the coronavirus uses an enzyme called the main protease to replicate.
- The coronavirus expresses long chains of compounds, which must be cut by the main protease to become functional proteins.
- Inhibiting the functioning of the main protease, therefore, is vital to stopping the virus from spreading in patients with Covid-19.
- Researchers performed room-temperature X-ray measurements to build a three-dimensional map of chemical bonds formed between the protease and the drug molecules
- Their experiments yielded promising results for certain hepatitis C drugs in their ability to bind and inhibit the main protease — particularly boceprevir and narlaprevir

What was the technique used by the study?

- The study used a technique called in vitro enzyme kinetics.

- It enables researchers to study the protease and the inhibitor in a test tube to measure the inhibitor's binding affinity with the protease.
- The higher the binding affinity, the more effective the inhibitor is at blocking the protease from functioning.

First ever Vaccine listed under WHO Emergency Use Listing (EUL)

S & T

Why in news?

World Health Organisation(WHO) has added **novel oral polio vaccine type2(nOPV2)**, vaccine that has proven useful in treatment of Vaccine derived polio virus (VDPV) strain to its Emergency Use Listings. This is being done in **backdrop of increasing cases** of VDPV between 2010 and 2019. Total of 149 immunodeficiency VDPV cases were reported since 1961, **with 66% since 2010 onwards.**

What is EUL?

The WHO Emergency Use Listing Procedure (EUL) is a risk-based procedure for assessing and listing unlicensed vaccines, therapeutics and in vitro diagnostics with the ultimate aim of expediting the availability of these products to people affected by a public health emergency. This will assist interested UN procurement agencies and Member States in determining the acceptability of using specific products, based on an essential set of available quality, safety, and efficacy and performance data.

The procedure is a key tool for companies wishing to submit their products for use during health emergencies.

Eligibility of candidate products

The EUL concerns three product streams (vaccines, therapeutics and in vitro diagnostics), each of which has specific requirements for products to be eligible for evaluation under the EUL procedure.

The following criteria must be met:

- The disease for which the product is intended is serious or immediately life threatening, has the potential of causing an outbreak, epidemic or pandemic and it is reasonable to consider the product for an EUL assessment, e.g., there are no licensed products for the indication or for a critical subpopulation (e.g., children);
- Existing products have not been successful in eradicating the disease or preventing outbreaks (in the case of vaccines and medicines);
- The product is manufactured in compliance with current Good Manufacturing Practices (GMP) in the case of medicines and vaccines and under a functional Quality Management System (QMS) in the case of IVDs; and
- The applicant undertakes to complete the development of the product (validation and verification of the product in the case of IVDs) and apply for WHO prequalification once the product is licensed.

Kala-Azar or Visceral Leishmaniasis (VL)

Science and Technology

Why in news?

According to WHO, globally, about 7 to 10 lakh new cases occur annually.

India accounts for about **two-thirds of the total global cases**, and the disease is endemic to **Bihar, Jharkhand, Uttar Pradesh and West Bengal**

About KALA-AZAR

- It is a chronic and potentially fatal parasitic disease of the internal organs, particularly the liver, spleen, bone marrow and lymph nodes.
- It is caused by bites from female phlebotomine sand flies – the vector (or transmitter) of the leishmania parasite.
- The sand flies feed on animals and humans for blood, which they need for developing their eggs.
- The term "kala-azar" comes from India where it means black fever. It is also known as Indian leishmaniasis, visceral leishmaniasis, leishmania infection, dum dum fever, black sickness.
- It spreads due to infection by the parasite called Leishmaniadonovani.
- Leishmaniadonovani is transmitted by sandfly bites in parts of Asia (primarily India), Africa (primarily Sudan), South America (primarily Brazil), Europe (primarily in the Mediterranean region) and in North America.
- According to WHO, if the disease is not treated, the fatality rate in developing countries can be as high as 100% within 2 years.

Symptoms of Kala azar

- It is associated with fever, loss of appetite (anorexia), fatigue, enlargement of the liver, spleen and nodes and suppression of the bone marrow.
- It also increases the risk of other secondary infections.



Diagnosing Kala azar

- The first oral drug found to be effective for treating kala-azar is miltefosine.
- The most common method of diagnosing kalaazar is by dipstick testing. However, this method is highly problematic.

Global Center For Traditional Medicine

Science and Technology

Why in news?

Recently, the World Health Organisation (WHO) has announced that it will set up a Global Centre for Traditional Medicine in India.

Key Highlights

- The Traditional Medicine Centre will be aimed at strengthening the evidence, research, training and awareness of traditional and complementary medicine.
- The new centre will support WHO's efforts to implement the WHO traditional medicine strategy 2014-2023.
- The traditional systems of medicine such as Ayurveda can play an important role in integrated people-centric health services and healthcare.

Need for Global Centre for Traditional Medicine in India

- The Institute of Teaching & Research in Ayurveda (ITRA) at Jamnagar (an Institute of national importance) and the National Institute of Ayurveda (NIA) in Jaipur (a deemed university) were inaugurated on the occasion of 5th Ayurveda Day.
- The exports of ayurvedic products from India had risen 45 per cent in September 2020 compared to 2019.
 - There has been a significant increase in exports of spices like turmeric and ginger, considered immunity boosters which shows the sudden boost in confidence in ayurvedic solutions and Indian spices in the world.
- The need of the hour was to bring ayurveda knowledge out of books, scriptures and home remedies and develop this ancient knowledge as per modern needs.

- World Health organization (WHO) has launched Traditional Medicine Strategy 2014-2023 to help health care leaders to develop solution that contribute to a broader vision of improved health and patient autonomy.
- **Goals:** The strategy has two key goals –
 - to support Member States in harnessing the potential contribution of Traditional and Complementary Medicine (T&CM) to health, wellness and people centered health care and
 - to promote the safe and effective use of T&CM through the regulation of products, practice and practitioners.
- **Strategy:** These goals will be reached by implementing three strategic objectives are 1) Building the knowledge base and formulating nation's policies; 2) Strengthening safety, quality and effectiveness through regulation; and 3) Promoting universal health systems.
- **Significance:** Updating and enhancing the strategy has allowed WHO to acquire a better understanding of how to boost the global integration of T&CM into health systems. It will provide Member States with a road map to achieving further success in their T&CM strategic planning.

India Mobile Congress (IMC) 2020

Science and Technology

Minister of State for Communications announces the fourth edition of India Mobile Congress 2020

About India Mobile Congress 2020

- The IMC 2020 is scheduled for 8th -10th December and will be held virtually this year.
- It is organized by the Department of Telecommunications (DoT) and Cellular Operators Association of India (COAT)
- Theme: "Inclusive Innovation – Smart I Secure I Sustainable"
- It is the biggest technology platform in Asia that brings together top policy makers, global industry experts, academia, regulators and analysts to discuss and deliberate on critical industry issues that result in policy decisions and affect market trends in addition to inviting investments into the sector and driving innovations.



- India Mobile Congress is committed to put India on the global technology map and promote the idea of a self-reliant India (Atmanirbhar Bharat)
- IMC has established itself as a leading platform for bringing together the industry, Government, academia, and other ecosystem players to discuss, deliberate and display the latest industry technology trends around major themes such as SG, Artificial Intelligence (AI), Internet of things (IoT), Data Analytics, Cloud and Edge Computing, Open source tech, data privacy and cyber security, Smart Cities and automation.
- This year prime Partners include Dell Technologies, Ribbon Communications and Red Hat.

Thirty Meter Telescope Project

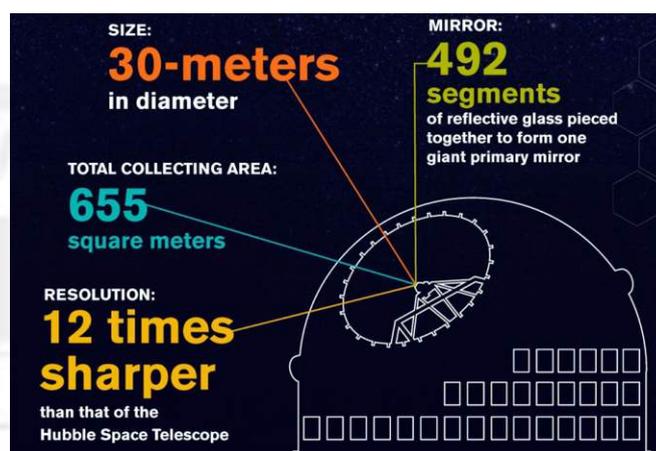
Science and Technology

Why in news?

Indian astronomers had worked closely with Nobel Laureate Andrea Ghez on the design of back-end instruments and possible science prospects of the Thirty Meter Telescope (TMT) project being installed at Mauna Kea in Hawaii.

About The Thirty-meter telescope (TMT) project

- It is an astronomical observatory with an extremely large telescope (ELT).
- The "Thirty Metre" name refers to the 30-metre diameter of the mirror, with 492 segments of glass pieced together. This arrangement makes it three times as wide as the world's largest existing visible-light telescope.
- It is an international partnership between CalTech, Universities of California, Canada, Japan, China, and India.
- **Mission:** It seeks to advance scientific knowledge while fostering connection among the partner countries and their citizens, who represent over half the world's population.
- **Purpose:**
 - It is used to study fainter objects in the universe, which gives information about early stages of evolution of the universe
 - It also allows scientists to see deeper into space and observe cosmic objects with unprecedented sensitivity.
- **Location:** Presently located at Mauna Kea (a dormant volcano), Hawaii islands.
- An alternate proposed site is ObservatoriodelRoque de los Muchachos (ORM) on La Palma in the Canary Islands, Spain.



India and TMT:

- The Department of Science and Technology (DST) and the Department of Atomic Energy (DAE) are the participating agencies.
- India has pledged \$200 million to the project.
- India will contribute 83 mirrors out of 492 precisely for the telescope.

Physics Nobel Prize 2020

Science and Technology

- It was awarded to three astrophysicists Roger Penrose from the UK, Reinhard Genzel from Germany, and Andrea Ghez from the USA.
- Professor Ghez received the prize for the discovery of a supermassive black hole at the centre of the Milkyway galaxy, now known to be the Sagittarius A*.

Smart Screens from discarded groundnut shells

Science and Technology

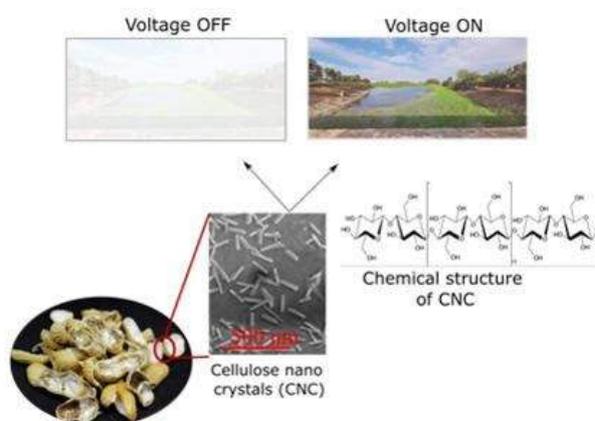
Why in news?

Indian scientists develop energy efficient smart screens from discarded groundnut shells

About Smart Screens

- The Indian scientists have developed an eco-friendly smart screen from groundnut shells that **could help not only in preserving privacy but also in energy conservation by controlling light and heat passing through it and reducing air conditioning load.**

- In the smart screen application, liquid crystal molecules were confined in a polymer matrix.
- The matrix was built using **cellulose nanocrystals (CNC)** which were **prepared from discarded groundnut shells**.
- The device could be developed from any cellulose or agricultural waste, due to certain properties of groundnut waste, the smart screen developed from groundnut waste has been found to be most efficient.
- Apart from the original intention of targeted privacy creation, the device can be employed for a whole range of possible applications, especially in energy conservation by controlling the amount and window of infrared light that is permitted to pass.
- For example, while a window having this technology would remain transparent to the entire visible region, undesirable levels of heat radiation could be significantly reduced, keeping the enclosure cool.



Geo-Polymer Aggregate

Science and Technology

Why in news?

After its successful research project of laying road with geo-polymer substance, a material made using **90% fly ash content** in it, NTPC-Ramagundam has now developed **geo-polymer coarse aggregates as a replacement to natural aggregates** for use in building construction.

ABOUT:

- The material is developed as part of the concept of waste-to-best to make best use of fly ash generated in the thermal power plant.
- Technical parameters of the newly developed substance were tested by the National Council for Cement and Building Materials (NCCBM) at Hyderabad as per the Indian standards for its suitability to use in concrete works.
- The council has found the parameters of the material to be in the acceptable range and recommended it for use in building construction as a substitute for natural aggregates such as cement.
- Geo-polymer aggregate will not only increase fly ash utilisation but also saves the environment.
- Further, requirement of land for ash pond will be negligible.
- In fact, fly ash based geo-polymer mortar will act as a binding agent.
- The geo-polymer aggregates will help in reducing carbon emission and has great potential for reduction of water consumption.
- According to one estimate, the requirement of aggregates for infrastructure development in the country is about 2,000 million tonnes every year.
- The aggregate developed by NTPC-Ramagundam from fly ash will help in meeting the demand to a great extent and will also reduce the impact on environment caused by natural aggregates which require quarrying of natural stone.



Geoinformatics

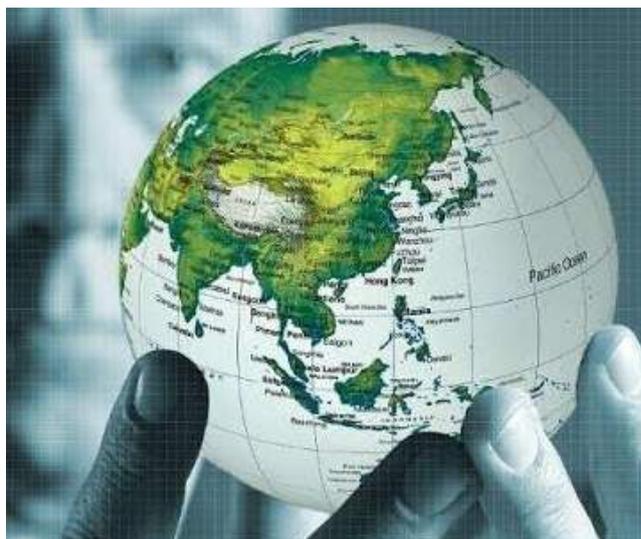
Science and Technology

What is it?

- Geoinformatics is the science and the technology which develops and uses information science infrastructure to address the problems of geography, cartography, geosciences.
- The term 'Geoinformatics' is a combination of two words- Geology or Geography and Informatics.
- Thus, it deals with integrating computer science and geosciences to solve complex scientific questions
- The realm of Geoinformatics is very broad because it comprises of subjects like Remote sensing, GPS, GIS, cartography, hydrology, climatology, Aerial photography, photogrammetry etc. Hence it has application in various fields
- For example: Recently Commerce and Industry Ministry launched GIS-enabled Land Bank System.

Advantages

- It has the ability of improving the organizational integration. GIS would then integrate software, hardware and also data in order to capture, analyse, manage and so display all forms of information being geographically referenced.
- GIS would also allow viewing, questioning, understanding, visualizing and interpreting the data into numbers of ways which will reveal relationships, trends and patterns in the form of globes, maps, charts and reports.
- Geographic Information System is to provide a help in answering questions as well as solve problems through looking at the data in a way which is easily and quickly shared.
- GIS technology could also be integrated into framework of any enterprise information system.
- And there would be numbers of employment opportunities.
- On the other hand, there are as well some disadvantages that might be experienced because of using the GIS technology. And some of those drawbacks are the following:
 - GIS technology might be considered as expensive software.
 - It as well requires enormous data inputs amount that are needed to be practical for some other tasks and so the more data that is to put in.
 - Since the earth is round and so there would be geographic error that will increase as you get in a larger scale.
 - GIS layers might lead to some costly mistakes once the property agents are to interpret the GIS map or the design of the engineer around the utility lines of the GIS.
 - There might be failures in initiating or initiating additional effort in order to fully implement the GIS but there might be large benefits to anticipate as well.



AIM–Sirius Innovation Programme 3.0

Science and Technology

Why in news?

Recently, Atal Innovation Mission (AIM) and Sirius, Russia launched 'AIM–Sirius Innovation Programme 3.0'

About 'AIM–Sirius Innovation Programme 3.0'

- It is a 14-day virtual programme for Indian and Russian schoolchildren
- The first Indo-Russian bilateral youth innovation initiative, the AIM–Sirius programme seeks to develop technological solutions (both web- and mobile-based) for the two countries.
- During the week-long programme 48 students and 16 educators and mentors will create 8 virtual products and mobile applications addressing global challenges-- across a range of areas such as culture, distance education, applied cognitive science, health and well-being, sports, fitness, and games training, chemistry, artificial intelligence, and digital financial assets--in the wake of the covid-19 pandemic.
- Innovations developed by the student teams will leverage 21st-century technologies such as app development, artificial intelligence, blockchain, machine learning, data analytics and visualization, UI/UX, virtual reality, augmented reality, gamification, 3D design, and rapid prototyping, among others



AIM-SIRIUS Innovation Programme 3.0



Immunoglobulins

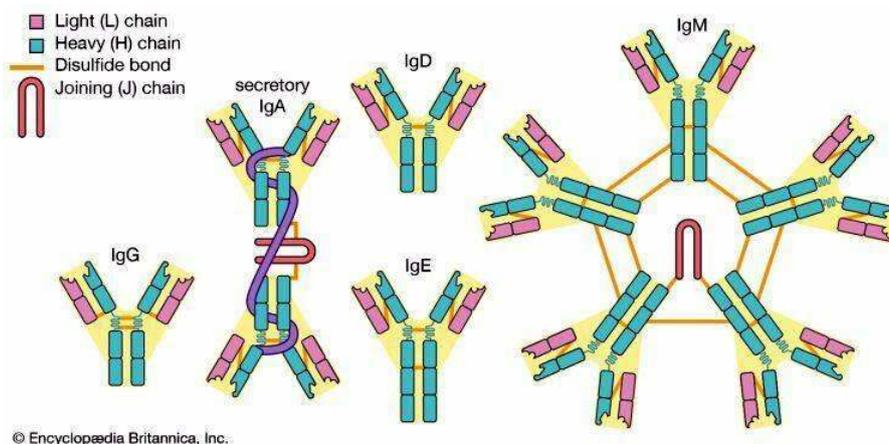
Science and Technology

- Immunoglobulins, also called antibodies, are glycoprotein molecules that make up an important part of the immune system, which is responsible for fighting off infectious disease and foreign "invasions".
- Often abbreviated as "Ig", antibodies are found in blood and other bodily fluids of humans and other vertebrate animals.
- They help identify and destroy foreign substances such as microbes (e.g. bacteria, protozoan parasites & viruses).

- They are produced by B-lymphocytes, which are a class of leukocytes (white blood cells).
- Immunoglobulins are classified into five categories: **IgA, IgD, IgE, IgG and IgM.**

- Only **IgA, IgG and IgM** are found in significant amounts in the human body, but all are important or potentially important contributors to the human immune response.

- **IgA** – It accounts for about 15 percent of the antibodies in the human system, making it the second most common type of immunoglobulin. Only about 6 percent is found in the blood serum. It is seen in a wide variety of biological secretions, including milk, saliva, tears and mucus. It tends to be nonspecific in terms of the types of foreign



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presences it targets. Its presence on mucus membranes makes it an important gate-keeper in physically vulnerable locations, or the spots at which microbes might easily find ways deeper into the body.

- **IgG** – It is the dominant antibody in the human body, accounting for a whopping 85 percent of all immunoglobulins. It is found chiefly in the blood and lymph. It has the unique ability to cross placenta in pregnant women, allowing it to protect the unborn foetus and newborn baby.
- **IgM** – It is the colossus of immunoglobulins. IgM has a short half life (about five days) and makes up approximately 13 to 15 percent of serum antibodies. It is also the first line of defense among its four antibody siblings, being the first immunoglobulin made during a typical immunological response. IgM agglutinates invading material, compelling individual pieces to stick together for easier clearing from the body.

India's AI supercomputer Param Siddhi

Science and Technology

Why in news?

Recently, Param Siddhi bagged 63rd rank in the list of 500 most powerful supercomputers in the world.

About:

- It is the second Indian supercomputer to be entered in the top 100 on the Top500 list.
- It is established under the National Supercomputing Mission (NSM).
- Significance and uses– It will empower the national academic and R&D institutions.
- It will accelerate research and development in the fight against COVID-19 through faster simulations, medical imaging, genome sequencing.
- Help in weather forecasting.



Supercomputer in India

- The supercomputer is a computer with a high-level computational capacity compared to a general-purpose computer.
- Performance of a supercomputer is measured in floating-point operations per second (FLOPS) instead of million instructions per second (MIPS).
- India has 4 supercomputers in the Top-500 list of the world's top 500 supercomputers and Pratyush and Mihir also two among them.
- Pratyush- Launched in January 2018, it is the fourth fastest High-Performance Computer (HPC) dedicated to climate modelling in the world.
- Mihir- Mihir (146th on the list), installed at the National Centre for Medium-Range Weather Forecasting (NCMRWF), New Delhi.

National Supercomputing Mission (NSM):

- Launched in 2015.
- Objective- To make India one of the world leaders in Supercomputing and to enhance India's capability in solving grand challenge problems of national and global relevance.

- To attain global competitiveness and ensure self-reliance in the strategic area of supercomputing technology.
- **Salient Features:**
- The mission would be implemented jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY) through two organizations the Centre for Development of Advanced Computing (C-DAC) and the Indian Institute of Science (IISc), Bangalore.

What is the Top-500 Project?

- Started in 1993, it ranks the 500 most powerful non-distributed computers in the world.
- It publishes an updated list of the supercomputers twice a year.
- Currently, China dominates the list with 229 supercomputers, leading the second place (United States) by a record margin of 121.
- Japanese supercomputer Fugaku (442 petaflops) and IBM's Summit (148.8 petaflops) are the two most powerful supercomputers in the world.

About C-DAC:

- It is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY) for carrying out R&D in IT, Electronics and associated areas.
- PARAM 8000, the first supercomputer of India, was built by CDAC.
- It was established after denial of import of Cray Supercomputer (dual-use technology which could be used for nuclear weapon simulation), due to arms embargo.

M Dwarf Stars

Science and Technology

Why in news?

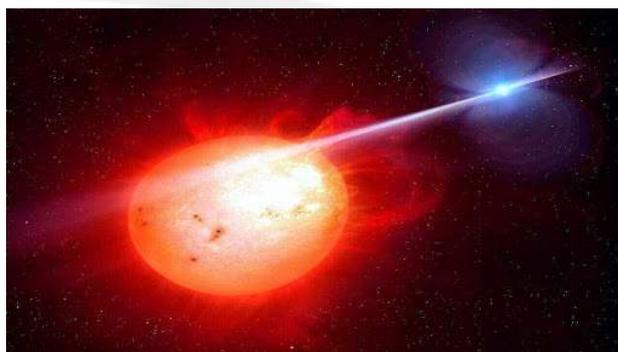
Recently, the scientists have established some **empirical relationships enabling the use of spectral indices** for finding the **fundamental parameters of M dwarf stars** that could identify them as potentially habitable.

Key Highlights

- The NASA's Kepler mission suggests that M dwarfs are swarming with rocky planets, making the characterization of these low-mass stars crucial.
- A total of 53 M dwarfs were studied using the TIFR Near-Infrared (NIR) Spectrometer and Imager (TIRSPEC) instrument on the 2-m Himalayan Chandra Telescope (HCT) at Hanle, India.
- Using effective temperature (Teff), radius, and luminosity of nearby bright calibrator stars, the team has created new empirical relationships among those fundamental parameters and spectral indices of M dwarfs.

What are M Dwarf Stars?

- M dwarfs, also known as Red Dwarfs, are the tiniest of the stars that have masses ranging from about 8 percent to about 50 percent of the Sun's mass.
- The planets circling an M dwarf must be in a close orbit to the star to be warm enough for life, like campers huddling around a small fire.
- The term "red dwarf" does not refer to a single kind of star.
- It is frequently applied to the coolest objects including K and M dwarfs which are true stars and brown dwarfs, often referred to as "failed stars" because they do not sustain hydrogen fusion in their cores.



Formation and Characteristics of M Dwarfs

- A cloud of dust and gas is drawn together by gravity and begins rotating which clumps at the center and when it reaches the critical temperature, fusion begins.
- The red dwarf stars have relatively low pressures, a low fusion rate, and a low temperature.
- The low temperature of red dwarfs implies that they are far dimmer than stars like the sun.
- The low temperature also means that they burn through their supply of hydrogen less rapidly.
- The red dwarf stars live for so long that not one of them has reached an advanced stage of evolution since the universe was created.
- The determination of stellar parameters in Mdwarfs have been a challenging task as these Mdwarfs are smaller, cooler, and fainter than Sun-like stars. These new empirical relationships could help overcome this challenge.

Asteroid 16 Psyche

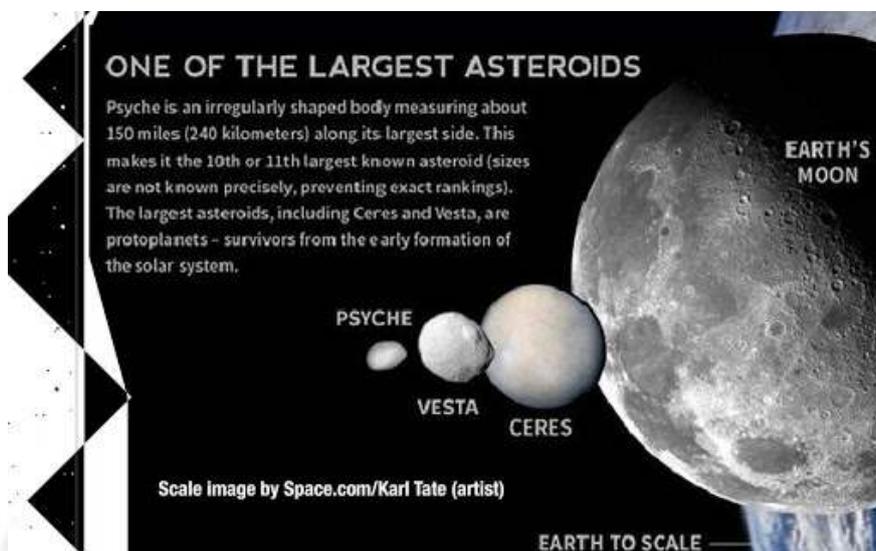
Science and Technology

Why in news?

A recent study has found that asteroid 16 Psyche, which orbits between Mars and Jupiter, could be made entirely of metal and is worth an estimated \$10,000 quadrillion — more than the entire economy of Earth.

What is asteroid 16 Psyche?

- Located around 370 million kilometres away from Earth, asteroid 16 Psyche is one of the most massive objects in the asteroid belt in our solar system.
- The somewhat potato-shaped asteroid has a diameter of around 140 miles.
- Unlike most asteroids that are made up of rocks or ice, scientists believe that Psyche is a dense and largely metallic object thought to be the core of an earlier planet that failed in formation.



Significance:

- Metal asteroids are not commonly found in the solar system, and studying 16 Psyche may offer a rare glimpse of what the inside of a planet really looks like.
- This asteroid is made up of almost entirely of iron, nickel and several other rare materials like gold, platinum, cobalt, iridium and rhenium.
- New images from NASA's Hubble Space Telescope offer a closer view of the mysterious asteroid 16 Psyche, whose surface may mostly comprise iron and nickel, similar to the Earth's core.
- Scientists believe that the asteroid may be the leftover core of an earlier planet that lost its crust and mantle after multiple collisions during the creation of our solar system.

What is known about NASA's Psyche mission?

- NASA plans to launch a SpaceX Falcon Heavy rocket from Cape Canaveral Air Force Station in Florida to orbit the asteroid for around 21 months.
- The unmanned spacecraft will reach the asteroid in January, 2026.
- The first objective of the mission is to capture a photograph of the metallic asteroid, after which the spacecraft will study and map it from a distance.

Sentinel-6 Satellite: Jason-CS Mission

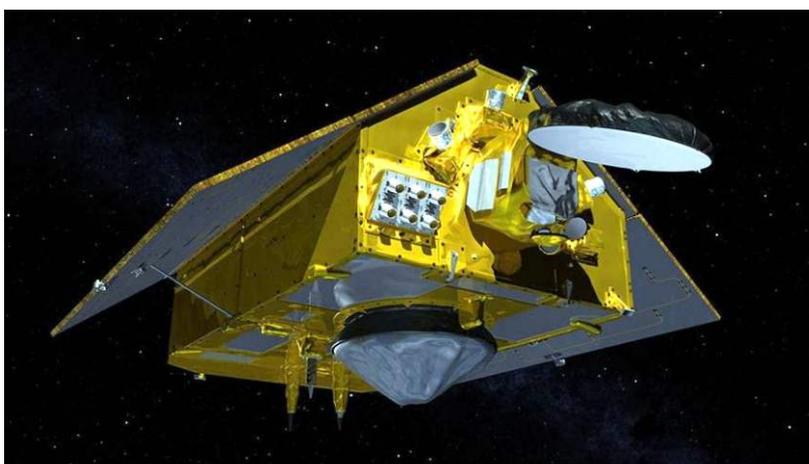
Science and Technology

Why in news?

Recently, Copernicus Sentinel-6 Michael Freilich satellite was launched from the Vandenberg Air Force base in California aboard a SpaceX Falcon 9 rocket.

About the mission

- Sentinel-6-Satellite is a part of the mission dedicated to measuring changes in the global sea level. The mission is called the Jason Continuity of Service (Jason-CS) mission.
- The Objective of the mission is to measure the height of the ocean, which is a key component in understanding how the Earth's climate is changing.
- It consists of two satellites, Sentinel-6 and the other, called Sentinel-6B, to be launched in 2025.



How does it work?

- The satellite will send pulses to the Earth's surface and measure how long they take to return to it, which will help in measuring the sea surface height. It will also measure water vapour along this path and find its position using GPS and ground-based lasers.
- As per NASA, this will help in monitoring critical changes in ocean currents and heat storage only from space, by measuring height of the sea surface.
- This will in turn help in foreseeing the effects of the changing oceans on the climate.

Ariel Space Mission**Science and Technology****Why in news?**

Recently, the European Space Agency formally adopted the Ariel Space Mission.

About the Mission:

- Ariel stands for the Atmospheric Remote-sensing Infrared Exoplanet Large-survey.
- It is a space exploration mission that will study the composition, nature and evolution of about 1000 extrasolar planets, simultaneously in visible and infrared wavelengths.
- It is the first mission dedicated to measuring the chemical composition and thermal structures of transiting exoplanets which lie far beyond the boundaries of the Solar System.
- It will be launched in 2029 and the duration of the mission will be 4 years.

What are Exoplanets?

- These are the planets that lie outside of the Solar System and orbit around stars other than the Sun. They are also called Extrasolar planets.
- They are not easy to detect due to their less brightness than the stars they orbit and hence it is difficult to see them directly using telescopes.
- One of the methods involves tracking the dimming of a star which happens when a planet passes in front of it. The Kepler telescope used this method.
- Another method to search for exoplanets is to look for "wobbly" stars.
- Wobbly Star: It is a star around which the planets don't orbit perfectly around its centre. From far away, this off-center orbit makes the star look like it's wobbling.

Significance of their Study:

- Scientists study the Exoplanets to find the possibility of life beyond Earth.
- It helps in understanding the functioning of stars and planets in the solar system.
- It helps in understanding the evolution of space and life.
- **Proxima Centauri b** is the closest exoplanet to Earth and is four light-years away and is deemed as habitable.

Other initiatives to study Exoplanets by NASA:

- **Kepler and K2 missions:** Both have been discontinued since 2018.
- **Transiting Exoplanet Survey Satellite (TESS) mission:** Launched in 2018 to look for planets orbiting the brightest stars in Earth's sky.
- **Large Binocular Telescope Interferometer (LBTI):** It is an instrument to study exoplanetary systems.
- **LBTI ExoplanetExoZodi Common Hunt (LEECH):** It is a high contrast direct imaging survey of exoplanets around nearby stars
- **Hunt for Observable Signatures of Terrestrial Systems (HOSTS):** It is for the survey of mid-infrared emission from exozodiacal dust in the habitable zones of nearby main-sequence stars.

Hyperloop Technology**Science and Technology****Why in news?**

The Virgin Hyperloop has completed the world's first passenger ride on a super-high-speed levitating pod system in the United States.

About:

- In India, the Maharashtra government has deemed Hyperloop a public infrastructure project and approved the Virgin Hyperloop-DP World Consortium as the original project proponent for the Mumbai-Pune Hyperloop project.

- Also, NITI Ayog cleared six new proposals for the public transportation system of India.
 - These technologies include metrinio, stadler buses, hyper loop, pod taxis, hybrid buses and freight railroad.

What is Hyperloop Technology?

- Hyperloop is a new mode of ultra-fast mass transportation solution that transports people and cargo through a pod in a vacuum environment.
- Working- Hyperloop works through the concept of shooting pods or compartments of passengers through an airtight tube that is in a partial vacuum.
 - The propulsion is done through magnetic levitation, with the air capsules or pods gliding or levitating over the tracks.
- A maglev train system uses two sets of magnets — one for attracting and moving the train forward along the track, and another for repelling and pushing the train off the track.



Merits of Hyperloop

- **Speed:** Because of sealed environment which offer little or no resistance, the pod can reach a speed up to 1,000 kph which is much faster than bullet train and even commercial aircraft.
- **Economical:** Hyperloop requires relatively less ground to construct and if it uses its own solar panels to generate electricity, the fare can be much cheaper as compared to bullet trains or aircraft.
- **Environmental friendly:** A greater benefit is that Hyperloop would run completely on electricity eliminating or reducing the need for fossil fuels and minimising greenhouse gases emission.
- **Less prone to human errors:** As the system is fully automated and sealed, the human related error can be averted.
- **Less Land Intensive:** In an already land-scarce country like ours, hyperloop will be a boon as the availability of land availability will not be an issue because steel tubes will be either erected on a column or tunnelled underground.
- One of its biggest advantages is that it can draw energy from any source including solar panels, windmills and even nuclear reactors.

Challenges

- Some experts are skeptical, saying that the proposals ignore the expenses and risks of developing the technology and that the idea is "completely impractical".
- Claims have also been made that the Hyperloop is too susceptible to disruption from a power outage or terror attacks to be considered safe
- High speed of capsule (almost at speed of sound) may cause dizziness to the passengers travelling due to vibration and jostling.
- In India where the funds for infrastructure are already thin, whether lakhs of crore can be spent for experimental transportation technology need to be considered more.

Need for new public transportation:

- Present levels of urban mobility are already generating many problems such as; high levels of congestion, environmental pollution, traffic fatalities.
- Present infrastructure for transportation is focused on mobility of vehicle rather than that of people.
- Nearly, 30 and 60% of a metropolitan area may be devoted to transportation, an outcome of the over-reliance on some forms of urban transportation.
- The scheme would provide a holistic solution for urban transportation problems ranging from parking policy, congestion pricing to transit-oriented development.

Why in news?

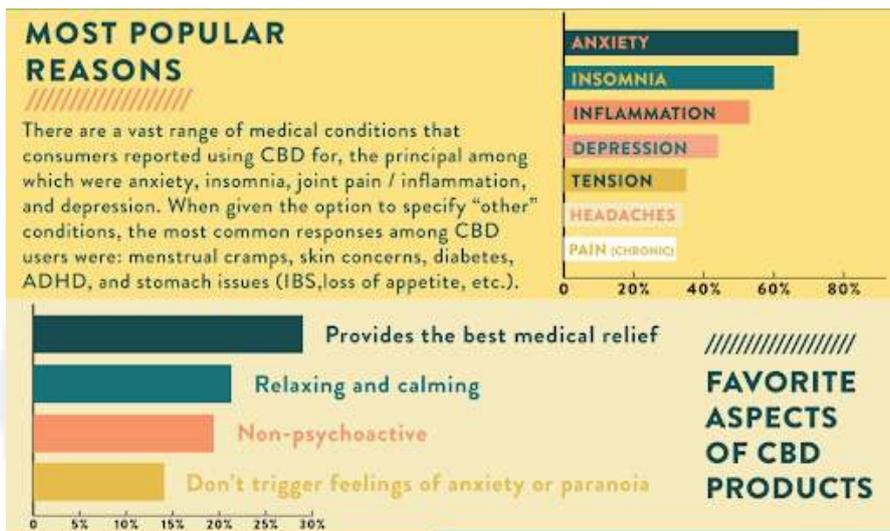
- **Odisha Space Application Centre** has proposed to help law enforcement agencies detect the cultivation of **hemp (a variety of cannabis)** using remote sensing and artificial intelligence technologies.

About the initiative

- The initiative will be able to produce reliable geographic information for law enforcement agencies and public policy planning authorities to monitor the illegal plantation of cannabis.
- The government is also planning to start a citizen reporting module in which people can take the images and videos of any illegal plantation and report through the app.

What is Cannabis?

- Cannabis is a generic term used to denote the several psychoactive preparations of the plant *Cannabis sativa*.
- The major psychoactive constituent in cannabis is Delta-9 tetrahydrocannabinol (THC).
- The Mexican name 'marijuana' is frequently used in referring to cannabis leaves or other crude plant material in many countries.
- Most species of cannabis are dioecious plants that can be identified as either male or female.
- The un-pollinated female plants are called hashish.
- Cannabis oil (hashish oil) is a concentrate of cannabinoids obtained by solvent extraction of the crude plant material or the resin.
- Cannabis is the most widely cultivated, trafficked and abused illicit drug in the world.



Uses:

- It has been found useful in cancer treatment like in multiple myeloma.
- Many people suffering from anxiety and depression are known to buy it legally in the US and bring it back to India for personal use in small quantities.

Affects:

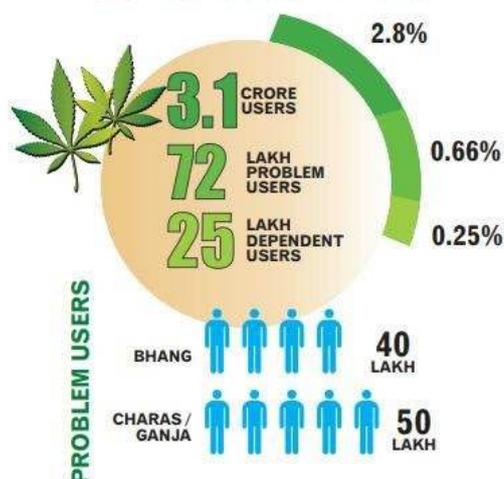
- Cannabis impairs cognitive development (capabilities of learning), including associative processes, free recall of previously learned items is often impaired when cannabis is used both during learning and recall periods

PREVALENCE OF CHARAS/GANJA USE (IN %)

Sikkim	73
Nagaland	4.7
Odisha	4.5
AP	4.2
NCT of Delhi	3.8
Mizoram	3.2
HP	3.2
UP	3.2
Haryana	2.9
Manipur	2.8

Ministry of Social Justice and Empowerment, Government of India

Cannabis Use in India



Cannabis in the context of India

- In India, cannabis, also known as bhang, ganja, charas or hashish, is typically eaten (bhanga golis, thandai, pakoras, lassi, etc.) or smoked (chillum or cigarette).
- Ayurvedic texts refer to cannabis as a treatment for several maladies, and it is categorised as Upavisha Varga (sub poisonous), and its recreational use has been described as toxic.
- Odisha is one of the leading cannabis-producing States in India.

Legal Provisions in the context of India

- Bhang, charas and ganja were regulated by the state excise departments and legally sold till 1985.
- In 1985 The Narcotic Drugs and Psychoactive Substances (NDPS) Act has been enacted central level commercial cultivation of cannabis by production, possession, sale/purchase, transportation, interstate import/export or any other forms is punishable. The Act has been amended three times – in 1988, 2001, and most recently in 2014.
- While CBD oil manufacturing is licenced under the Drugs and Cosmetics Act, 1940 can be legally used and sold. Some Indian websites do sell. But to purchase it one needs a prescription and many even facilitate it.
- Similarly, Bhang, ganja and charas are enlisted in the Drugs and Cosmetics Rules, 1945 for use in Ayurveda, Siddha and Unani

Important Provisions under NDPS act

- There are no restrictions on cultivation and procurement of cannabis for medical and scientific purposes.
- The legislature left seeds and leaves of the cannabis plant out of the ambit of the NDPS Act.
- The Act establishes Narcotics Control Bureau as the apex drug law enforcement agency and empowers them to oversee the implementation of NDPS Act and also the other International conventions related to the it..
- For holding a small quantity, the prescribed punishment is rigorous imprisonment for up to six months, fine of Rs. 10,000 or both.
- For holding more than a small quantity but less than the commercial quantity, the prescribed punishment is rigorous imprisonment for up to 10 years, fine of Rs. 1 lakh, or both.
- For holding commercial quantity, the prescribed punishment is rigorous imprisonment for up to 10-20 years, fine of Rs. 1-2 lakh, or both.
- The Act covers three broad classes of substances:
 1. narcotic drugs, that is, those covered under the 1961 UN single Convention on Narcotic drugs;
 - Hashish, resin or charas, ganja, any mixture of charas or ganja is prohibited.
 - Bhang or the cannabis leaf is excluded from the act, but regulated through state excise laws.
 - leaf; derivatives include cocaine and any preparation containing 0.1% of cocaine
 - Opium: Poppy based products, preparations with 0.2% morphine
 2. psychotropic substances or those covered under the 1971 UN Convention on psychotropic substances as well as other psychoactive substances such as ketamine which are not yet classified under international conventions; and
 3. "Controlled substances" that are used to manufacture narcotic drugs or psychotropic substances, for example precursor chemicals such as acetic anhydride, ephedrine and pseudoephedrine.
- 'Manufactured substances' category includes drugs such as Amphetamines, methamphetamines, LSD's

Legalizing Marijuana

Historic significance of Marijuana in India:

- In later Vedic literature Atharva Veda mentions Bhang plant as one of the 5 sacred plants and usage of Bhang since ancient times is common during the Hindu festivals of Holi and Mahashivaratri.
- Indian Hemp Drugs Commission in 1894 recommended against complete ban and found the usage as ancient and religious.
- In 1961, India opposed the inclusion of marijuana in the UN Convention on Narcotic Drugs, citing its role in social and religious customs
- WHO study concluded Marijuana is not as unhealthy compared to alcohol and tobacco products.
- It implies that the harms associated with marijuana use were greatly overestimated and society should respond to its use through progressive public health policies rather than ban.
- Magnitude of substance use in India: This is a survey released by the Ministry of Social Justice and Empowerment in 2019, it states that about 2.8 percent of Indians aged 10–75 years (3.1 crore people) were using cannabis in one form or other.

Burden on Executive and Judiciary:

- Narcotics Control Bureau investigate, interrogate and arrest people with small or miniscule amounts of marijuana and produce them in front of judiciary. It requires huge man power and state exchequer to control small or miniscule amounts of drug usage.

- It leads to wide scope of corruption at lower level of executive which harass people even for petty crimes.
- By legalising it India can release many young people landed in overcrowded jails whose only crime was using marijuana for fun and free up precious police time and go after the big drug mafias.
- International wave of legalization of cannabis, based on its medicinal properties and commercial utilities Ex. Uruguay became the first country to fully legalize marijuana in 2013. Then Canada followed the path. Now many states in USA legalised marijuana.

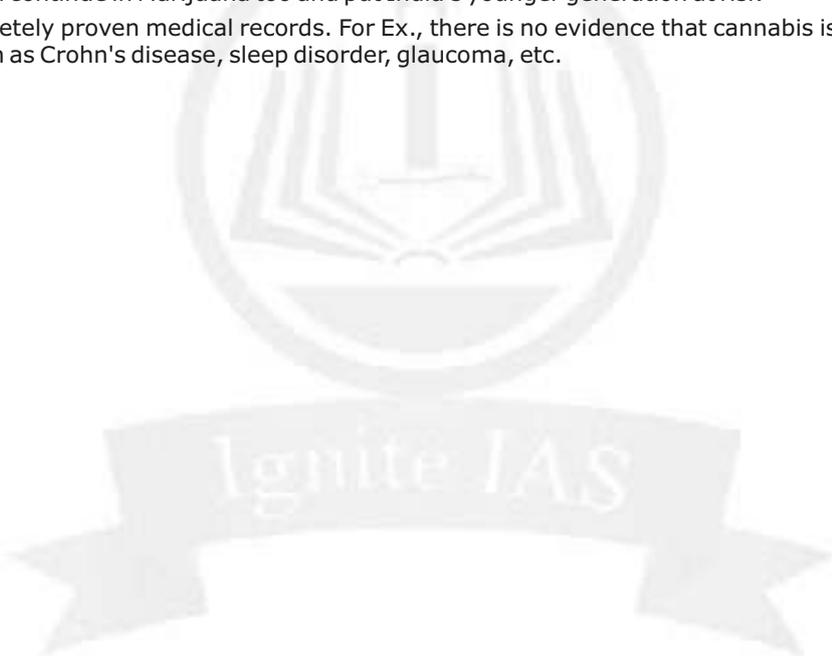
Issues with Legalizing

• **Short- and long-term side effects of Marijuana**

- Short term side effects may include a short-term memory loss, impaired motor skills, dry mouth and feelings of paranoia or anxiety.
- In long term addiction, decreased mental ability and behavioural problems in children (when mothers used marijuana during pregnancy)

• **Marijuana is a gateway drug**

- A private study found more than 40% who used marijuana also used other 'Hard' drugs.
- Against the Directive Principles of Article 47 which specifically calls for the prohibition of intoxicating drinks and drugs that are injurious to health
- Against International Conventions such as 1961 and 1971 UN conventions against Narcotic drugs and Psychotropic substances respectively and also International Opium Convention' (1925).
- Difficulty in regulation: The fallouts of pharmaceutical product divergence into cattle market and drugs without prescription can continue in Marijuana too and put India's younger generation at risk
- Not have completely proven medical records. For Ex., there is no evidence that cannabis is beneficial when used in diseases such as Crohn's disease, sleep disorder, glaucoma, etc.



QRSAM Missile System

Defence & Security

Why in news?

India has successfully test fired the QRSAM technology.

What is this?

- It is basically a missile system and has been developed to replace the 'Akash' missile defence system, with a 360-degree coverage.
- The QRSAM weapon system, which operates on the move, comprises fully automated command and control, active array battery surveillance radar, active array battery multifunction radar and launcher.
- Both the radars are four-walled having 360-degree coverage with search on move and track on move capability.
- It is developed by DRDO and has been tested from the Odisha coast, Chandipur.
- It is expected to be ready for induction by 2021.
- With a strike range of 25-30 kms, it uses solid fuel propellant.
- It is capable of hitting several targets at once.
- It is capable of hitting low flying objects.
- It is predominantly developed for the Indian Army and is in possession of State-of-the-art technology like array radar, radio frequency seeker and so on.



PINAKA Rocket System

Defence & Security

Why in news?

- Recently, the Ministry of Defence (MoD) has announced that its acquisition wing had signed contracts with three Indian companies for supply of six regiments of the Pinaka Rocket System to be deployed along borders with Pakistan and China.

Origin of Pinaka Missile System

- The development of the Pinaka was started by the Defence Research and Development Organisation (DRDO) in the late 1980s.
- It was developed as an alternative to the multi-barrel rocket launching systems of Russian make, called like the 'Grad'.
- After successful tests of Pinaka Mark-1 in the late 1990, it was first used in the battlefield during the Kargil War of 1999.

Features of Pinaka Missile System

- It is an indigenously developed rocket system which is named after Lord Shiva's bow.
- It is primarily a multi-barrel rocket system (MBRL) system, can fire a salvo of 12 rockets over a period of 44 seconds.
- The one battery of Pinaka system consists of six launch vehicles, accompanied by the loader systems, radar and links with network based systems and a command post.
- The Mark-I version of Pinaka has a range of around 40 kilometres and the Mark-II version can fire up to 75 kilometres.



Significance of Pinaka Missile System

- The long range artillery systems like Pinaka are used for attacking the adversary targets prior to the close quarter battles which involve smaller range artillery, armoured elements and the infantry.
- The Mark-II version of the rocket has been modified as a guided missile system by integrating it with the navigation, control and guidance system to improve the end accuracy and increase the range.
- The navigation system of the missile is linked with the Indian Regional Navigation Satellite System.

A-Sat Missile Model

Defence & Security

Why in news?

A model of Anti Satellite (A-SAT) Missile installed inside the DRDO Bhawan premises was unveiled today by Raksha Mantri Rajnath Singh.

ABOUT:

- Anti-satellite weapons (ASAT) are space weapons designed to incapacitate or destroy satellites for strategic military purposes.
- No ASAT system has yet been utilised in warfare, a few nations have shot down their own satellites to demonstrate their ASAT capabilities in a show of force.
- India conducted Mission Shakti, an anti-satellite missile test, from the Dr. A P J Abdul Kalam Island launch complex. This was a technological mission carried out by DRDO.
- The significance of the test is that India has tested and successfully demonstrated its capability to interdict and intercept a satellite in outer space based on complete indigenous technology.
- With this test, the country joins an exclusive group of space faring nations consisting of USA, Russia, and China.
- The test was done in the lower atmosphere to ensure that there is no space debris. Whatever debris that is generated will decay and fall back onto the earth within weeks.
- The test is not directed against any country. India's space capabilities do not threaten any country and nor are they directed against anyone.

Mission Shakti:

- Mission Shakti' was the **country's first-ever Anti-Satellite (ASAT) Missile Test** successfully conducted on 27th March 2019 from Dr AP J Abdul Kalam Island in Odisha.
- Here a fast-moving Indian orbiting target satellite in Low Earth Orbit (LEO) was neutralized with pinpoint accuracy.
- This was a highly complex mission, conducted at extremely high speed with remarkable precision.
- The successful conduct of Mission Shakti made **India the fourth nation in the world with the capability to defend its assets in outer space.**



Scorpene Class Submarine Vagir

Defence & Security

Why in News

Recently, the fifth Scorpene class submarine of Project-75 named 'Vagir' has been launched at Mazagon Dock in Mumbai

Details of the INS VAGIR

- It is named after the Sand Fish, a deadly deep sea predator of the Indian Ocean.
- It is a part of the six Kalvari-class submarines being built in India.
- The state-of-art technology used in the submarine has ensured: Superior stealth features such as advanced acoustic absorption techniques, low radiated noise levels, and hydro-dynamically optimised shape. The ability to attack the enemy using precision guided weapons.



- The submarine is designed to operate in all theatres of operation, showcasing interoperability with other components of a Naval Task Force. It can launch attacks with both torpedoes and tube launched anti-ship missiles, whilst underwater or on surface. It can undertake multifarious types of missions i.e Anti-Surface warfare, Anti-Submarine warfare, Intelligence gathering, Mine Laying, Area Surveillance, etc.

What is project 75?

- It was first cleared in 2007, but lay dormant until now after undergoing numerous changes.
- The P75I project is part of a 30-year submarine building plan that ends in 2030.
- The project cost is about Rs. 45,000 crore.
- As part of this plan, India was to build 24 submarines — 18 conventional submarines and six nuclear-powered submarines (SSNs) — as an effective deterrent against China and Pakistan.
- This project envisages the construction of six conventional submarines with better sensors and weapons and the Air Independent Propulsion System (AIP).
- The project has been cleared under the strategic partnership model.

Status of Submarines in India.

- India's current arsenal consists of 14 conventional submarines and two nuclear-powered submarines. Only half of the conventional submarines are operational including the Scorpene.
- India also has two nuclear-powered submarines namely INS Arihant (a ballistic missile submarine) and INS Chakra leased from Russia.
- India's nuclear submarine arm is based in Visakhapatnam while the diesel electric submarines are primarily based both in Mumbai and Visakhapatnam.

Important military exercises in the news

SIMBEX-20	India and Singapore (Naval Exercise)
SITMEX-20	India and Singapore and Thailand (Naval Exercise)
Sampriti	India & Bangladesh
Mitra Shakti	India & Sri Lanka
Maitree Exercise	India & Thailand
Vajra Prahar	India & US
Yudh Abhyas	India & US
Nomadic Elephant	India & Mongolia
Garuda Shakti	India & Indonesia
Shakti Exercise	India & France
Dharma Guardian	India & Japan
Surya Kiran	India & Nepal
Hand in Hand Exercise	India & China

Tackling Cyber Crimes

Defence & Security

Why in the news?

The Ministry of Home Affairs (MHA) has written to all States to examine and register First Information Reports (FIRs) based on the complaints received on National Cyber crime Reporting Portal (www.cybercrime.gov.in).

National cyber crime reporting portal

- National Cyber Crime Reporting Portal () is a citizen-centric initiative that will enable citizens to report cyber crimes online through the portal.
- All the cyber crime related complaints will be accessed by the concerned law enforcement agencies in the States and Union Territories for taking action as per law.
- This portal was launched on pilot basis on 30th August, 2019 and it enables filing of all cyber crimes with specific

focus on crimes against women, children, particularly child pornography, child sex abuse material, online content pertaining to rapes/gang rapes, etc.

- This portal also focuses on specific crimes like financial crime and social media related crimes like stalking, cyber bullying, etc.
- This portal will improve coordination amongst the law enforcement agencies of different States, districts and police stations for dealing with cyber crimes in a coordinated and effective manner.



Indian cyber crime coordination centre

- The scheme to set up I4C was approved in October 2018 to deal with all types of cybercrimes in a comprehensive and coordinated manner.
- At the initiative of the Union Ministry for Home Affairs (MHA), 15 States and UTs have given their consent to set up Regional Cyber Crime Coordination Centres at respective States/UTs.
- It has seven components:
 1. National Cyber Crime Threat Analytics Unit
 2. National Cyber Crime Reporting Portal
 3. National Cyber Crime Training Centre
 4. National Cyber Crime Research and Innovation Centre
 5. National Cyber Crime Forensic Laboratory Ecosystem
 6. Platform for Joint Cyber Crime Investigation Team
 7. Cyber Crime Ecosystem Management Unit

Fire Detection and Suppression System

Defence & Security

Why in the news?

- The Defence Research and Development Organisation (DRDO) has developed a technology called "Fire Detection and Suppression System (FDSS)" for passenger buses.

What is a fire detection and suppression system?

- FDSS technology can detect fire in buses in less than 30 seconds and extinguish it in 60 seconds thereby reducing the risk to life and property to a significant extent.
- Demonstrations were given on water mist-based FDSS for passenger compartment and aerosol-based FDSS for engine fire.
- DRDO's Centre for Fire Explosive and Environment Safety (CFEES), Delhi has developed the technology.
- The FDSS for passenger compartment comprises a water tank of 80 litre capacity, a 6.8 kg nitrogen cylinder pressurised to 200 bar installed at appropriate location in the bus and a network of tubing with 16 number of atomizers inside the passenger compartment.
- The FDSS for the engine comprises an aerosol generator with which the fire suppression could be achieved within 5 seconds of the system activation.

Why in the news?

- **Context: The Union Education Minister Ramesh Pokriyal 'Nishank' inaugurated the Lilavati Awards. The award is an initiative of All India Council for Technical Education (AICTE).**
- All India Council for Technical Education (AICTE) has established the Lilavati Award.
- The award covers multidisciplinary areas such as women's health, self-defence, sanitation, literacy, entrepreneurship and legal awareness.
- The program will ensure the participation of women and enable them to hold higher positions in educational institutions.
- Recently Union Minister of Education virtually launched Lilavati Award-2020: AICTE's Innovative education program to empower women.
- The objective of the award is to create awareness about issues like sanitation, hygiene, health, nutrition, literacy, employment, technology, credit, marketing, innovation, skill development, natural resources and rights among women.

Lilavati Mathematics Award

- The Lilavati Award is an award for outstanding contribution to public outreach in mathematics.
- The Leelavati prize is not intended to reward mathematical research but rather outreach activities in the broadest possible sense.
- It carries a cash prize of 1,000,000 Indian Rupees together with a citation and is sponsored by Infosys.
- The Leelavati Prize was handed out for the first time at the closing ceremony of the International Congress of Mathematicians (ICM) 2010 in Hyderabad, India.
- The award is named after the 12th-century mathematical treatise "Lilavati" devoted to arithmetic and algebra.

Bhaskara Acharya's Lilavati

- Lilavati is written by the Indian mathematician Bhaskara II, also known as Bhaskara Acharya.
- In the book the author posed, in verse form, a series of problems in (elementary) arithmetic to one Leelavati (perhaps his daughter) and followed them up with hints to solutions.
- This work appears to have been the main source of learning arithmetic and algebra in medieval India.
- The work was also translated into Persian and was influential in West Asia.

Bhaskara II

- Bhaskara (c. 1114–1185) also known as Bhaskaracarya was an Indian mathematician and astronomer, born in Bijapur in Karnataka.
- Bhaskara was the leader of a cosmic observatory at Ujjain, the main mathematical centre of ancient India.
- His main work Siddhanta-Siromani, (Sanskrit for "Crown of Treatises") is divided into four parts which are also sometimes considered four independent works called
 1. **Lilavati – Arithmetic.**
 2. **Bijaganita – Algebra.**
 3. **Grahaganita - Mathematics of the planets**
 4. **Goladhyaya - Mathematics of the Spheres**
- He also wrote another treatise named **Karana Kautuhala**.
- He is particularly known in the discovery of the principles of differential calculus and its application to astronomical problems and computations.
- He was perhaps the first to conceive the differential coefficient and differential calculus.
- In 1981 the ISRO launched the Bhaskara II satellite honouring the mathematician and astronomer.

Bhaskara I

- Bhaskara I (c. 600 – c. 680) was a 7th-century mathematician, who was the first to write numbers in the Hindu decimal system with a circle for the zero.
- He gave a unique and remarkable rational approximation of the sine function in his commentary on Aryabhata's work.
- This commentary, Aryabhatiyabhasya, written in 629 CE, is among the oldest known prose works in Sanskrit on mathematics and astronomy.
- He also wrote two astronomical works in the line of Aryabhata's school, the Mahabhaskariya and the Laghubhaskariya.
- In 1979 the ISRO launched Bhaskara I Satellite honouring the mathematician.

Why in the news?

- **Pilibhit Tiger Reserve (PTR) in Uttar Pradesh has bagged the first international award, TX2, among the 13 tiger range countries for having doubled the number of tigers in less than the stipulated time.**

Conservation Excellence Award for 2020:

- Transboundary Manas Conservation Area straddling the India-Bhutan border has received the TX2 Conservation Excellence Award for 2020.
- Transboundary Manas Conservation Area or TraMCA comprising the 500 sq. km. Manas National Park in Assam and the 1,057-sq. km. Royal Manas National Park in Bhutan.

What is TX2?

- It is the global award which was set up in 2010 in St. Petersburg, Russia by international organizations working for tiger conservation like WWF, UNDP, IUCN, Global Tiger Fund (GTF), CATS and The Lion's Share.

Conservation efforts in India:

- The National Tiger Conservation Authority (NTCA) has launched the M-STrIPES (Monitoring System for Tigers – Intensive Protection and Ecological Status), a mobile monitoring system for forest guards.
- At the Petersburg Tiger Summit in 2010, leaders of 13 tiger range countries resolved to do more for the tiger and embarked on efforts to double its number in the wild, with a popular slogan 'T X 2'.
- The Global Tiger Initiative (GTI) program of the World Bank, using its presence and convening ability, brought global partners together to strengthen the tiger agenda.
- Over the years, the initiative has institutionalised itself as a separate entity in the form of the Global Tiger Initiative Council (GTIC), with its two arms –the Global Tiger Forum and the Global Snow Leopard Ecosystem Protection Program.
- The Project Tiger, launched way back in 1973, has grown to more than 50 reserves amounting to almost 2.2% of the country's geographical area.

Bookers Prize

- The Booker Prize of the year 2020 was won by Douglas Stuart for his debut novel "Shuggie Bain".
- The shortlist of Booker Prize consisted of five more titles such as Burnt Sugar. The Burnt Sugar was published in India as "Girl in White Cotton".
- It also included "The New Wilderness" by Diane Cook, "The Shadow King" by Maaza Mengiste, "This Mournable Body" by Tsitsi Dangarembga, "Real Life" by Brandon Taylor and "The Shadow King" by Maaza Mengiste.
- Apart from these authors, the event also witnessed the participation of former US President Barack Obama. He recently published the first volume of his book "A Promised Land". The book was written by Obama during his tenure as the President of the United States (2009-17).

Details of booker prize

- The Booker Prize is a literary prize awarded annually for the best novel. The prize is awarded to novels written in English and published in Ireland or UK. It was formerly known as "Booker-McConnell Prize" (1969-2001) and Man Booker Prize (2002-2019). In 1997, Arundati Roy of India won the Booker Prize for her Novel "The God of Small Things".
- The Booker Prize carries 50,000 pounds of cash money.
- Douglas Stuart who won the 2020 Booker Prize was the only British author on the US-dominated shortlist. Douglas was born in Glasgow.

Why in the news?

- Assam won four awards in the fisheries sector from the National Fisheries Development Board operating under the Ministry of Fisheries.

Details of the awards.

- Assam received the best state award under the category of best hilly and North Eastern State in Fisheries. Also, the Assam Apex Cooperative Fish Marketing and Processing Federation Limited (FISHED) won first place in the category of hilly and North Eastern Government Organization. The Nagaon district of Assam was selected as the best hilly and North Eastern district category. Amal Medhi, a farmer from Nalbari district of Assam won first place under the category of hilly and North Eastern fish farmer category.

Why in news?

- On November 11, 2020, the Vice President Venkaiah Naidu announced the second National Water Awards. Tamil Nadu won the first place followed by Maharashtra and Rajasthan at second and third places respectively. Key Highlights Mizoram bagged the top most position under the special category.

About National Water Awards:

- The award ceremony has been organised by the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation from 11 & 12 November 2020 through the virtual platform. The NWA awards are given to motivate the individuals/organizations to adopt the best usage practices in the field of water resources conservation and management and create awareness among the people about the importance of water.

