



drishti

Current Affairs (CONSOLIDATION)

APRIL 2021
(PART – II)

Drishti, 641, First Floor, Dr. Mukherjee Nagar, Delhi-110009
Phone: 87501 87501, WhatsApp: 92058 85200, IVR: 8010-440-440
Email: engweb@groupdrishti.com

Contents

Polity and Governance	1
● National Commission for Minorities.....	1
● Section 144 of CrPC	2
● Fifth Session of Codex Committee on Spices and Culinary Herbs	3
● RESPOND Program : ISRO	4
● Mizoram Bru Refugees	5
● Aahaar Kranti Mission	6
● India Restores E-Visa for 156 Countries	6
● EatSmart Cities Challenge and Transport 4 All Challenge	7
● FASTag and Right to Freedom of Movement	8
● Extradition	9
● World Press Freedom Index 2021	10
● Civil Services Day	11
● Subsidy Policy for Urea Produced from Coal Gasification	12
● Disaster Management Act, 2005 Invoked	12
● National Panchayati Raj Day.....	14
● #FOSS4GOV Innovation Challenge	15
● Chandler Good Government Index.....	17
● Agriculture Infrastructure Fund.....	18
● Government of NCT of Delhi (Amendment) Act, 2021.....	18
● Differential Pricing for Covid-19 Vaccines	19
Economic Scenario	21
● Power Grid Infrastructure Investment Trust	21
● Ways and Means Advance	22
● Madhu Kranti Portal & Honey Corners.....	23
● NEFT & RTGS Direct Membership for Payment System Operators	24
● China Not Leaving Hot Springs & Gogra Post	25
● Britain Considering New Digital Currency Bitcoin	26
● Startup India Seed Fund Scheme.....	27
● India's Falling Crude Oil & Natural Gas Production	29
● AIM-PRIME	30
● Microfinance Institutions	31
● Crop Diversification	32
● Oxygen Crisis: Covid-19	33
● Launch of Supply Chain Resilience Initiative	35
● RBI Report on Asset Reconstruction Companies.....	36
● MACS 1407: Variety of Soybean	37
● Corporate Social Responsibility Expenditure	37

International Relations.....39

● India-Japan	39
● UK's Indo-Pacific Tilt.....	40
● Project Dantak	41
● The Armenian Genocide	42
● Kulbhushan Jadhav Case.....	43
● Reassessment of Regional Trading Agreements for India	44
● India in US Currency Practices Monitoring List.....	46
● EU & Indo-Pacific	47
● India-Cuba Relations.....	48
● Chad President Idriss Deby Dies	49
● International Religious Freedom Report 2021	50
● Boao Forum	52
● US Supports India in Covid-Crisis	52
● Post-Brexit Trade Treaty Ratified	53

Science and Technology.....56

● CSF and Sheep Pox Vaccine	56
● Harlequin Ichthyosis: Rare Genetic Disorder.....	57
● Multisystem Inflammatory Syndrome in Children	58
● Monkeydactyl: Pterosaur Species	58
● Initiatives of National Internet Exchange of India	60
● Whitest Ever Paint Reflects 99% of Sunlight	61
● Baikal-GVD Telescope.....	62
● Support Centre for Aditya-L1	63
● NASA's Ingenuity Mars Helicopter	65
● Chimera Research: Human Cells in Monkey Embryos.....	66
● Brucellosis.....	67
● Crew-2 Mission	67
● Reasons for Rising Covid-19 Infections: Second Wave	69
● Ct Value: Covid-19 Test	70
● China's Permanent Space Station.....	70

Environment and Ecology.....72

● Snow Leopard	72
● Earth Day	73
● Sulphur Dioxide Emissions from Caribbean Volcano	73
● Disk-footed Bat.....	74
● Dolphin Population in Odisha.....	75
● Great Indian Bustards	76
● Exotic Animals	77
● National Climate Vulnerability Assessment Report.....	78
● State of the Global Climate 2020:WMO	79
● Protest Against Blue Flag Beaches.....	80
● Climate Change: Impact on Children	81
● Leaders' Summit on Climate.....	83

● Groundwater Depletion and Cropping Intensity	84
● Green Initiatives: Saudi Arabia	85
● The Global Forest Goals Report 2021: UN Report	86
● Assam Earthquake	88

Art & Culture90

● World Heritage Day	90
● Lingaraja Temple	91
● Mahavir Jayanti	92

Social Issues93

● Global Diabetes Compact: WHO.....	93
● World Population Report 2021: UNFPA	94
● Gender Bias and Inclusion in Advertising in India Report: UNICEF.....	95
● World Malaria Day 2021.....	96
● Antimicrobial Resistance: Threat to Global Health Security.....	98
● Immunisation Agenda 2030.....	99

Security101

● Advanced Chaff Technology	101
● Exercise VARUNA 2021.....	101
● Increase in World Military Spending during Covid-19: SIPRI	102
● Joint Logistics Node	104
● Tejas Adds Python-5 Air to Air Missile Capability	104

Miscellaneous106

● Dhruv MK III: Advanced Light Helicopter.....	106
● Global Youth Mobilization Initiative	106

Polity and Governance

Highlights

- National Commission for Minorities
- Section 144 of CrPC
- Fifth Session of Codex Committee on Spices and Culinary Herbs
- RESPOND Program : ISRO
- Mizoram Bru Refugees
- Aahaar Kranti Mission
- India Restores E-Visa for 156 Countries
- EatSmart Cities Challenge and Transport 4 All Challenge
- FASTag and Right to Freedom of Movement
- Extradition
- World Press Freedom Index 2021
- Civil Services Day
- Subsidy Policy for Urea Produced from Coal Gasification
- Disaster Management Act, 2005 Invoked
- National Panchayati Raj Day
- #FOSS4GOV Innovation Challenge
- Chandler Good Government Index
- Agriculture Infrastructure Fund
- Government of NCT of Delhi (Amendment) Act, 2021
- Differential Pricing for Covid-19 Vaccines

National Commission for Minorities

Why in News

Recently, the Delhi High Court has directed the Centre to fill up the vacant posts of chairperson and five other members of the National Commission for Minorities (NCM) by 31st July 2021.

Key Points

➤ Genesis:

- In 1978, setting up of the **Minorities Commission (MC)** was envisaged in the **Ministry of Home Affairs Resolution**.
- In 1984, the **MC** was detached from the Ministry of Home Affairs and placed under the newly created **Ministry of Welfare**, which excluded linguistic minorities from the Commission's jurisdiction in 1988.
- In 1992, with the enactment of the **NCM Act, 1992**, the **MC** became a statutory body and was **renamed as the NCM**.
- In 1993, the first Statutory National Commission was set up and five religious communities viz. **Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis)** were notified as **minority communities**.

- In 2014, Jains were also notified as a **minority community**.

➤ Composition:

- NCM consists of a **Chairperson, a Vice-Chairperson and five members** and all of them shall be from **amongst the minority communities**.
- **Total of 7 persons** to be nominated by the **Central Government** should be from amongst persons of **eminence, ability and integrity**.
- **Tenure:** Each Member holds office for a period of **three years** from the date of assumption of office.

➤ Functions:

- Evaluation of the **progress of the development of minorities** under the Union and States.
- **Monitoring of the working of the safeguards for minorities** provided in the Constitution and in laws enacted by Parliament and the state legislatures.
- Ensures that the **Prime Minister's 15-Point Programme for the Welfare of Minorities** is implemented and the programmes for minority communities are actually functioning.
- **Making recommendations** for the effective implementation of safeguards for the protection of the interests of minorities by the central or state governments.
- **Looking into specific complaints** regarding deprivation of rights and safeguards of minorities

Note:



drishti

and taking up such matters with the appropriate authorities.

- Investigates **matters of communal conflict and riots**.
 - For example, the 2011 Bharatpur communal riots, as well as the 2012 Bodo-Muslim clashes in Assam, were investigated by the commission and their findings were submitted to the government.
- Observes the **Minorities Rights Day** every year on **18th December** which marks the adoption of the "Declaration on the Rights of Persons belonging to National or Ethnic, Religious and Linguistic Minorities" by the **United Nations** in **1992**.

Constitutional and Legal Provisions Related to Minorities

- The **NCM Act** defines a minority as **"a community notified as such by the Central government."**
 - The Government of India has declared **six religions** namely, **Muslims, Christians, Sikhs, Buddhists** and **Parsis** (Zoroastrian) and **Jain** as religious minorities in India.
- **National Commission for Minority Education Institution (NCMEI) Act, 2004:**
 - It gives the minority status to the educational institutions on the basis of six religious communities notified by the government.
- The term **"minority"** is not defined in the Indian Constitution. However, the Constitution **recognises religious and linguistic minorities**.
- **Article 15 and 16:**
 - Prohibition of discrimination against citizens on grounds of religion, race, caste, sex or place of birth.
 - Citizens' right to 'equality of opportunity' in matters relating to employment or appointment to any office under the State, and prohibition in this regard of any discrimination on grounds of religion, race, caste, sex or place of birth.
- **Article 25 (1), 26 and 28:**
 - People's freedom of conscience and right to freely profess, practise and propagate religion.
 - Right of every religious denomination or any section to establish and maintain institutions for religious and charitable purposes, manage its own religious affairs, and own and acquire property and administer it.

- People's freedom as to attendance at religious instruction or religious worship in educational institutions wholly maintained, recognized, or aided by the State.

➤ Article 29:

- It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
- It **grants protection to both religious minorities as well as linguistic minorities**.
- However, the **Supreme Court** held that the scope of this article is not necessarily restricted to minorities only, as use of the word 'section of citizens' in the Article includes minorities as well as the majority.

➤ Article 30:

- All minorities shall have the **right to establish and administer educational institutions** of their choice.
- The protection under Article 30 is **confined only to minorities** (religious or linguistic) and does not extend to any section of citizens (as under Article 29).

➤ Article 350-B:

- The **7th Constitutional (Amendment) Act 1956** inserted this article which provides for a Special Officer for Linguistic Minorities appointed by the President of India.
- It would be the duty of the Special Officer to investigate all matters relating to the safeguards provided for linguistic minorities under the Constitution.

Section 144 of CrPC

Why in News

Section 144 of the Code of Criminal Procedure (CrPC) of 1973 has been **imposed in Gurugram**, owing to the rising number of **Covid-19** cases.

Section 144 has often been **used to clamp down on telecommunication services and order Internet shutdowns**.

Key Points

Note:

➤ **About Section 144 CrPC:**

- This law empowers the **magistrate of any state or union territory** in India to pass an order **prohibiting the gathering of four or more people in a specified area**.
- It is **imposed in urgent cases of nuisance or apprehended danger of some event** that has the potential to cause trouble or damage to human life or property.
- This order can be passed **against a particular individual or general public**.

➤ **Features of Section 144:**

- It places **restrictions on handling or transporting any kind of weapon** in the given jurisdiction. The **maximum punishment** for such an act is **three years**.
- According to the order under this section, there shall be **no movement of public** and **all educational institutions** shall also **remain closed**.
- Further, there will be a **complete bar on holding any kind of public meetings or rallies** during the period of operation of this order.
- It is **deemed a punishable offence to obstruct law enforcement agencies** from disbanding an unlawful assembly.
- It **also empowers the authorities to block internet access in the region**.
- The ultimate purpose of Section 144 is **to maintain peace and order** in the areas where trouble could erupt to disrupt the regular life.

➤ **Duration of Section 144 Order:**

- No order under this section can remain in force for a **period of more than 2 months**.
- Under the state government's discretion, it can choose to **extend the validity for two more months with the maximum validity extendable to six months**.
- Once the situation becomes normal, Section 144 levied can be withdrawn.

➤ **Difference between Section 144 and Curfew:**

- **Section 144 prohibits gathering of four or more people** in the concerned area, while **during curfew people are instructed to stay indoors** for a particular period of time. The government **puts a complete restriction on traffic as well**.
- Markets, schools, colleges and offices remain closed under the curfew and only essential services are allowed to run on prior notice.

➤ **Criticism of the Section:**

- The criticism is that it is **too broad and the words of the section are wide enough** to give **absolute power to a magistrate** that may be exercised unjustifiably.
- The **immediate remedy** against such an order is **a revision application to the magistrate himself**.
- An aggrieved individual **can approach the High Court** by filing a **writ petition** if his fundamental rights are at stake. However, fears exist that before the High Court intervenes, the **rights could already have been infringed**.

➤ **Court's Ruling on Section 144:**

- **Dr Ram Manohar Lohiya case 1967**, the Supreme Court held that "no democracy can exist if 'public order' is freely allowed to be disturbed by a section of the citizens".
- The Supreme court in another recent judgement said that the **section cannot be used to impose restrictions on citizens' fundamental right to assemble peacefully**, cannot be invoked as a 'tool' to 'prevent the legitimate expression of opinion or grievance or exercise of any democratic rights'.

Fifth Session of Codex Committee on Spices and Culinary Herbs

Why in News

Recently, the **Food Safety and Standards Authority of India (FSSAI)** inaugurated the **fifth session of the Codex Committee on Spices and Culinary Herbs (CCSCH)** established under **Codex Alimentarius Commission (CAC)**.

Key Points

➤ **About the Codex Committee on Spices and Culinary Herbs (CCSCH):**

- **Establishment:** It was formed in **2013**.
- **Terms of Reference:**
 - To **elaborate worldwide standards for spices and culinary herbs** in their dried and dehydrated state in whole, ground, and cracked or crushed form.
 - To **consult, as necessary, with other international organizations** in the standards development process to avoid duplication.

Note:

- **Host:**
 - **India is the host country** and **Spices Board India** is the **Secretariat** for organising the **sessions of the committee**.
 - **Spices Board (Ministry of Commerce and Industry)** is the flagship organization for the development and worldwide promotion of Indian spices.
- **About the Codex Alimentarius Commission (CAC):**
 - **About:**
 - It is an **intergovernmental body** established jointly by the **UN's Food and Agriculture Organisation (FAO)** and the **World Health Organisation (WHO)** in **1963**, within the framework of the **Joint Food Standards Programme**.
 - The **Secretariat of the CAC** is hosted at **FAO headquarters in Rome**.
 - It was **established to protect the health of consumers** and ensure fair practices in the food trade.
 - It **meets in regular session once a year** alternating between Geneva and Rome.
 - **Members:**
 - Currently, it has **189 Codex Members** made up of 188 Member Countries and 1 Member Organization (**The European Union**).
 - **India is a member**.
 - **Food Standards:**
 - The **Codex Alimentarius is a collection of international food standards** that have been adopted by the CAC.
 - Codex Standards **cover all the main foods**, whether processed, semi-processed or raw.
 - In addition, materials used in the further processing of food products are included to the extent necessary for achieving the principal objectives of the code.
 - Codex provisions **concern the hygienic and nutritional quality of food**, including microbiological norms, food additives, pesticide and **veterinary drug residues, contaminants, labelling and presentation**, and methods of sampling and risk analysis.
- **About Food Safety and Standards Authority of India (FSSAI):**

- **Establishment:**
 - **FSSAI** is an autonomous **statutory body** established under the **Food Safety and Standards Act, 2006 (FSS Act)**.
 - It is **headquartered in Delhi**.
- **Administrative Ministry:**
 - Ministry of Health & Family Welfare.
- **Functions:**
 - **Framing of regulations** to lay down the standards and guidelines of **food safety**.
 - **Granting FSSAI food safety license** and certification for food businesses.
 - **Laying down procedure** and guidelines for laboratories in **food businesses**.
 - **To provide suggestions** to the government in framing the policies.
 - **To collect data** regarding contaminants in foods products, identification of emerging risks and introduction of a **rapid alert system**.
 - **Creating an information** network across the country about food safety.
 - **Promote general awareness** about food safety and food standards.

RESPOND Program : ISRO

Why in News

Recently, **Indian Space Research Organisation (ISRO)** has announced that it will support eight joint research projects mooted by the **Space Technology Cell (STC)**, **IIT-Delhi**.

- The ISRO has extended support to the projects under its **RESPOND programme**.

Key Points

- **ISRO started the RESPOND (Research Sponsored) programme in the 1970s**, with the objective of **encouraging academia to participate and contribute in various Space related research activities**.
- Under the Programme, **ISRO provides financial support** for conducting research and development activities related to **Space Science, Space Technology and Space Applications** in Academic Institutions in India.
- This is the **flagship programme of ISRO to promote extramural research** in emerging areas of Space at Academia.

Note:

- It looks to **enhance the Academic base, generate human resources and infrastructure** at the Academic Institutions to **support the Space Programmes**.
- India is on course to launch its first human spaceflight mission, **Gaganyaan**, where Indian astronauts will spend time to conduct space experiments. This ambitious mission will help the country prepare for future deep-space missions.
- RESPOND is also participating in the National Missions like **IMPRINT (IMPacting Research INnovation and Technology)** programme and **Uchhatar Avishkar Yojana (UAY)**.

IMPRINT Programme

- The scheme was **released in 2015** by the Ministry of Human Resource Development (now Ministry of Education).
- It is a **first-of-its-kind Pan-IIT and IISc joint initiative** to address the major science and engineering challenges that India must address and champion to enable, empower and embolden the nation for inclusive growth and self-reliance.
- IMPRINT provides the overarching vision that **guides research into areas that are predominantly socially relevant**.

Uchhatar Avishkar Yojana

- It was launched by the Ministry of Human Resource Development in 2015.
- It **promotes innovation of a higher order that directly impacts the needs of the Industry** and thereby improves the competitive edge of Indian manufacturing.

Mizoram Bru Refugees

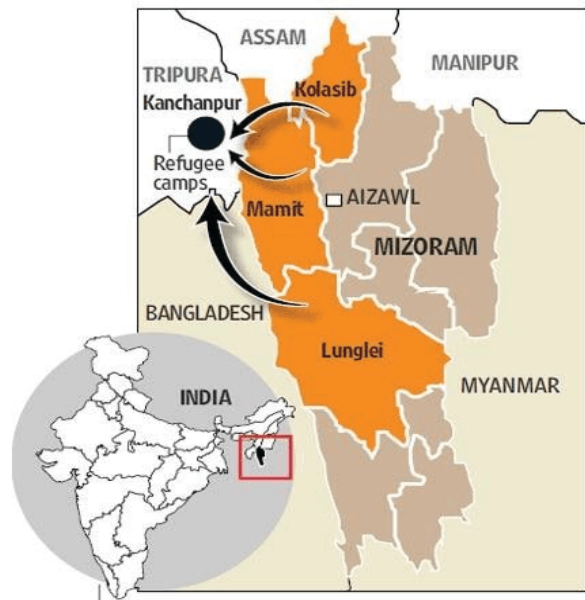
Why in News

The **process of settlement of Mizoram Bru refugees in Tripura** has started.

- It is **in accordance with a quadripartite accord** signed in New Delhi in **January 2020**.

Key Points

- **Background:**
 - **Bru or Reang** is a community indigenous to **Northeast India**, living mostly in **Tripura, Mizoram and Assam**. In Tripura, they are recognised as a **Particularly Vulnerable Tribal Group**.



- In **Mizoram**, they have been targeted by groups that do not consider them indigenous to the state.
 - In 1997, following ethnic clashes, **nearly 37,000 Brus** fled Mamit, Kolasib and Lunglei districts of Mizoram and were accommodated in relief camps in Tripura.
- Since then, **5,000** have returned to Mizoram in eight phases of repatriation, while **32,000** still live in six relief camps in North Tripura.
 - In **June 2018**, community leaders from the Bru camps signed an agreement with the Centre and the two state governments, **providing for repatriation in Mizoram**. But most camp residents rejected the terms of the agreement.
 - The camp residents said that the **agreement didn't guarantee their safety in Mizoram**.
- **Quadripartite Accord:**
 - The **Centre**, the governments of **Mizoram and Tripura** and **leaders of Bru organisations** signed a **quadripartite agreement** in January (2020).
 - Under the pact, the **Home Ministry** has committed to incur the whole expenditure of **settlement in Tripura**.
 - A package was assured in the accord that each refugee family would get:
 - A plot, fixed deposit of Rs. 4 lakh, free ration and a monthly stipend of Rs. 5,000 for two years.
 - In addition, each family will also be provided Rs. 1.5 lakh to construct a house.

Note:

Aahaar Kranti Mission

Why in News

The Government has launched 'Aahaar Kranti', a mission dedicated to spread awareness about nutrition.

Key Points

- **About:**
 - The initiative 'Aahaar Kranti' will focus on **addressing the problem of hunger and diseases in abundance** across India and the world.
 - The initiative will shine a light on the **richness and value of India's traditional diet**, the miracles of **local fruits and vegetables**, and the healing powers of a **balanced diet**.
 - **Organisations Involved:** Pravasi Bharatiya Academic and Scientific Sampark (PRABHASS), Global Indian Scientists and Technocrats' Forum (GIST), **Vijnana Bharati (Vibha)** and Vigyan Prasar (an autonomous body of the Department of Science and Technology) have come together to launch the mission 'Aahaar Kranti'.
 - The **motto** of the Mission is "**Uttam Aahaar- Uttam Vichaar or Good Diet-Good Cognition**".
- **Implementation Strategy:**
 - The messages **will be imparted through the curriculum** in the form of 'what's and 'why's of nutrition, or through the forms of games or as instructions such as 'how to'.
 - The content will be provided both online and offline, in all vernacular languages besides English and Hindi.
 - The programme **will focus on training teachers**, who, in turn, will pass on the message to the multitudes of students, and through them to their families and finally the society at large.
- **Significance:**
 - The United Nations (UN) has also declared **2021 as the International Year of Fruits and Vegetables**, which vibes very well with Aahaar Kranti.
 - Further, it is in line with the **UN sustainable goal 3** that emphasizes human well-being.
 - It will **help in applying the rich knowledge of Ayurveda-based nutrition** to practice.

Performance of India on Global Hunger Index 2020

- India has been **ranked at 94** among 107 countries in the **Global Hunger Index (GHI) 2020**.
 - With a score of 27.2, India has a level of hunger that is **"serious"**.
- **Performance on the Indicators:**
 - **Undernourishment:** 14% of India's population is undernourished (2017-19). It was 16.3% during 2011-13.
 - **Child Wasting:** 17.3% (2015-19), it was 15.1% in 2010-14.
 - **Child Stunting:** 34.7%, it has improved significantly, from 54% in 2000 to less than 35% now.
 - **Child Mortality:** 3.7%, it was 5.2% in 2012.

India Restores E-Visa for 156 Countries

Why in News

The **Ministry of Home Affairs (MHA)** has restored the **electronic visa (e-visa)** facility for **foreigners** from **156 countries**, who intend to visit India for the purposes of **business, conferences, and for medical reasons**, including in the case of medical attendants.

- **E-visa for tourists is yet to be restored.**

Key Points

- **E-Visa:**
 - **Launch:** The e-visa system is an innovation **introduced by the government in 2014**. The facility was expanded in 2017-2018.
 - The process has its **roots in the 2010 Tourist Visa on Arrival (TVOA) scheme** for Japan, Singapore, Finland, Luxembourg and New Zealand.
 - The government **merged the TVOA with Electronic Travel Authorisation**, thereby creating the e-visa.
 - **Five Categories:** An e-visa also called **Electronic Visa** is provided in five categories — **tourist, business, conference, medical, and medical attendant**.
 - **Process:**
 - Under the arrangement, a foreigner can apply online four days prior to travel.

Note:

- After the details are verified, an **electronic travel authorisation (ETA)** is generated, which has to be presented at the immigration check post on arrival.
- Entry through e-visas is **allowed only at 28 designated international airports and 5 major seaports in India.**
- **Nodal Ministry:** The **Ministry of Home Affairs** is the nodal ministry that issues visas to foreigners.
- The facility is **not available for the citizens of Pakistan** and they are expected to apply for regular visas from the Indian High Commission in Islamabad.
- E-visas are **not valid for foreign diplomats** which are dealt separately.
- **Current Status:**
 - Though the **facility is available to 171 countries**, after restrictions were announced in 2020, it has been **restored only for 156 countries.**
 - China, the UK, Canada, Hong Kong, Indonesia, Iran, Malaysia and Saudi Arabia are **excluded** from the current restoration.

EatSmart Cities Challenge and Transport 4 All Challenge

Why in News

Recently, the Ministry of Housing and Urban Affairs launched the **EatSmart Cities Challenge** and **Transport 4 All Challenge**.

- The challenges aim at creating an **environment of right food practices and habits** and to make **public transport safe, affordable, comfortable, and reliable.**

Key Points

- **EatSmart Cities Challenge:**
 - **About:**
 - The EatSmart Cities Challenge is envisioned as a competition among cities to recognize their efforts in adopting and scaling up various initiatives under **Eat Right India.**
 - The challenge is open to all **Smart Cities**, capital cities of States /UTs, and cities with a population of more than 5 lakh.
 - **Objective:**

- It aims to motivate Smart Cities to develop a plan that supports a healthy, safe and sustainable food environment supported by institutional, physical, social, and economic infrastructure along with the application of 'smart' solutions to combat food related issues.
- **Significance:**
 - The challenge has a potential to create social and behavioural change towards food safety, hygiene and nutrition.
- **Other Related initiatives:**
 - **Limit TFA:** Recently, the **Food Safety and Standards Authority of India (FSSAI)** has capped the amount of trans fatty acids (TFA) in oils and fats to 3% for 2021 and 2% by 2022 from the current permissible limit of 5% through an amendment to the Food Safety and Standards (Prohibition and Restriction on Sales) Regulations 2011.
 - **'Raman 1.0'** : A new-age, hand-held battery operated device to perform rapid detection (in less than 1 minute) of economically driven adulteration in edible oils, fats and ghee.
 - **Food Safety Magic Box:** This do-it-yourself food testing kit comprises a manual and equipment to check for food adulterants, which school children can use in their classroom laboratories.
 - **Food Safety Mitra scheme:** It aims to support **small and medium-scale food businesses** so as to comply with the **food safety laws** and will facilitate them with the licensing and registration process, hygiene ratings and training programme.
 - **Eat Right Mela:** It is an outreach activity for citizens to nudge them towards eating right. It is organised to make citizens aware of the health and nutrition benefits of different types of food.
- **Transport 4 All Challenge:**
 - **About:**
 - The initiative has been launched in collaboration with **The Institute for Transportation and Development Policy (ITDP)** and aims to bring together cities, citizen groups, and start-ups to develop solutions that improve public transport.
 - ITDP is a non-governmental non-profit organization that focuses on developing bus rapid transit systems, promoting biking, walking, and non-motorized transport, and improving private bus operators margins.

Note:

○ **Objective:**

- The Transport 4 All Digital Innovation Challenge Aims to develop digital solutions that will make public transport safe, affordable, comfortable, and reliable for all.

○ **Significance**

- COVID-19 has brought the entire world to a halt with transport being one of the worst-hit sectors. Transport 4 All Digital Innovation Challenge has the potential to support cities to recover from this mobility crisis.
- It will support the cities and start-ups all over the country to move towards digital transformation in urban mobility.

➤ **Initiatives to Address Urban Transport Issues:**

- **National Electric Mobility Mission Plan (NEMMP):** The plan aims to achieve national fuel security by promoting hybrid and electric vehicles in the country
- **Faster Adoption and Manufacturing of (Hybrid &) Electric vehicles in India (FAME India):** This scheme supports hybrid/electric vehicles market development and manufacturing ecosystem.
- **Mass Rapid Transit/ Transport Systems (MRTS):** In 2017, the government introduced the new Metro Policy which aims to improve collaborations, standardising norms, financing and creating a procurement mechanism so that the projects can be implemented effectively.
- **Personal Rapid Transit System (PRT):** It is a transport mode combining small automated vehicles, known as pods, operating on a network of specially built guideways.
- **Green Urban Mobility Initiative:** The Indian government launched the Green Urban Mobility Initiative (GUMI) to boost green and sustainable alternatives under the Smart Cities Mission.

FASTag and Right to Freedom of Movement

Why in News

Recently, the Union government told the Bombay High Court that making **FASTag** mandatory for all vehicles does not breach a citizen's **fundamental right to freedom of movement** in any way.

- A **Public Interest Litigation** was filed in the Court challenging the government's decision to make FASTag, the electronic toll collection chip, mandatory for all vehicles at toll plazas on national highways.

Key Points

➤ **About FASTag:**

- The FASTag is a **reloadable tag** that allows **automatic deduction of toll** without having to stop for carrying out the cash transaction.
- The tag **uses Radio Frequency Identification (RFID) technology** and is fixed on the windscreen of the vehicle once active.
 - **RFID** is the **use of radio waves** to read and capture information stored on a tag attached to an object.
 - A tag can be read from up to several feet away and does not need to be within the direct line-of-sight of the reader to be tracked.

➤ **Government's Response:**

- FASTag ensures seamless traffic movement, cut travel time short, and that all decisions had been taken in accordance with the **Central Motor Vehicles (CMV) Rules**.
 - **Section 136A of Motor Vehicles Amendment Act 2019** puts the responsibility on the Central Government to make rules for the electronic monitoring and enforcement of road safety.
 - Legislating the establishment of robust electronic enforcement for traffic violations will result in reduction in human intervention and the associated corruption.
 - A robust electronic enforcement system including speed cameras, closed-circuit television cameras, speed guns and such other technology will ensure violations being captured at a greater scale.
- **Provisions** had been made at all toll plazas along national highways to fit the chip **in vehicles** that did not have FASTag.
 - In cases where it was not possible to fit vehicles with FASTag on the spot for any reason, the vehicle was permitted to still ply on highways, on extreme left of the FASTag lanes.
 - However, such vehicles were required to pay twice the toll amount.

Note:



drishti

- The double user fees or penalties imposed on vehicles without FASTag on national highways were also in accordance with the National Highway Fee (determination of rates and collection) Rules, 2008.
- Entertaining such petitions would cause “irreparable loss” to the **National Highways Authority of India**.

Right to Freedom of Movement

- Right to Freedom of movement is **guaranteed under Article 19 of the Indian Constitution**. It entitles every citizen to move freely throughout the territory of the country.
- This right is **protected against only state action and not private individuals**. Moreover, it is available only to the citizens and to shareholders of a company but **not to foreigners or legal persons** like companies or corporations, etc.
- **Restrictions** on this freedom can only be imposed on **two grounds** which are mentioned in the Article 19 of the constitution itself, namely, the interests of the general public and the protection of interests of any scheduled tribe.
 - The entry of outsiders in tribal areas is restricted to protect the distinctive culture, language, customs and manners of scheduled tribes and to safeguard their traditional vocation and properties against exploitation.
- The Supreme Court held that the freedom of movement of prostitutes can be restricted on the ground of public health and in the interest of public morals.
- The freedom of movement has **two dimensions**, viz, internal (right to move inside the country) and external (right to move out of the country and right to come back to the country).
 - Article 19 protects only the first dimension. The **second dimension is dealt by Article 21** (right to life and personal liberty).

Extradition

Why in News

Recently, the UK's Home Department has approved the **extradition of Nirav Modi, a diamond merchant** to India in connection with the Rs. 13,758-crore Punjab National Bank (PNB) fraud.

- India and the UK entered into an **extradition treaty in 1992**.

Key Points

➤ About:

- Extradition is the process by which one state, upon the request of another, affects the **return of a person for trial for a crime** punishable by the laws of the requesting state and committed outside the state of refuge.
- The **Supreme Court** defined extradition as the **delivery on the part of one State to another of those whom it is desired to deal with for crimes of which they have been accused** or convicted and are justifiable in the Courts of the other State.
- Extraditable persons include those charged with a crime but not yet tried, those tried and convicted who have escaped custody, and those convicted in absentia.

➤ Extradition Law in India:

- In India, the extradition of a fugitive criminal is governed under the **Indian Extradition Act, 1962**.
 - This is **for both extraditing persons to India and from India** to foreign countries.
 - The **basis of the extradition** could be a treaty between India and another country.
 - At present India has an **Extradition treaty** with more than 40 countries and Extradition agreement with 11 countries.

➤ Extradition Treaty:

○ About:

- **Section 2(d)** of The Indian Extradition Act 1962 defines an ‘Extradition Treaty’ as a Treaty, **Agreement or Arrangement made by India with a Foreign State, relating to the extradition of fugitive criminals** which extends to and is binding on India. Extradition treaties are traditionally bilateral in character.

○ Principles Followed:

- The extradition **applies only to such offences which are mentioned in the treaty**.
- It applies the **principle of dual criminality** which means that the offence sought to be an offence in the national laws of requesting as well as requested country.

Note:



drashti

- The requested country must be satisfied that there is a **prima facie case made against the offender**.
- The extradition should be made **only for the offence for which extradition was requested**.
- The accused must be provided with a **fair trial**.

➤ **Nodal Authority:**

- **Consular, Passport and Visa Division** of the Ministry of External Affairs, administers the Extradition Act and it processes incoming and outgoing Extradition Requests.

➤ **Implementation:**

- Extradition **can be initiated in the case of under-investigation, under-trial and convicted criminals**.
- In cases under investigation, abundant precautions have to be exercised by the law enforcement agency to ensure that it is in possession of prima facie evidence to sustain the allegation before the Courts of Law in the Foreign State.

World Press Freedom Index 2021

Why in News

India has ranked **142nd** yet again out of 180 nations in the recently unveiled **World Press Freedom Index**.

- The index is **published each year** by the international journalism not-for-profit body, **Reporters Without Borders (RSF)**.

Key Points

➤ **About the World Press Freedom Index:**

- It has been published every year since 2002 by **Reporters Sans Frontieres (RSF)** or Reporters Without Borders.
- Based in Paris, RSF is an independent NGO with consultative status with the **United Nations, UNESCO, the Council of Europe and the International Organization of the Francophonie (OIF)**.
 - OIF is a 54 french speaking nations collective.
- The Index **ranks countries and regions according to the level of freedom available to journalists**. However it is **not an indicator on the quality of journalism**.
- The **parameters include** pluralism, media independence, media environment and self-censorship,

legislative framework, transparency, and the quality of the infrastructure that supports the production of news and information.

➤ **Global Scenario:**

- **Journalism**, the main vaccine against disinformation, is **completely or partly blocked in 73% of the 180 countries**.
- **Only 12 of the Index's 180 countries (7%)** can claim to **offer a favourable environment for journalism**.
- **Covid-19 pandemic** has been used to perfection by nations to control the spread of information.
- The Report has **raised concern about the larger Asia-Pacific region** as several nations in an attempt to curb freedom of press have in place **draconian laws on 'sedition,' 'state secrets' and 'national security'**.
- **Norway has topped** yet again for the fifth year in the row, **followed by Finland and Denmark**.
- **Eritrea is at the bottom** meanwhile **China is ranked 177**, and is only above North Korea at 179 and Turkmenistan at 178.

➤ **India's Performance Analysis:**

- India **was ranked 142 in the year 2020 as well**, thus showing no improvement in the environment it provides to its journalists.
- India **has fared poorly amongst its neighbours** with Nepal at 106, Sri Lanka at 127 and Bhutan at 65. Pakistan is a close follower at 145th spot.
- India is **among the countries classified "bad" for journalism** and is termed as one of the most dangerous countries for journalists trying to do their jobs properly.
- The report has blamed **an environment of intimidation created by the nationalist government for any critical journalist** often brandishing them as anti state or anti national.
 - The **situation is worrying in Kashmir**, where incidents of harassment of reporters by police and paramilitaries have surfaced.

➤ **Reasons Behind India's Poor Performance:**

- Journalists are exposed to every kind of attack, including police violence against reporters, ambushes by political activists, and reprisals instigated by criminal groups or corrupt local officials.
- The journalists have often been subjected to coordinated hate campaigns on social networks.

Note:



drishti

Freedom of Press

- The Constitution, the supreme law of the land, guarantees **freedom of speech and expression under Article 19**, which deals with 'Protection of certain rights regarding freedom of speech, etc.
- Freedom of press is not expressly protected by Indian legal system but it is **impliedly protected under article 19(1) (a) of the constitution**, which states - "All citizens shall have the right to freedom of speech and expression".
- In 1950, the Supreme Court in **Romesh Thappar v. State of Madras** observed that freedom of the press lay at the foundation of all democratic organisations.
- However, Freedom of press is also **not absolute**. It faces certain restrictions under Article 19(2), which are as follows-
 - Matters related to interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.

- Such campaigns are particularly violent when the targets are women.

Civil Services Day

Why in News

Every year, **21st April** is celebrated as the **Civil Services Day** by the Government of India.

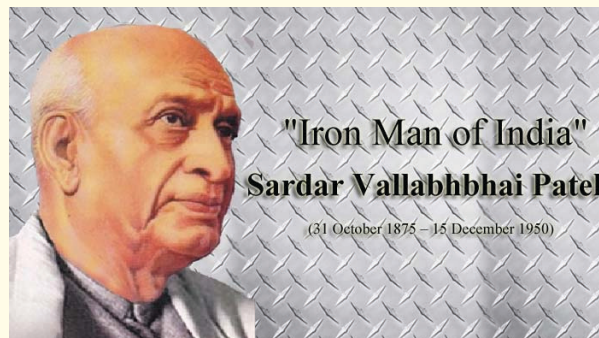
Key Points

- **About:**
 - It is celebrated as an **occasion for the civil servants** to rededicate themselves to the causes of citizens and renew their commitments to public service and excellence in work.
 - The date is chosen to **commemorate the day when the first Home Minister** of Independent India, **Sardar Vallabhbhai Patel** addressed the **probationers of Administrative Services Officers in 1947** at Metcalf House, Delhi.
 - He referred to civil servants as the '**Steel Frame of India**'.
- **Civil Services Day Function:**

- The **first function on civil services day** was held in Vigyan Bhawan, New Delhi in **2006**.
- On this day, the **Prime Minister's Awards for Excellence in Public Administration** are presented to Districts/Implementing Units for implementation of Priority programme and innovation categories.

Sardar Vallabhbhai Patel

- He was **born on 31st October, 1875** in Nadiad, Gujarat.
 - **National Unity Day** is celebrated every year to **commemorate the birth anniversary of Sardar Vallabhbhai Patel**.



- He was the **first Home Minister and Deputy Prime Minister** of independent India.
- He played an important role in the **integration of many Indian princely states** to make an Indian federation.
- Women of Bardoli bestowed the title '**Sardar**' on Vallabhbhai Patel, which means '**a Chief or a Leader**'.
- He is recognized as the **real unifier of India** for his colossal contribution to integrate and make India a united (Ek Bharat) and an independent nation.
- He requested the people of India to live together by uniting in order to create **Shreshth Bharat (Foremost India)**.
 - **Ek Bharat Shreshtha Bharat** was announced by the Prime Minister in 2015 on the occasion of the **140th birth anniversary of Sardar Vallabhbhai Patel**.
- He is also remembered as the '**Patron saint of India's civil servants**' as he established the modern all-India services system.
- The **Statue of Unity** at Kevadiya in Narmada district of Gujarat was built in his honour.

Note:

Subsidy Policy for Urea Produced from Coal Gasification

Why in News

The Cabinet has approved an exclusive subsidy policy for urea produced through coal gasification by Talcher Fertilizers Limited (TFL).

- Urea is a widely used fertiliser in India.

Key Points

- **About the TFL Urea Project:**
 - **Capacity and Location:** TFL is setting up the 1.27 million tonne per annum capacity urea plant based on coal gasification technology in Odisha with an estimated investment of Rs. 13,277 crore.
 - This will be the only plant to produce the nitrogenous soil nutrient (urea) through coal gasification route.
 - Talcher Fertilizers Ltd. (TFL) is a Joint Venture Company of four PSUs (Public Sector Undertakings) namely Rashtriya Chemicals & Fertilizers (RCF), GAIL (India) Ltd. (GAIL), Coal India Ltd. (CIL) and Fertilizer Corporation of India Ltd. (FCIL).
 - **Expected Benefits:**
 - The project will improve availability of fertilizer to farmers thereby boosting development of eastern region and will save transport subsidy for supply of urea in eastern part of the country.
 - It would assist in reducing Urea imports to the tune of 12.7 LMT (Lakh Metric Tonnes) per annum leading to savings in foreign exchange.
 - It will also give a boost to the 'Make in India' initiative and 'Atmanirbhar Bharat' campaign and would help development of infrastructure like roads, railways etc.
 - It will also provide new business opportunities in the form of ancillary industries in the catchment area of the project.
- **Coal Gasification:**
 - Coal gasification is the process of converting coal into synthesis gas (also called syngas), which is a mixture of hydrogen (H_2), carbon monoxide (CO) and carbon dioxide (CO_2).
 - The syngas can be used in a variety of applications such as in the production of electricity and making chemical products, such as fertilisers.

- The hydrogen obtained from coal gasification can be used for various purposes such as making ammonia, powering a hydrogen economy.
- The ammonia is reacted with the carbon dioxide to produce urea melt.
- **In-situ gasification of coal** – or **Underground Coal Gasification (UCG)** – is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.
- India has set the target that by 2030 it will gasify 100 million tonne of coal under four major projects with an overall investment of Rs. 20,000 crore.

Fertilizer Consumption in India:

- India's fertiliser consumption in FY20 was about 61 million tonne — of which 55% was urea — and is estimated to have increased by 5 million tonne in FY21.
 - Since non-urea (MoP, DAP, complex) varieties cost higher, many farmers prefer to use more urea than actually needed.
 - The government has taken a number of measures to reduce urea consumption. It introduced neem-coated urea to reduce illegal diversion of urea for non-agricultural uses. It also stepped up the promotion of organic and zero-budget farming.
- **Subsidy on Urea:** The Centre pays subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant and the units are required to sell the fertiliser at the government-set Maximum Retail Price (MRP).
- **Subsidy on Non-Urea Fertilisers:** The MRPs of non-urea fertilisers are decontrolled or fixed by the companies. The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels".
 - Examples of non-urea fertilisers: Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP)

Disaster Management Act, 2005 Invoked

Why in News

Recently, the Ministry of Home Affairs invoked Disaster Management Act, 2005 (DM Act) and ordered free inter-state movement of oxygen carrying vehicles.

Note:



drishti

- Earlier in **March 2020** various government authorities **invoked** their respective powers under the DM Act to deal with the novel **coronavirus (Covid-19)** outbreak in the country.

Key Points

- **About:**
 - The DM Act was **passed by the government of India in 2005** for the 'efficient **management of disasters** and other matters connected to it. However it **came into force in January 2006**.
- **Objective:**
 - To **manage disasters, including preparation of mitigation strategies, capacity-building** and more.
 - Definition of a "disaster" in **Section 2 (d)** of the DM Act states that a **disaster means a "catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes.**
- **Major Features of The Act:**
 - **Nodal Agency:**
 - The Act designates the **Ministry of Home Affairs** as the nodal ministry for steering the overall national disaster management.
 - **Institutional Structure:** It puts into place a systematic structure of institutions at the national, state and district levels.
 - **National Level Important Entities:**
 - **The National Disaster Management Authority (NDMA):**
 1. It is tasked with **laying down disaster management policies and ensuring timely and effective response** mechanisms.
 - **The National Executive Committee (NEC):**
 1. It is constituted under **Section 8 of the DM Act** to assist the National Disaster Management Authority in the performance of its functions.
 2. The NEC is **responsible for the preparation of the National Disaster Management Plan** for the whole country and to ensure that it is "reviewed and updated annually.
 - **The National Institute of Disaster Management (NIDM):**
 1. It is an **institute for training and capacity development programs** for managing natural calamities.

■ National Disaster Response Force (NDRF):

1. It refers to **trained professional units** that are called upon for specialized response to disasters
- **State and District level:**
 - The Act also provides for state and district level authorities responsible for, among other things, **drawing plans for implementation of national plans and preparing local plans.**
 1. **State Disaster Management Authority**
 2. **District Disaster Management Authority.**
 - **Finance:**
 - It contains the provisions for financial mechanisms such as the creation of funds for emergency response, **National Disaster Response Fund** and similar funds at the state and district levels.
 - **Civil and Criminal Liabilities:**
 - The Act also devotes several sections various **civil and criminal liabilities resulting from violation** of provisions of the act.
 - Under **Section 51 of the Act**, anyone refusing to comply with orders is liable for punishment with **imprisonment up to one year, or fine, or both.** In case this refusal leads to death of people, the person liable shall be **punished with imprisonment up to two years.**
 - **Challenges:**
 - **Absence of Disaster Prone Zones:**
 - One of the most glaring inadequacies in the Act is the absence of a provision for declaration of 'disaster-prone zones'.
 - Almost **all disaster related legislations in the world have mapped out disaster-prone zones** within their respective jurisdictions.
 - The **state cannot be expected to play a proactive role unless an area is declared 'disaster-prone'.** Classification helps in determining the extent of damages as well.
 - **Neglects Progressive Behavior of Disasters:**
 - The Act portrays every disaster as a sudden occurrence and completely fails to take into account that disasters can be progressive in nature as well.
 - In 2006, over 3,500 people were affected by **dengue**, a disease with a history of outbreaks in India, yet no effective mechanism

Note:

has been put in place to check such an ordeal.

- **Tuberculosis** is known to kill thousands of people in the country each year but since its occurrence is not sudden or at once, it has not found a place in the Act.

○ **Overlapping Functions:**

- The Act calls for establishment of multiple-national level bodies, the functions of which seem to be **overlapping, making coordination between them cumbersome.**
- The **local authorities**, who have a very valuable role to play in the wake of any disaster as first responders, **barely find a mention at all.** There are **no substantive provisions to guide them**, merely a minor reference to taking 'necessary measures'.

○ **Procedural Delays and Inadequate Technology:**

- Added to that, **delayed response, inappropriate implementation of the plans and policies, and procedural lags** plague the disaster management scheme in India.
- Inadequate technological capacity for accurate prediction and measurement of the disaster **result in large scale damage.**

National Panchayati Raj Day

Why in News

India commemorates the **12th National Panchayati Raj day** on **24th April 2021.**

- The Prime Minister has launched the distribution of **e-property cards** under the **SWAMITVA** scheme on the Day.

Key Points

➤ **About:**

- **Background:** The first **National Panchayati Raj Day** was celebrated in **2010**. Since then, the National Panchayati Raj Day is celebrated on **24th April** every year in India.
- **Awards Presented on the Day:**
 - The **Ministry of Panchayati Raj** has been awarding the best performing **Panchayats/States/UTs** across the country in recognition of their good work.

- Awards are given **under various categories** namely,
 - Deen Dayal Upadhyay Panchayat Sashaktikaran Puraskar,
 - Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar,
 - Child-friendly Gram Panchayat Award,
 - Gram Panchayat Development Plan Award and
 - e-Panchayat Puraskar (given to States/UTs only).
- **For the first time**, the Prime Minister will transfer the award money (as Grants-in-Aid) directly to the bank account of the Panchayats concerned in real time.

➤ **Panchayati Raj:**

- After the Constitution came into force, **Article 40** made a mention of panchayats and **Article 246** empowered the state legislature to legislate with respect to any subject relating to local self-government.
- **Panchayati Raj Institution (PRI)** was constitutionalized through the **73rd Constitutional Amendment Act, 1992** to build democracy at the grass roots level and was entrusted with the task of rural development in the country.
- **PRI** is a system of **rural local self-government** in India.
 - Local Self Government is the management of local affairs by such local bodies who have been elected by the local people.
- To **strengthen e-Governance in Panchayati Raj Institutions (PRIs)** across the country, Ministry of Panchayati Raj (MoPR) has launched **eGramSwaraj**, a user friendly web-based portal.
 - It unifies the planning, accounting and monitoring functions of Gram Panchayats. It's combination with the Area Profiler application, Local Government Directory (LGD) and the **Public Financial Management System (PFMS)** renders easier reporting and tracking of Gram Panchayat's activities.

➤ **About SVAMITVA Scheme:**

- **SVAMITVA** (Survey of Villages and Mapping with Improved Technology in Village Areas) scheme is a collaborative effort of the **Ministry of Panchayati Raj, State Panchayati Raj Departments, State Revenue Departments** and **Survey of India.**

Note:



drishti

- **Aim:** To provide an integrated property validation solution for rural India.
 - It is a scheme for mapping the land parcels in rural inhabited areas using drone technology and Continuously Operating Reference Station (CORS).
 - The mapping will be done across the country in a phase-wise manner over a period of four years - from **2020 to 2024**.

Salient Features of the 73rd Constitutional Amendment

- The 73rd Constitutional Amendment **added Part IX titled "The Panchayats"** to the Constitution.
- Basic unit of democratic system-**Gram Sabhas (villages)** comprising all the adult members registered as voters.
- **Three-tier system of panchayats** at village, intermediate block/taluk/mandal and district levels except in States with population is below 20 lakhs (Article 243B).
- Seats at all levels **to be filled by direct elections** (Article 243C (2)).
- **Reservation of Seats:**
 - Seats reserved for **Scheduled Castes (SCs) and Scheduled Tribes (STs)** and the chairpersons of the Panchayats at all levels also shall be reserved for SCs and STs in proportion to their population.
 - One-third of the total number of seats to be **reserved for women**.
 - One-third offices of chairpersons at all levels reserved for women (Article 243D).
- **Duration:**
 - **Uniform five year term** and elections to constitute new bodies to be completed before the expiry of the term.
 - In the event of dissolution, elections compulsorily within six months (Article 243E).
- **Independent Election Commission in each State** for superintendence, direction and control of the electoral rolls (Article 243K).
- **Power of Panchayats:** Panchayats have been authorised to prepare plans for economic development and social justice in respect of subjects illustrated in Eleventh Schedule (Article 243G).
- **Source of Revenue (Article 243H):** State legislature may authorise the Panchayats with

- Budgetary allocation from State Revenue.
- Share of revenue of certain taxes.
- Collection and retention of the revenue it raises.
- **Establish a Finance Commission in each State** to determine the principles on the basis of which adequate financial resources would be ensured for panchayats and municipalities (Article 243I).
- **Exemptions:**
 - The Act does not apply to the states of Nagaland, Meghalaya and Mizoram and certain other areas because of socio-cultural and administrative considerations. These areas include:
 - the Scheduled areas and the tribal areas (under **Schedule VI** of the Constitution) in the states.
 - the hill areas of Manipur for which district councils exist,
 - Darjeeling district of West Bengal for which Darjeeling Gorkha Hill Council exists.
 - However, the Parliament has extended the provisions of Part IX to **Vth schedule** areas through an Act called the **Provisions of Panchayats (Extension to the Scheduled Areas) Act, 1996**.
 - At present, **10 States** namely **Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana** have **Fifth Schedule Area**.

#FOSS4GOV

Innovation Challenge

Why in News

Recently, the **Ministry of Electronics & IT (MeitY)** has announced **#FOSS4GOV Innovation Challenge** to **accelerate adoption of Free and Open Source Software (FOSS) in Government**.

Key Points

- **Free and Open Source Software (FOSS):**
 - It **doesn't** mean software is **free of cost**.
 - The term **"free"** indicates that the **software does not have constraints on copyrights**.
 - It means that **source code of the software is open for all** and anyone is free to use, study and modify the code.

Note:



drishti

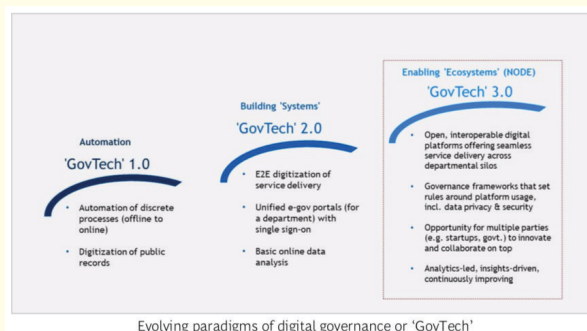
- It allows other people also to contribute to the development and improvement of the software like a community.
 - The Free and Open Source Software may also be referred to as **Free/Libre Open Source Software (FLOSS)** or **Free/Open Source Software (F/OSS)**.
 - Examples of FOSS include MySQL, Firefox, Linux, etc.
 - Another category of software is 'Closed Source Software'.
 - The software which uses the proprietary and closely guarded code.
 - Only the original authors have the authority to access, copy, and alter that software.
 - In this case one does not purchase the software, but only pay to use it.
- **About the Challenge:**
- It will harness the **innovation potential of the FOSS community** RM and ERP with possible applications for **Govtech in Health, Education, and Agriculture** etc.
 - **CRM** stands for "Customer Relationship Management".
 - **ERP** stands for "Enterprise Resource Planning" and refers to software and systems used to plan and manage all the core supply chain, manufacturing, services, financial and other processes of an organization.
 - It is a key component of **GovTech 3.0**, which is about building secure and inclusive **Open Digital Ecosystems (ODEs)**.
 - The participants are eligible for incubation support, prize money, mentorship by domain experts, institutional support from eminent organizations for incubation of ideas and listing of solutions on **Government e Marketplace (GeM)**.
- **Significance:**
- India is well positioned to become a vibrant hub for **Free and Open Source Software (FOSS)** innovations, due to the large number of 4G data subscribers in India.
 - **96%** of the subscribers access the digital world via open-source based mobile operating systems (primarily Android).
 - India's largest-government projects (including **Aadhaar**) and many technology start-ups have also been built using FOSS.

➤ **Other Related Initiatives:**

- The Government of India had issued a **Policy on Adoption of Open Source Software in 2015**.
- **Free and Open Source Software for Education (FOSSEE) Project:** It is a project promoting the use of open source software in educational institutions. It does that through instructional material, such as spoken tutorials, documentation, such as text-book companions, awareness programmes, such as conferences, training workshops, and internships.
- The government has also made the android version of the **Aarogya Setu** app open source.

GovTech 3.0

- **GovTech 1.0** was the era of "computerisation" of manual processes such as putting income tax forms online.
- **GovTech 2.0** was about building systems which digitised end-to-end processes, for example, the government's "e-office" file management system.
- GovTech 3.0 is **focussed on Open Digital Ecosystems (ODEs)**, the underlying philosophy suggests that the government should focus on creating the "digital commons".
 - It envisages the government becoming a **facilitator by creating digital infrastructure on which innovators can collaboratively build solutions** for the public good.
 - ODEs are: "open and secure digital platforms that enable a community of actors to unlock transformative solutions for society, based on a robust governance framework".
 - Several path-breaking ODEs are already in play in India: **Unified Payments Interface (UPI)** in the financial services space; the National Digital Infrastructure for Teachers called **DIKSHA**; etc.



Note:

Chandler Good Government Index

Why in News

Recently, India has been **ranked 49th** in the **Chandler Good Government Index (CGGI)**.

- **Finland** has topped the list.

Key Points

- **About:**
 - The CGGI is **released by the Chandler Institute of Governance** which is a private nonprofit organization headquartered in Singapore.
 - The Index classifies **104 countries** in terms of government capabilities and outcomes.
 - Each country is measured across over 50 open data points. The index **focuses on seven pillars**:
 - Leadership and foresight.
 - Robust laws and policies.
 - Strong institutions.
 - Financial stewardship.
 - Attractive marketplace.
 - Global influence and reputation.
 - Helping people rise.
- **Objective:**
 - It **supports government leaders and public officers worldwide in nation building** and strengthening public institutional capacity through training, research and advisory work.
 - It also **shares tools and frameworks for effective policymaking, and empowers nations to provide better public services** for citizens.
- **Performance of South Asian Countries:**
 - India ranked 49th, Sri Lanka 74th, Pakistan 90th and Nepal 92nd.
- **Indian Initiatives for Good Governance:**
 - **Good Governance Index:**
 - It has been launched by the **Ministry of Personnel, Public Grievances & Pensions** to determine the status of governance in the country.
 - It assesses the **impact of various interventions taken up by the State Government and UTs**.

Good Governance Day:

- It is celebrated annually on **25th December** to mark the birth anniversary of the former Prime Minister **Atal Bihari Vajpayee**.
- Its aim is to create awareness of accountability in government among the citizens of India.

National e-Governance Plan:

- It has the vision to **"make all government services accessible to the common man in his locality**, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man."

Right to Information Act, 2005:

- It plays an effective role in ensuring transparency in governance.

Other Initiatives:

- Setting up of **NITI Aayog, Make in India programme, Lokpal**, etc.

Governance

About:

- It is the **process of decision-making** and the process by which decisions are implemented (or not implemented).
- **Governance** can be used in several contexts such as **corporate governance, international governance, national governance and local governance**.

Good Governance:

- It is an approach to **government that is committed to creating a system founded in justice and peace that protects individual's human rights and civil liberties**.

- Eight Characteristics of Good Governance as Identified by the **United Nations**:



Note:

Agriculture Infrastructure Fund

Why in News

Agriculture Infrastructure Fund has crossed the eight thousand crore mark. The investment will give a boost to several agricultural projects which will unlock value for farmers across the country.

Key Points

- It is a **central sector scheme**.
- **Aim:**
 - To provide **medium - long term debt financing facility** for investment in viable projects for **post-harvest management Infrastructure** and community farming assets.
 - The funds will be provided for setting up of cold stores and chains, warehousing, grading and packaging units, e-marketing points linked to e-trading platforms, besides PPP projects for crop aggregation sponsored by central/state/local bodies.
- **Duration:** Financial Year **2020 to 2029**.
- **Features:**
 - **Eligible Beneficiaries:**
 - They are **Farmers, FPOs, PACS**, Marketing Cooperative Societies, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-ups, and Central/State agency or Local Body sponsored Public-Private Partnership (PPP) Projects.
 - **Financial Support:**
 - **Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans** to eligible beneficiaries.
 - Moratorium for repayment may vary subject to minimum of 6 months and maximum of 2 years.
 - **Interest Subvention:**
 - Loans will have interest subvention of 3% per annum up to a limit of Rs. 2 crore. This subvention will be available for a maximum period of seven years.
 - **CGTMSE Scheme:**
 - A credit guarantee coverage will be available for eligible borrowers from the scheme under **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme** for a loan up to Rs. 2 crore.

Central Sector Scheme

- These schemes are 100% funded by the Central government.
- Implemented by the Central Government machinery.
- Formulated on subjects mainly from the Union List.
- E.g.: Bharatnet, Namami Gange-National Ganga Plan, etc.

Government of NCT of Delhi (Amendment) Act, 2021

Why in News

The **Government of National Capital Territory (GNCT) of Delhi (Amendment) Act, 2021**, which gives **primacy to the Lieutenant Governor (L-G) over the elected government** in the city, has **come into force**.

Key Points

- **Provisions of the GNCT of Delhi (Amendment) Act 2021:**
 - It **amended the Sections 21, 24, 33 and 44 of the 1991 Act**.
 - States that the **"government"** in the National Capital Territory of Delhi **meant the Lieutenant-Governor** of Delhi.
 - It **gives discretionary powers to the L-G** even in matters where the Legislative Assembly of Delhi is empowered to make laws.
 - It **seeks to ensure that the L-G is "necessarily granted an opportunity"** to give her or his opinion before any decision taken by the Council of Ministers (or the Delhi Cabinet) is implemented.
 - It **bars the Assembly or its committees from making rules** to take up matters concerning day-to-day administration, or to conduct inquiries in relation to administrative decisions.
- **Criticism:**
 - The latest amendment will **greatly reduce the efficiency and timeliness of the Delhi government** by making it imperative for it to hold consultations with the L-G even when a situation demands urgent action.
 - Significantly, the **L-G is not obliged to give his opinion to the State government within a time frame**. Critics argue that the L-G could politically exploit these unbridled powers to hamper the

Note:



drishti

government's administrative work and thus turn the political tides against the incumbent if he so desires.

- It is **against the spirit of 'Federalism.'**
- **Union Government's Stand:**
 - It is **in keeping with the Supreme Court's July 2018 ruling** on the ambit of powers of the L-G and the Delhi government following several headliner controversies between the two.
 - The purported fair objectives of the Act, include **enhancing public accountability and easing out technical ambiguities** related to everyday administration.
 - This will **increase administrative efficiency of Delhi** and will **ensure better relationship between the executive and the legislator.**

Background

- **Enactment of GNCTD Act:**
 - The **GNCTD Act** was enacted in 1991 to "supplement provisions of the Constitution relating to the Legislative Assembly and a Council of Ministers for the National Capital Territory of Delhi".
 - It **enabled the process of an elected government in Delhi.**
 - The **Supreme Court had in the past appreciated the 1991 developments**, stating that the real purpose behind the **Constitution (69th Amendment) Act, 1991** is to establish a democratic set-up and representative form of government wherein the majority has a right to embody their opinions in laws and policies pertaining to the NCT of Delhi subject to the limitations imposed by the Constitution.

69th Amendment Act, 1992

- It **added two new Articles 239AA and 239AB** under which the Union Territory of Delhi has been given a special status.
- **Article 239AA** provides that the Union Territory of Delhi be called the National Capital Territory of Delhi and its administrator shall be known as Lt. Governor.
 - It also **creates a legislative assembly for Delhi** which can make laws on subjects under the State List and Concurrent List **except on these matters:** public order, land, and police.
 - It also **provides for a Council of Ministers for Delhi** consisting of not more than 10% of the total number of members in the assembly.

- **Article 239AB** provides that the **President may by order suspend the operation of any provision of Article 239AA** or of all or any of the provisions of any law made in pursuance of that article. This provision **resembles Article 356 (President's Rule).**

Point of Friction:

- However, over the years, there was **friction between the Chief Minister and the Lieutenant Governor (L-G)** over power-sharing.
- The focal point of these conflicts was that **in case of a difference between the L-G and the Council of Ministers on any matter,**
 - The **matter was to be referred to the President** by the L-G for his decision,
 - And **pending such a decision the L-G was empowered to take any action** on the matter as he deemed right.

Judgement of the Supreme Court:

- In the **Government of NCT of Delhi vs Union of India and Another in 2018** case, the SC held that:
 - The **government was not under obligation to seek the concurrence of the L-G** on its decisions and
 - That **any differences between them should be resolved keeping in view the constitutional primacy of representative government** and cooperative federalism.
- Essentially, the SC judgment **made it extremely difficult for the L-G to refer such matters to the President.**

Differential Pricing for Covid-19 Vaccines

Why in News

Recently, the Supreme Court has asked the government to clarify in its affidavit the basis and rationale for pricing of **Covid-19** Vaccines.

- The court noted that "different manufacturers are quoting different prices". There are powers under the **Drugs Control Act and Patents Act**, and this is the time to invoke such powers.

Note:



drishti

Key Points➤ **Pricing Regulation for Drugs in India:**

- The pricing of essential drugs is regulated centrally through **The Essential Commodities Act, 1955**.
- Under **Section 3 of the Act**, the government has enacted the **Drugs (Prices Control) Order (DPCO)**.
 - The **DPCO** lists **over 800 drugs** as “essential” in its schedule, and has capped their prices.
 - The capping of prices is done based on a formula that is worked out in each case by the **National Pharmaceutical Pricing Authority (NPPA)**, which was set up in **1997**.
- However, regulation through DPCO is **not applicable for patented drugs or fixed-dose combination (FDC) drugs**.
 - This is why the price of the antiviral drug **remdesivir**, which is currently in great demand for the treatment of serious cases of Covid-19, is **not regulated by the government**.
- An **amendment is required to bring Covid-19 vaccines or drugs** used in the treatment of Covid-19 such as remdesivir under the **DPCO** policy.

➤ **Other Legal Avenues Available to Address Differential Pricing for Vaccines:**

- **The Patents Act, 1970:**

- This law, which was mentioned by the Supreme Court, **has two key provisions** that could be potentially invoked to regulate the pricing of the vaccine.
- **Section 100** of the Act gives the central government the power to authorise anyone (a pharma company) to use the invention for the “purposes of the government”.
 - This provision enables the government to license the patents of the vaccine to specific companies to speed up manufacturing and ensure equitable pricing.
- **Under Section 92** of the Act, which deals with **compulsory licensing**, the government can, without the permission of the patent holder, license the patent under specific circumstances prescribed in the Act.
- **The Epidemic Diseases Act, 1897:**
 - This has been the main legal weapon for the government in dealing with the pandemic.
 - **Section 2** of this law gives the government “power to take special measures and prescribe regulations as to dangerous epidemic disease”.
 - The broad, undefined powers under the Act, can be used to take measures to regulate pricing.

Note:

Economic Scenario

Highlights

- Power Grid Infrastructure Investment Trust
- Ways and Means Advance
- Madhu Kranti Portal & Honey Corners
- NEFT & RTGS Direct Membership for Payment System Operators
- China Not Leaving Hot Springs & Gogra Post
- Britain Considering New Digital Currency Bitcoin
- Startup India Seed Fund Scheme
- India's Falling Crude Oil & Natural Gas Production
- AIM-PRIME
- Microfinance Institutions
- Crop Diversification
- Oxygen Crisis: Covid-19
- Launch of Supply Chain Resilience Initiative
- RBI Report on Asset Reconstruction Companies
- MACS 1407: Variety of Soybean
- Corporate Social Responsibility Expenditure

Power Grid Infrastructure Investment Trust

Why in News

The Power Grid Corporation of India (PGCIL) launched its Infrastructure Investment Trust (InvIT) - PowerGrid Infrastructure Investment Trust (PGInvIT).

Key Points

➤ About PGINvIT:

- This is the **first time a state-owned entity (PGCIL) is monetizing its infrastructure assets through the InvIT route.**
- This will be **only the third InvIT to be listed in the Indian markets**, after IRB InvIT and India Grid Trust, both of which went public in 2017.
- The InvIT route was **proposed by the Centre as an alternative fundraising route** for state-run companies to manage funding requirements without having to depend on government support.

Power Grid

- It is a **public limited company** under the administrative control of the **Ministry of Power.**
- It is the **largest power transmission company in India.**
- It started its commercial operation in the year 1992-93 and is today, a **Maharatna company.**

➤ About Infrastructure Investment Trust (InvIT):

- It is a **collective investment scheme similar to a mutual fund**, which enables **direct investment** of money from **individual and institutional investors in infrastructure projects** to earn a small portion of the income as return.
- InvITs **can be treated as the modified version of REITs (real estate investment trusts)** designed to suit the specific circumstances of the infrastructure sector.
- It is **created to hold income-generating and operational infrastructure assets** such as roads, power transmission lines, gas pipelines, etc.
 - These assets have long-term contracts with strong counterparties that provide a steady cash flow over the long term – typically 15-20 years.
- The InvITs are **regulated by the SEBI (Infrastructure Investment Trusts) Regulations, 2014.**
- An InvIT **consists of four elements:**
 - **Trustee** has the responsibility of inspecting the performance of an InvIT.
 - **Sponsor(s)** are promoters of the company that set up the InvIT.
 - **Investment Manager** is entrusted with the task of supervising the assets and investments of the InvIT.
 - **Project Manager** is responsible for the execution of the project.
- Units of InvITs **can be listed and traded on a stock exchange**, providing them liquidity.

Note:

- Or they can be private and unlisted, in which case they are not publicly traded and largely invested in by institutional investors.

➤ **Advantages of Setting up InvITs:**

- For sponsors (infrastructure developers), InvITs provide a convenient route to monetize revenue-generating assets, unlock equity gains, and deleverage their balance sheets (i.e. to reduce debts).
- InvITs also present a more tax-friendly structure. Being a trust, all income received by the InvIT from underlying assets receives a pass-through treatment and is not taxable at the InvIT level.
- For investors such as banks, financial institutions, pension funds, insurance companies, and even retail investors, InvITs provide a good low-risk investment opportunity.

➤ **Disadvantages of InvITs:**

- InvITs are sensitive to changes in regulatory and tax law.
- Infrastructure assets are not inflation-linked in India.
 - A high rate of inflation has a significant impact on the performance of InvITs.

Ways and Means Advance

Why in News

The Reserve Bank of India (RBI) has decided to continue with the existing interim Ways and Means Advances (WMA) scheme limit of Rs. 51,560 crore for all States/ UTs upto September 2021, given the prevalence of Covid-19.

Key Points

➤ **About Ways and Means Advances:**

- **Launch:** The WMA scheme was introduced in 1997.
- **Purpose:** To meet mismatches in the receipts and payments of the government.
- **Features:**
 - The government can avail immediate cash from the RBI, if required. But it has to return the amount within 90 days. Interest is charged at the existing repo rate.
 - Section 17(5) of the RBI Act, 1934 authorises the central bank to lend to the Centre and

state governments subject to their being repayable "not later than three months from the date of the making of the advance".

■ **Repo Rate is basically the rate at which RBI lends short-term money to banks.**

- If the WMA exceeds 90 days, it would be treated as an overdraft (the interest rate on overdrafts is 2 percentage points more than the repo rate).
- The limits for WMA (for Centre) are decided by the government and RBI mutually and revised periodically.
- A higher limit provides the government flexibility to raise funds from RBI without borrowing them from the market.

➤ **Types:**

- There are two types of Ways and Means Advances — normal and special.
- A Special WMA or Special Drawing Facility is provided against the collateral of the government securities held by the state.
- After the state has exhausted the limit of SDF, it gets normal WMA.
- The interest rate for SDF is one percentage point less than the repo rate.
- The number of loans under normal WMA is based on a three-year average of actual revenue and capital expenditure of the state.

➤ **Significance:**

- The cash flow problems of States have been aggravated by the impact of Covid-19, thus many States are in need of immediate and large financial resources to deal with challenges, including medical testing, screening and providing income and food security to the needy.
- WMA can be an alternative to raising longer-tenure funds from the markets, issue of State government securities (State development loans) or borrowing from financial institutions for short-term funding. WMA funding is much cheaper than borrowings from markets.

➤ **Other Related Decisions:**

- The Special Drawing Facility (SDF) availed by State Governments/ UTs shall continue to be linked to the quantum of their investments in marketable securities issued by the Government of India, including the Auction Treasury Bills (ATBs).

Note:

- The annual incremental investments in **Consolidated Sinking Fund (CSF)** and **Guarantee Redemption Fund (GRF)** shall continue to be eligible for availing of SDF.

Auction Treasury Bills

- These are **money market instruments** issued by the Government of India as a promissory note with guaranteed repayment at a later date.
- Funds collected through such tools are typically **used to meet short term requirements** of the government, hence, to reduce the overall **fiscal deficit** of a country.

Consolidated Sinking Fund

- CSF was **set up in 1999-2000 by the RBI** to meet redemption of market loans of the States.
- Initially, 11 States set up sinking funds. Later, the **12th Finance Commission (2005-10)** recommended that all States should have sinking funds for amortisation of all loans, including loans from banks, liabilities on account of National Small Saving Fund (NSSF), etc.
 - The fund should be maintained outside the consolidated fund of the States and the public account.
 - It should not be used for any other purpose, except for redemption of loans.
- As per the scheme, **State governments could contribute 1-3% of the outstanding market loans each year to the Fund.**
- The Fund is **administered by the Central Accounts Section of RBI Nagpur.**

Guarantee Redemption Fund

- A Guarantee Redemption Fund (GRF) has been **established in the Public Account of India from 1999-2000** for redemption of guarantees given to **Central Public Sector Enterprises (CPSEs), Financial Institutions**, etc. by the Union Government whenever such guarantees are invoked.
- The fund is fed through budgetary appropriations with an annual provision in the Budget Estimates (BE).
- On the **recommendations of Twelfth Finance Commission**, fifteen States have set up a Guarantee Redemption Fund.
- This fund is maintained outside the consolidated fund of the States in the public account and is not to be used for any other purpose, except for redemption of loans. This ensures good fiscal governance.

Madhu Kranti Portal & Honey Corners

Why in News

Recently, the Union Minister for Agriculture and Farmers' Welfare has launched "**Madhu Kranti Portal & Honey Corners**."

Key Points

- **Madhu Kranti Portal:**
 - It is an initiative of **National Bee Board (NBB)**, Ministry of Agriculture and Farmers Welfare under **National Beekeeping & Honey Mission (NBHM)**.
 - This portal is being developed for online registration to achieve a traceability source of Honey and other beehive products on a digital platform.
 - The platform will help in **checking the quality and source of adulteration of honey.**
 - **Significance:**
 - The portal will help in increasing income of the farmers, boost exports and increase employment generation.
 - The portal will hold the database of all the stakeholders involved in honey production, marketing chains, hive production and sales.
 - It will increase the reach of honey to international markets.
- **Honey Corners:**
 - Honey Corners are special spaces for the marketing and sale of honey.
 - It is operated by **National Agricultural Cooperative Marketing Federation of India Ltd (NAFED)**.

National Agricultural Cooperative Marketing Federation of India Ltd.

- The **NAFED** is registered under the Multi State Cooperative Societies Act.
- It was set up in 1958 with the objective to promote cooperative marketing of Agricultural Produce to benefit the farmers.

National Bee Board

- **Small Farmers' Agribusiness Consortium (SFAC)** registered the NBB as a society under the Societies Registration Act, 1860 in 2000 and it was reconstituted (with the secretary as chairman) in June 2006.

Note:

➤ **Objective:**

- Overall development of beekeeping by promoting scientific beekeeping in India to increase the productivity of crops through pollination and increase the honey production for increasing the income of the beekeepers/farmers.
- Presently NBB is implementing **National Horticulture Mission (NHM)** and Horticulture Mission for North East and Himalayan State (HMNEM)

National Beekeeping & Honey Mission (NBHM)

- The mission was announced as part of the **AtmaNirbhar Bharat scheme**. It is a central sector scheme.
- NBHM aims for the overall promotion & development of scientific beekeeping in the country to achieve the goal of 'Sweet Revolution' which is being implemented through the National Bee Board (NBB).

Honey Mission

- The Honey Mission was launched in August 2017 in line with the 'Sweet Revolution'.
 - The 'Sweet Revolution' was launched in 2016 to promote beekeeping and associated activities.
- Under the Honey Mission, **Khadi and Village Industries Commission (KVIC)** provides awareness, training and 'Bee Boxes' along with Bee Colonies to the farmers.

NEFT & RTGS Direct Membership for Payment System Operators

Why in News

Recently, the **Reserve Bank of India (RBI)** has proposed to enable, in a phased manner, **payment system operators** to take **direct membership** in RTGS and NEFT.

- **Real Time Gross Settlement System (RTGS)** and **National Electronic Fund Transfer (NEFT)** are the **Centralised Payment Systems (CPSs)** of the RBI.
- **Non-bank payment system operators**, regulated by the RBI, will be allowed to take direct membership in CPSs.

Key Points

- **Direct Membership of NEFT & RTGS to Payment System Operators:**

Centralised & Decentralised Payment Systems

- The **centralised payment systems** include **Real Time Gross Settlement (RTGS) System** and **National Electronic Fund Transfer (NEFT) system** and any other system which may be decided by RBI from time to time.
 - **RTGS:** It enables real-time transfer of funds to a beneficiary's account and is primarily meant for large-value transactions.
 - Real time means the processing of instructions at the time they are received and gross settlement implies that settlement of funds transfer instructions occurs individually.
 - **NEFT:** It is an electronic fund transfer system in which the transactions received up to a particular time are **processed in batches**.
 - It is **generally used for fund transfers of up to Rs. 2 lakh**.
- The **decentralised payment system** includes **clearing houses managed by RBI** (Cheque Truncation System (CTS) centres) as well as **other banks** (Express Cheque Clearing System (ECCS) centres) and any other system which may be decided by RBI from time to time.

○ **About:**

- This is **expected to minimise settlement risk in the financial system and enhance the reach of digital financial services** to all user segments.
- These entities will, however, **not be eligible for any liquidity facility** from RBI to facilitate settlement of their transactions in these **Centralised Payment Systems (CPSs)**.
- This **will be subject to an overall limit of Rs. 2 lakh for non-banks**.

○ **Non-Bank Entities becoming the Members of CPS:**

- **Prepaid Payment Instrument (PPI)** issuers, Card Networks, **White Label ATM** operators, **Trade Receivables Discounting System (TReDS)** platforms are going to become members of CPS.
- **Mobile wallets** like Google Pay, Mobikwik, etc. can provide NEFT and RTGS facilities etc to their customers.
 - Transfer will be allowed only to **KYC (know your customer)-compliant entities**.

➤ **Facility of Cash Withdrawal:**

Note:



drishti

- RBI has also **proposed to allow the facility of cash withdrawal**, subject to a limit, to non-bank entities — full-KYC PPIs of non-bank PPI issuers.
- **Currently, cash withdrawal is allowed only for full-KYC PPIs issued by banks** and this facility is available through ATMs and Point of Sale terminals.
- Holders of such PPIs, **given the comfort that they can withdraw cash**, are less incentivised to carry cash and consequently more likely to perform digital transactions.

➤ Advantages:

- **Increase Digital Transactions:**
 - Just as use of **Unified Payment Interface (UPI)** increased over the last 4-5 years since it was opened to third-party aggregators, opening the payment system to non-banks would increase digital payments and transactions significantly.
 - It will **enable non-banks to go for full KYC compliance and interoperability**.
- **Better Record of Transactions:**
 - It will prepare a **digital trail of all individuals doing digital transactions on channels outside the banking system**, which could help the overall financial system.
- **Increase in Market Size:**
 - Interoperability of the PPI wallet will **expand the market size and will be beneficial to the end consumers**.
- **Financial Inclusion:**
 - This will **open new opportunities for PPI issuers** as they will be able to provide RTGS and NEFT services to the wallet users. Overall, this will take financial inclusion deeper in the country.

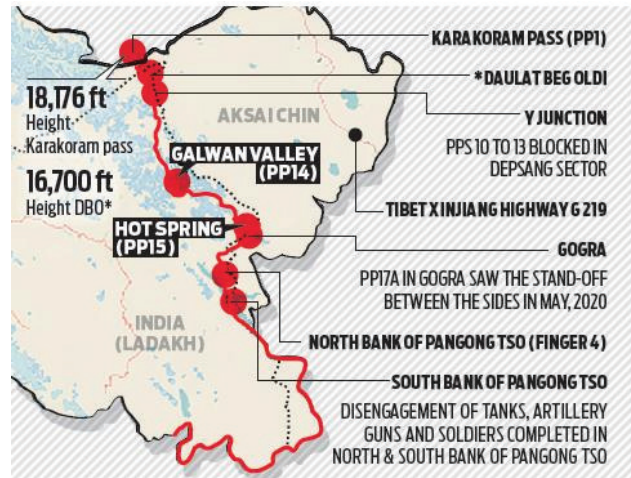
China Not Leaving Hot Springs & Gogra Post

Why in News

Recently, during the 11th round of discussions between the senior military commanders of India and China to resolve the **standoff in eastern Ladakh**, China refused to vacate two of the four original friction points.

- At two friction points, **Patrolling Point 15 (PP15) in Hot Springs**, and **PP17A near Gogra Post**, China still has a platoon-level strength each, along with vehicles.

- Other two are the **Galwan valley** and the **Depsang plains**.



Key Points

- **Patrolling Point 15 and 17A:**
 - Along the **Line of Actual Control (LAC)** between India and China, Indian Army has been given certain locations that its troops have access to patrol the area under its control.
 - These points are known as patrolling points, or PPs, and are decided by the **China Study Group (CSG)**.
 - **CSG was set-up in 1976**, when Indira Gandhi was the prime minister, and is the **apex decision-making body on China**.
 - Barring certain areas, like **Depsang Plains**, these patrolling points are on the LAC, and troops access these points to assert their control over the territory.
 - It is an important exercise since the **boundary between India and China is not yet officially demarcated**.
 - **LAC** is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.
 - PP15 and PP17A are **two of the 65 patrolling points in Ladakh along the LAC**.
 - Both these points are in an area where **India and China largely agree on the alignment of the LAC**.
 - PP15 is located in an area known as the **Hot Springs**, while PP17A is near an area called the **Gogra post**.
- **Location of Hot Springs and Gogra Post:**
 - Hot Springs is just **north of the Chang Chenmo river** and Gogra Post is **east of the point where**

Note:

the river takes a hairpin bend coming southeast from Galwan Valley and turning southwest.

- The area is **north of the Karakoram Range of mountains**, which lies north of the **Pangong Tso lake**, and south east of Galwan Valley.
- **Importance:**
 - The area lies close to **Kongka Pass**, one of the main passes, which, according to China marks the boundary between India and China.
 - **India's claim** of the international boundary lies significantly east, as it includes the entire **Aksai Chin** area as well.
 - Hot Springs and Gogra Post are **close to the boundary between two of the most historically disturbed provinces** (Xinjiang and Tibet) of China.

Pangong Tso lake

- Pangong Lake is **located in the Union Territory of Ladakh**.
- It is **situated at a height of almost 4,350m** and is the **world's highest saltwater lake**.
- Extending to almost 160km, **one-third of the Pangong Lake lies in India and the other two-thirds in China**.

Galwan Valley

- The valley refers to the **land that sits between steep mountains that buffet the Galwan River**.
- The **river has its source in Aksai Chin**, on China's side of the LAC, and it flows from the east to Ladakh, where it **meets the Shyok river on India's side of the LAC**.
- The valley is **strategically located between Ladakh in the west and Aksai Chin in the east**, which is currently controlled by China as part of its Xinjiang Uyghur Autonomous Region.

Chang Chenmo River

- Chang Chenmo River or Changchenmo River is a **tributary of the Shyok River**, part of the **Indus River system**.
- It is at the southern edge of the disputed Aksai Chin region and north of the Pangong Lake basin.
- The source of Chang Chenmo is near the **Lanak Pass**.

Kongka Pass

- The Kongka Pass or Kongka La is a low mountain pass over a hill that intrudes into the Chang Chenmo Valley. It is **in the disputed India-China border area in Ladakh**.

Karakoram Range

- It is also known as **Krishnagiri** which is situated in the northernmost range of the Trans-Himalayan ranges. It forms India's frontiers with Afghanistan and China.
- It **extends eastwards from the Pamir for about 800 km**. It is a range with lofty peaks [elevation 5,500 m and above].
- Some of the peaks are more than 8,000 metre above sea level. **K2 (8,611 m)[Godwin Austen or Qogir] is the second highest peak in the world** and the highest peak in the Indian Union.
- The **Ladakh Plateau lies to the north-east of the Karakoram Range**.

Britain Considering New Digital Currency Bitcoin

Why in News

British authorities are exploring the possibility of creating a **Central Bank Digital Currency**, being touted as **"Bitcoin."**

- It is a step towards future proofing Pound Sterling (currency of the United Kingdom) against **cryptocurrencies** and improving the payments system.

Key Points

➤ About Bitcoin:

- In the wake of declining cash payments in the country partly due to the **Corona pandemic**, the Bank of England and the Treasury are considering creating **Digital Currency**.
- The Digital currency, if passed, **would exist alongside cash and bank deposits and act as a new form of money** to be used by households and businesses in England.
- It would **sit at the interface between cash and private payments systems** and would **not necessarily be based on distributed ledger technology**.
- This 'bitcoin' **would be tied to the value of the pound** to eliminate holding it as an asset to derive profit.
- The move **could have an economic impact in the form of wider investment** into the UK tech sector and lower transaction costs for international businesses.

Note:

- Britain's digital currency would be different in a key sense as if passed, it **would be issued by state authorities**.
 - Currently, only the Bahamas has such a currency, though China is trialing it in several cities.
- **Digital Currency:**
 - Digital currency is **a payment method which is in electronic form and is not tangible**.
 - It can be transferred between entities or users with the help of technology like computers, smartphones and the internet.
 - Although it is similar to physical currencies, digital money allows borderless transfer of ownership as well as instantaneous transactions.
 - Digital currency is also known as digital money and cyberspace. **E.g. Cryptocurrency.**
- **Central Bank Digital Currency:**
 - A Central Bank Digital Currency (CBDC) uses an electronic record or digital token to **represent the virtual form of a fiat currency** of a particular nation (or region).
 - **Fiat Currency:** It is government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it.
 - A CBDC is **centralized**; it is issued and regulated by the competent monetary authority of the country.
 - Each unit acts as a secure digital instrument equivalent to a paper bill and can be used as a mode of payment, a store of value, and an official unit of account.
- **Benefits:**
 - CBDC **aims to bring in the best of both worlds**—the convenience and security of digital form like cryptocurrencies, and the regulated, reserved-backed money circulation of the traditional banking system.
 - New forms of digital money **could provide a parallel boost to the vital lifelines that remittances provide** to the poor and to developing economies.
 - It will ensure that **people are protected from financial instability** caused due to the failure of private payments systems.
 - **Ensures that central banks retain control over monetary policy** against the remote possibility that payments might migrate into cryptocurrencies over which they have no leverage.

➤ Risk Associated:

- There is a need to enforce strict compliance of Know Your Customer (KYC) norms to prevent the **currency's use for terror financing or money laundering**.
- Existence of digital money **could undermine the health of commercial banks** as it removes deposits on which they primarily rely for income.

➤ India's Stand on Digital Currency:

- **Reserve Bank India (RBI)** had considered cryptocurrencies as a poor unit of account and also demonstrated by their frequent and high fluctuation in value.
- According to RBI, it poses several risks, including anti-money laundering and terrorism financing concerns (AML/CFT) for the state and liquidity, credit, and operational risks for users.
- However, it is **considering developing a sovereign digital currency** when the time is appropriate.

Startup India Seed Fund Scheme

Why in News

Recently, the Government has launched the **Startup India Seed Fund Scheme (SISFS)**.

- The Scheme was announced during the '**Prarambh: Startup India International Summit**' which marked the **five-year anniversary of the Startup India initiative**.

Key Points

➤ About the Startup India Seed Fund Scheme (SISFS):

- **Aim:** To provide financial assistance to startups for proof of concept, prototype development, product trials, market entry, and commercialization.
- **Launched by:** **Department for Promotion of Industry and Internal Trade (DPIIT)** with an outlay of Rs. 945 Crore.
- **Some Eligibility Conditions:**
 - A startup, recognized by DPIIT, **incorporated not more than 2 years ago** at the time of application.
 - Startups **should not have received more than Rs. 10 lakh of monetary support** under any other Central or State Government scheme.

Note:



drishti

○ Features:

- It will support an estimated 3,600 entrepreneurs through 300 incubators in the next 4 years.
- An **Experts Advisory Committee (EAC)**, constituted by DPIIT, will be responsible for the overall execution and monitoring of the Scheme.
- Grants of upto Rs. 5 crore will be provided to the eligible incubators selected by the committee.
- The selected incubators will provide grants of up to Rs. 20 lakh for validation of proof of concept, or prototype development, or product trials to startups.
- Investments of up to Rs. 50 lakh will be provided to the startups for market entry, commercialization, or scaling up through convertible debentures or debt-linked instruments.

○ Expected Benefit:

- It will help in creating a robust startup ecosystem in Tier 2 and 3 regions, as the smaller towns in India are often not provided with appropriate funding.

➤ About Startup India Initiative:

- It envisages building a robust Startup ecosystem in the country for nurturing innovation and providing opportunities to budding entrepreneurs. It was launched in 2016.
- The action plan of this initiative focuses on following three areas:
 - Simplification and Handholding.
 - Funding Support and Incentives.
 - Industry-Academia Partnership and Incubation.

➤ Related Government Initiatives:

- **Startup Innovation Challenges:** It is a fantastic opportunity for any startup to leverage their networking and fund-raising efforts.
- **National Startup Awards:** It seeks to recognize and reward outstanding startups and ecosystem enablers that are contributing to economic dynamism by spurring innovation and injecting competition.
- **Ranking of States on Support to Startup Ecosystems:** It is an evolved evaluation tool aimed to strengthen the support of States and UTs to holistically build their startup ecosystems.
- **SCO Startup Forum:** The first-ever **Shanghai Cooperation Organisation (SCO)** Startup Forum

was launched in October 2020 to develop and improve startup ecosystems collectively.

- **Prarambh:** The 'Prarambh' Summit aims to provide a platform to the startups and young minds from around the world to come with new ideas, innovation and invention.

Seed Funding

- It typically represents the first official money that a business venture or enterprise raises.
- It helps a company to finance its first steps, including things like market research and product development.
- There are many potential investors in a seed funding situation: founders, friends, family, incubators, venture capital companies and more.
- One of the most common types of investors participating in seed funding is a so-called "angel investor."
 - Angel investors tend to appreciate riskier ventures (such as startups with little by way of a proven track record so far) and expect an equity stake in the company in exchange for their investment.

Department for Promotion of Industry and Internal Trade

- The department was earlier called Department of Industrial Policy & Promotion and was renamed as DPIIT in January, 2019.
- It comes under the **Ministry of Commerce and Industry**.
- In 2018, matters related to **e-commerce** were transferred to the Department and in 2019, the Department was given charge for matters related to Internal Trade, welfare of traders and their employees and Startups.
- The role of DPIIT is to promote/accelerate industrial development of the country by facilitating investment in new and upcoming technology, **foreign direct investment** and support balanced development of industries.
- **Major engagements of DPIIT:**
 - **Business Reform Action Plan (BRAP) ranking of states,**
 - **Industrial Corridors,**
 - **Invest India,**
 - **Make in India initiative,** etc.

Note:

India's Falling Crude Oil & Natural Gas Production

Why in News

According to the latest government data India's **crude oil production and natural gas output declined** in the **Financial Year (FY) 2020-2021**.

- India's crude oil and natural gas production have been **falling consistently since 2011-12**.

Key Points

- **Decline in Production:**
 - **Crude Oil Production:**
 - Declined by **5.2%** as private and public firms produced **30.5 million tonnes** in 2020-21 compared to **32.17 million tonnes** produced during the same period in 2019-2020.
 - **Natural Gas Production:**
 - Declined by **8.1%** and in 2020-21 only **28.67 billion cubic meters** was produced compared to **31.18 billion cubic meters** in 2019-20.
- **Reason for Decline:**
 - **Ageing Sources:**
 - Most of India's crude oil and natural gas production comes from **ageing wells that have become less productive over time**.
 - **Need of Intensive Technology:**
 - There is **no more easy oil and gas available** in India and that producers would have to invest in extracting oil and gas using **technologically intensive means** from more **difficult fields** such as **ultra deepwater fields**.
 - **Domination of State Owned Companies:**
 - Crude oil production in India is dominated by two major state-owned exploration and production companies, **Oil and Natural Gas Corporation Limited (ONGC)** and **Oil India**.
 - These companies are the key bidders for hydrocarbon blocks in auctions and were the only successful bidders in the fifth and latest round of auctions under the **Open Acreage Licensing Policy (OALP)** regime with ONGC bagging seven of the eleven oil and gas blocks on offer and Oil India acquiring rights for the other four.

- **Low Interest of Foreign Companies:**
 - India's **efforts to attract foreign energy giants** into hydrocarbon exploration and production **haven't been quite fruitful**.
 - The **government has asked ONGC to boost its investments in explorations and increase tie-ups with foreign players** to provide technological support in extracting oil and gas from difficult oil and gas fields.
 - The government is also **reaching out to major foreign players** to convey that the **current system of auction and regulation is much more "open and transparent"** than before.
- **Climate Change:**
 - Mounting pressure due to **climate change** is prompting oil and gas players to diversify into clean energy.
- **Reason for Less Private Participation:**
 - **Operationalisation Delays:**
 - One of the key reasons cited by experts for low private participation in India's upstream oil and gas sector are **delays in the operationalisation of hydrocarbon blocks due to delays in major clearances** including environmental clearances and approval by the regulator of field development plans.
 - **High Cess:**
 - Industry **players have been calling for a reduction** in the cess on domestically produced crude oil to **10% from the current 20%**.
 - **Limit on maximum Production:**
 - **Internal maximum production levels set by oil and gas majors to address climate change** had also lowered interest by oil majors to expand operations in India.
- **Impact:**
 - **Reliance on Imports:**
 - Low domestic production of crude oil and natural gas makes **India more reliant on imports**.
 - The **share of imports as a proportion of overall crude oil consumption in India has risen** from 81.8% in FY2012 to 87.6% in FY2020.
 - **Not in Favouring of India's Vision:**
 - Boosting oil and gas production has also been a key part of the government's **Atma Nirbhar Bharat initiative** and its goal to **boost the use**

Note:



drishti

of natural gas in India's primary energy mix from the current 6.2% to 15% by 2030.

- **Some Government Initiatives to Improve Production:**
 - **Reforming Exploration & Licensing:**
 - In October 2020 **Cabinet Committee on Economic Affairs (CCEA)** approved the **Policy framework on reforms** in the exploration and licensing sector **for enhancing domestic exploration and production of oil and gas.**
 - **National Data Repository (NDR):**
 - The **NDR** was established by the Government in 2017 to **assimilate, preserve and upkeep the vast amount of data which could be organized and regulated for use in future exploration and development**, besides use by R&D and other educational institutions
 - It is an integrated data repository of Exploration and Production (E&P) data of Indian sedimentary basins.
 - **Hydrocarbon Exploration and Licensing Policy (HELP):**
 - It **replaced the erstwhile New Exploration Licensing Policy (NELP) in 2016** and provides for a **single License for exploration and production of conventional as well as non-conventional Hydrocarbon resources**; Pricing and Marketing Freedom; reduced rate of royalty for offshore blocks.

AIM-PRIME

Why in News

Recently, the **Atal Innovation Mission (AIM)**, **NITI Aayog** launched **AIM-PRIME (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship)**.

Key Points

- **Aim:**
 - Promoting **science-based, deep technology ideas** to market through training and guidance over a period of 12 months.
 - **Deep technology** is based on **tangible engineering innovation** or scientific advances and discoveries. Deep Tech is often set apart by its **profound enabling power**, the differentiation it can create, and its **potential to catalyze change**.

Atal Innovation Mission

- **About:**
 - AIM is the Government of India's **flagship initiative to promote a culture of innovation and entrepreneurship in the country.**
- **Objective:**
 - **To develop new programmes and policies for fostering innovation** in different sectors of the economy, **provide platform and collaboration opportunities for different stakeholders, create awareness and create an umbrella structure** to oversee the innovation ecosystem of the country.
- **Major Achievement:**
 - AIM's initiatives have played an important contributory role in the advancement of India from a position of **81** in the **Global Innovation Index** in 2015 to a position of **48** in 2020.
- **Focus Area:**
 - Science-based, knowledge-intensive, deep technology entrepreneurship.
- **Launching & Implementing Agency:**
 - AIM has collaborated with **Bill & Melinda Gates Foundation (BMGF)** to launch this nationwide programme which will be implemented by **Venture Centre** - a non-profit technology business incubator hosted by **the Council Of Scientific And Industrial Research–National Chemical Laboratory (CSIR-NCL)**.
- **Beneficiaries:**
 - **Technology developers** (early-stage deep tech start-ups, and scientists/ engineers/ clinicians) with strong science-based deep tech business ideas.
 - Chief Executive Officers and Senior incubation managers of **AIM Funded Atal Incubation Centers** that are supporting deep tech entrepreneurs.
- **Significance:**
 - **Candidates** selected for the programme **will get access to in-depth learning** via a comprehensive lecture series, live team projects, exercises, and project-specific mentoring.
 - They will also **have access to a deep-tech start-up playbook, a curated video library, and plenty of peer-to-peer learning opportunities.**

Note:

Microfinance Institutions

Why in News

Microfinance institutions (MFIs) have urged the Centre to consider prioritising vaccinations for their employees and **self-help group** workers.

- This request is in order to **ensure that lines of credit remain open for the poor** amidst the rising second wave of **Covid-19 infections**.

Key Points

➤ About:

- MFI is an organization that **offers financial services to low income populations**.
 - These services include **microloans, microsavings and microinsurance**.
- MFIs are **financial companies** that provide **small loans to people who do not have any access to banking facilities**.
 - The definition of “small loans” varies between countries. **In India, all loans that are below Rs.1 lakh can be considered as microloans.**
- In most cases the so-called **interest rates are lower than those charged by normal banks**, certain rivals of this concept accuse microfinance entities of creating gain by manipulating the poor people's money.
- Microfinance sector has **grown rapidly over the past few decades** and currently it is serving around **102 million accounts** (including banks and **small finance banks**) of the poor population of India.
- **Different types of financial services providers for poor people** have emerged - non-government organizations (NGOs); cooperatives; community-based development institutions like self-help groups and credit unions; commercial and state banks; insurance and credit card companies; telecommunications and wire services; post offices; and other points of sale - offering new possibilities.
- **Non Banking Finance Company (NBFC)**-MFIs in India are regulated by **The Non-Banking Financial Company -Micro Finance Institutions (Reserve Bank) Directions, 2011** of the **Reserve Bank of India (RBI)**.

➤ Major Business Models:

○ Joint Liability Group:

- This is usually an informal group that consists of **4-10 individuals who seek loans against mutual guarantee**.
- The loans are usually taken for **agricultural purposes or associated activities**.

○ Self Help Group:

- It is a group of individuals with similar socio-economic backgrounds.
- These small entrepreneurs come together for a short duration and create a common fund for their business needs. These groups are classified as non-profit organisations.
 - The **National Bank for Agriculture and Rural Development (NABARD)** SHG linkage programme is noteworthy in this regard, as several Self Help Groups are able to borrow money from banks if they are able to present a track record of diligent repayments.

○ Grameen Model Bank:

- It was the brainchild of **Nobel Laureate Prof. Muhammad Yunus in Bangladesh in the 1970s**.
- It has inspired the creation of **Regional Rural Banks (RRBs)** in India. The primary motive of this system is the end-to-end development of the rural economy.

○ Rural Cooperatives:

- They were established in India at the time of Indian independence.
- However, this system **had complex monitoring structures and was beneficial only to the creditworthy borrowers** in rural India. Hence, this system **did not find the success that it sought initially**.

➤ Benefits:

- They provide **easy credit** and offer small loans to customers, without any collateral.
- It makes **more money available to the poor** sections of the economy, leading to **increased income and employment** of poor households.
- **Serving the under-financed section** such as **women, unemployed people** and those with **disabilities**.
- It helps the poor and marginalised section of the society by making them **aware of the financial instruments available for their help** and also helps in **developing a culture of saving**.

Note:

- Families benefiting from microloans are more likely to **provide better and continued education for their children.**

➤ Challenges:

- **Fragmented Data:**
 - While overall loan accounts have been increasing, **the actual impact of these loans on the poverty-level of clients is not clear** as data on the relative poverty-level improvement of MFI clients is fragmented.
- **Impact of Covid-19:**
 - It has impacted the MFI sector, with collections having taken an initial hit and disbursements yet to observe any meaningful thrust.
- **Social Objective Overlooked:**
 - In their **quest for growth and profitability**, the social objective of MFIs—to bring in improvement in the lives of the marginalized sections of the society—seems to have been gradually eroding.
- **Loans for Non-income Generating Purposes:**
 - The proportion of loans utilized for **non-income generating purposes** could be much higher than what is stipulated by the RBI which is 30% of the total loans of the MFI.
 - These loans are short-tenured and given the economic profile of the customers, it is likely that they soon find themselves in the **vicious debt trap of having to take another loan to pay off the first.**

Crop Diversification

Why in News

Recently, a top agriculture economist has suggested that the best chance of **Crop Diversification** is through **animal agriculture/animal husbandry.**

Key Points

➤ About:

- Crop diversification refers to the **addition of new crops or cropping systems to agricultural production** on a particular farm taking into account the different returns from value-added crops with complementary marketing opportunities.
- **Cropping System:** It refers to the crops, crop sequences and management techniques used

on a particular agricultural field over a period of years.

- **Types:** Major cropping systems in India are sequential-cropping, **monocropping, inter-cropping, relay Cropping, mixed-cropping** and alley cropping.
- Many farmers also use the **mixed crop-livestock system** to increase their standards of living and income.
- Animal husbandry or Animal Agriculture is the branch of science **dealing with the practice of breeding, farming and care of farm animals (livestocks)** such as cattle, dogs, sheep and horses by humans for advantages.
- It refers to **livestock raising and selective breeding.** It is a **branch of agriculture.**

➤ Types:

Type of diversification	Nature of diversification	Potential benefit
Improved structural diversity	Makes crops within the field more structurally diverse	Pest suppression
Genetic diversification in monoculture	Cultivation of mixture of varieties of same species in a monoculture	Disease suppression, Increased production stability
Diversify field with fodder grasses	Growing fodder grasses alongside of food/pulse/oilseed/ vegetable etc.	Pest suppression, opportunity to livestock farming
Crop rotations	Temporal diversity through crop rotations (Sequential cropping)	Disease suppression, Increased production stability
Polyculture	Spatial and temporal diversity of crops (Growing two or more crop species within the field)	Insect, pest disease suppression, climate change buffering and increased production
Agroforestry	Growing crops and trees together (Spatial and temporal diversity)	Pest suppression and climate change buffering
Mixed landscapes	Development of larger-scale diversified landscapes through mixture of crops and cropping system with multiple ecosystems	Pest suppression and climate change buffering
Micro-watershed based diversification	Integration of crop with other farming components for year round income and employment generation, besides sustaining soil and environmental health	Insect, pest and disease suppression, climate change buffering and increased production, employment and income

➤ Benefits:

- **Increase Income on Small Land Holding:**
 - At present, **70-80% farmers have land below 2 hectare.** To overcome this, existing cropping patterns must be diversified with high value crops such as maize, pulses, etc.
 - The Government of Haryana has also supported this by announcing that farmers switching to other alternate crops instead of paddy will be paid Rs. 7000 per acre incentive (**Mera Pani - Meri Virasat** Scheme).

Note:

- **Economic Stability:**
 - Crop diversification **can better tolerate the ups and downs in price of various farm products** and it may ensure economic stability of farming products.
- **Mitigating Natural Calamities:**
 - Sudden adverse weather conditions like erratic rainfall, drought, hail, incidence of insect and pest disease. Under this situation, **crop diversification through mixed cropping may be useful.**
- **Balance Food Demand:**
 - Most of the Indian population suffers from **malnutrition**. Most of the girl children have **anemia**. Including crops like pulses, oilseed, **horticulture**, and vegetable crops can improve socio economic status by adding quality to the food basket and also improve soil health with the aim of food safety and nutritional security.
 - The Government of India has now targeted to increase the area under pulses and oilseeds through **National Food Security Mission (NFSM)**.
- **Conservation:**
 - Adoption of crop diversification **helps in conservation of natural resources like introduction of legume in rice-wheat cropping system**, which has the ability to fix atmospheric Nitrogen to help sustain soil fertility.
 - **Soil Health Card (SHC)** provides information to farmers on nutrient status of their soil along with recommendations on appropriate dosage of nutrients to be applied for improving soil health and its fertility.
- **Challenges:**
 - Majority cropped area in the country is completely **dependent on rainfall**.
 - Sub-optimal and **over-use of resources** like land and water resources, causing a negative impact on the environment and sustainability of agriculture.
 - **Animal agriculture** is the **second largest contributor** to human-made **Greenhouse Gas (GHG)** emissions after fossil fuels and is a leading cause of deforestation, water and air pollution and biodiversity loss.
 - **Inadequate supply of seeds and plants** of improved cultivars.
 - Fragmentation of land holding **less favouring modernization and mechanization of agriculture**.

- **Poor basic infrastructure** like rural roads, power, transport, communications etc.
- Inadequate post-harvest technologies and **inadequate infrastructure for post-harvest handling** of perishable horticultural produce.
- Very **weak agro-based industry**.
- Weak research - extension - farmer linkages.
- **Inadequately trained human resources** together with persistent and large scale illiteracy amongst farmers.
- Host of **diseases and pests** affecting most crop plants.
- **Poor database** for horticultural crops.
- **Decreased investments in the agricultural sector** over the years.
- **Other Related Initiatives:**
 - **Refrigeration System Pusa-FSF**
 - **Sub-Mission on Agroforestry Scheme**
 - **Pradhan Mantri Fasal Bima Yojana**
 - **Mega Food Parks**
 - **Seed-Hub Centres**

Oxygen Crisis: Covid-19

Why in News

The **Liquid Medical Oxygen (LMO)** crisis during the **second wave of Covid surge** has been precipitated by a shortage of tankers and the daunting logistics of transportation from distant locations.

Key Points

- **Liquid Medical Oxygen:**
 - It is high purity oxygen suitable for use in the human body. So, it is used for medical treatments.
 - This oxygen **provides a basis for virtually all modern anaesthetic techniques, restores tissue oxygen tension** by increasing the oxygen availability, **aids cardiovascular stability, etc.**
 - The **World Health Organisation** includes this on their **List of Essential Medicines**.
 - According to the **Drug Prices Control Order, 2013**, LMO is placed under the **National List of Essential Medicines (NLEM)**.
- **LMO Production in India:**

Note:

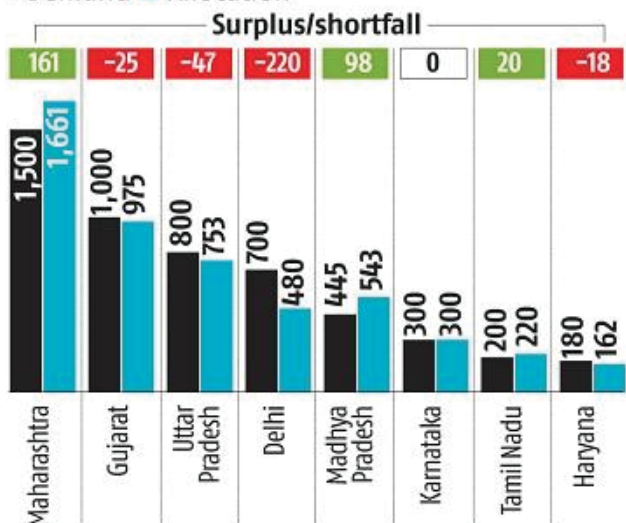


drishti

LINING UP FOR OXYGEN

State-wise oxygen figures, in tonnes/day

■ Demand ■ Allocation



Note: Demand as of April 20

Source: Data compiled by health ministry

- India has a **daily production capacity** of at least **7,100 Metric Tonnes (MT)** of oxygen, including for industrial use.
- Due to the crisis, the production has been increased to **8,922 MT**. And approximately daily sale is **7,017 MT**.
 - The domestic production is expected to **cross 9,250 MT** per day by the end of April 2021.
- Therefore, **India appears to be producing sufficient oxygen** to meet the current need.

Reasons for the Crisis:

- **Distance of Production Plants:**
 - Most of the LMO plants are located in the east, leading to long transportation hauls and a turnaround time of at least 6-7 days for each tanker. Add to this the problem of states holding up tankers on the way.
- **Limited Tankers:**
 - At present, India has 1,224 LMO tankers with a cumulative capacity of 16,732 MT of LMO. This is grossly inadequate because at any given point, there are only 200 tankers in transit to meet a demand of 3,500-4,000 MT.
- **Companies not Buying Cryogenic Tankers:**
 - Cryogenic tankers cost around Rs. 50 lakh each. Companies are not buying these tankers

because once this wave is over, that investment will turn into losses.

- **Cryogenic Tankers:** These are tankers which store medical oxygen at **-180 degrees C**, have double-skin vacuum-insulated containers, including an inner vessel made of stainless steel.

Leakage and Irrational Use:

- In the past, the Health Ministry repeatedly demanded hospitals to reduce **wastage and unnecessary oxygen use in Hospitals**. Industrial experts also raised **concerns over possible leakages in hospital pipelines that supply oxygen**.

- **Black marketing of oxygen cylinders** is another issue.

Government Initiatives:

Oxygen Express:

- Trains to transport LMO and oxygen cylinders across the country have been started to fight the ongoing crisis.

Disaster Management Act 2005:

- The Ministry of Home Affairs **invoked Disaster Management Act, 2005 (DM Act)** and ordered **free inter-state movement of oxygen carrying vehicles**.

Restarting Plants:

- The government is restarting many closed plants to increase the supply of LMO, **for example**, Sterlite plant in Tamil Nadu will be **reopened for 4 months to provide oxygen supply**.

Use of Air Force:

- To speed up the transportation, **Indian Air Force (IAF)** is airlifting empty oxygen tankers and taking them to industrial units that have switched to producing medical grade oxygen.

Oxygen Enrichment Unit (OEU):

- It is developed by scientists of **Council of Scientific and Industrial Research-National Chemical Laboratory (CSIR-NCL)**, and will **help reduce the requirement of ventilators and oxygen cylinders** in homecare, villages and remote places.
- Oxygen enrichment units have special significance in view of the **Covid-19 pandemic**. Patient **recovery can be faster with supplemental oxygen in early stages**.

Note:



drishti

Launch of Supply Chain Resilience Initiative

Why in News

The Trade Ministers of **India**, **Japan** and **Australia** have formally launched the **Supply Chain Resilience Initiative (SCRI)**.

- The **SCRI** aims to create a **virtuous cycle of enhancing supply chain resilience** with a view to eventually attaining strong, sustainable, balanced and **inclusive growth in the Indo-Pacific region**.
- The **trio** (India, Japan and Australia) **along with the US** makes **Quad grouping**.

Key Points

- **Supply Chain Resilience (Concept):**
 - **Meaning:** In the context of international trade, supply chain resilience is an approach that **helps a country to ensure that it has diversified its supply risk across a clutch of supplying nations** instead of being dependent on just one or a few.
 - **Importance:** In **unanticipated events** -whether natural, such as volcanic eruptions, **tsunamis**, **earthquakes** or even a pandemic; or manmade, such as an armed conflict in a region — that **disrupt supplies from a particular country** or even intentional halts to trade, **could adversely impact economic activity in the destination country**.
- **Supply Chain Resilience Initiative:**
 - **Background:**
 - The **Covid-19 pandemic** was having an **unprecedented impact in terms of lives lost, livelihoods and economies affected**, and that the pandemic had **revealed supply chain vulnerabilities globally** and in the region.
 - **About:**
 - **Objectives:**
 - To **attract foreign direct investment** to turn the Indo-Pacific into an “economic powerhouse”.
 - To build a mutually **complementary relationship among partner countries**.
 - To work out a plan to **build on the existential supply chain network**. Japan and India, for

example, have an India-Japan competitiveness partnership dealing with locating the Japanese companies in India.

• Features:

- The **SCRI**, first **proposed by Japan**, aims to **reduce dependence on China** amid a likelihood of reurning of supply chains in the Indo-Pacific region amid the Covid-19 pandemic.
- **Initially**, **SCRI** will **focus on sharing best practices on supply chain resilience and holding investment promotion events** and buyer-seller matching events to provide opportunities for stakeholders to explore the possibility of diversification of their supply chains.
- Joint measures may include **supporting the enhanced utilisation of digital technology and trade and investment diversification**.
- **Expansion of the SCRI** may be considered **based on consensus**, if needed, in due course. The **ministers have decided to convene at least once a year** to provide guidance to the implementation and development of the SCRI.
 1. This **assumes significance in the wake of Japan's keenness to onboard the ASEAN** in the initiative, something that **India has opposed**.
 2. **India wants to safeguard its interests from China's indirect influence through the bloc (ASEAN)** as it builds on its self-reliance through reduced dependence on imports.

➤ Significance to India:

- Following the **border tensions with China**, partners such as Japan have sensed that India may be ready for dialogue on alternative supply chains.
- **China still remains a large source of critical imports for India**, from mobile phone components to pharmaceutical ingredients. An internal push to suddenly cut links with China would be impractical.
- Over time, **if India enhances self-reliance or works with exporting nations other than China**, it **could build resilience into the economy's supply networks**.

Note:

RBI Report on Asset Reconstruction Companies

Why in News

The **Reserve Bank of India (RBI)** in its report on **Asset Reconstruction Companies (ARCs)** said that the **growth of the ARC industry has not been consistent** over time and **not always been synchronous with the trends in Non-Performing Assets (NPAs)** of banks and **Non-Banking Financial Companies (NBFCs)**.

- However, the RBI has **supported the government's proposal for a new ARC**, saying that "such an entity will strengthen the asset resolution mechanism further."

Key Points

- **About the Asset Reconstruction Company (ARC):**
 - It is a **specialized financial institution that buys the Non Performing Assets (NPAs) from banks and financial institutions** so that they can clean up their balance sheets.
 - A **NPA** is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days.
 - This **helps banks to concentrate in normal banking activities**. Banks rather than going after the defaulters by wasting their time and effort, can sell the bad assets to the ARCs at a mutually agreed value.
 - The **Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002** provides the **legal basis for the setting up of ARCs** in India.
 - The Act helps reconstruction of bad assets without the intervention of courts. Since then, a large number of ARCs were formed and were registered with the RBI.
 - RBI has got the **power to regulate the ARCs**.
- **Growth of the ARC Industry:**
 - **Number of ARCs:** The **ARC industry began with the establishment of the Asset Reconstruction Company India Ltd (ARCIL) in 2003**. After remaining **subdued in the initial years** of their inception, a **jump** was seen in the number of ARCs in **2008**, and then in **2016**.
 - **Concentration of Business among Few ARCs:** There has been a concentration in the industry in

terms of Assets Under Management (AUM) and the Security Receipts (SRs) issued.

- **Security Receipts (SR)** are issued by the ARCs when NPAs of commercial banks and/or financial institutions are acquired by the ARCs for the purpose of recovery.
- **AUMs can be measured** with the help of SRs outstanding.
- **Decline in 'Assets Under Management':** The **growth in ARCs' AUM has been largely trendless** except for a major spurt in FY14.
 - The AUM of ARCs has been on a declining trend **when compared with the volume of NPAs of banks and NBFCs**, except during the period of high growth in the AUM around 2013-14.
 - During **2019-20**, **asset sales by banks to ARCs declined**, which could probably be due to **banks opting for other resolution channels** such as **Insolvency and Bankruptcy Code (IBC)** and SARFAESI.
- **Issues with Indian ARCs:**
 - Indian ARCs have been **private sector entities** registered with the Reserve Bank. **Public sector AMCs in other countries** have often enjoyed easy access to government funding or government-backed.
 - The **capital constraints** have often been highlighted as an area of concern for ARCs in India.
 - Despite the regulatory push to broaden, and thereby enhance, the capital base of these companies, they **have remained reliant primarily on domestic sources of capital, particularly banks**.
 - Banks supply NPAs to the ARCs, hold shareholding in these entities and also lend to them, which makes it necessary to monitor if there is a **"circuitous movement of funds between banks and these institutions"**.
- **About the New ARC:**
 - The **movement in asset quality of banks and NBFCs** following the Covid-19 pandemic **could bring ARCs into greater focus and action**.
 - The **ARC proposed in the Budget will be set up by state-owned and private sector banks**, and there will be **no equity contribution from the Centre**.
 - The ARC, which will have an Asset Management Company (AMC) to manage and sell bad assets, **will look to resolve stressed assets of Rs. 2-2.5**

Note:

lakh crore that remain unresolved in around 70 large accounts.

- The introduction of a new ARC for addressing the NPAs of public sector banks **may also shape the operations of the existing ARCs.**
- There is a **definite scope** for the entry of a well-capitalised and well-designed entity in the Indian ARC industry. Such an entity will strengthen the asset resolution mechanism further.
- **Committee on ARCs:**
 - The RBI has announced the setting up of a committee, under the **chairmanship of Sudarshan Sen**, to undertake a comprehensive review of the working of ARCs in the financial sector ecosystem.

MACS 1407: Variety of Soybean

Why in News

Recently, **Indian Scientists** have developed a **high-yielding and pest-resistant variety of soybean**, called **MACS 1407**.

- Scientists from **MACS- Agharkar Research Institute, Pune**, in collaboration with **Indian Council of Agricultural Research, New Delhi** have developed it.

Key Points

- **MACS 1407:**
 - Using the conventional cross breeding technique, scientists developed **MACS 1407** which **gives 39 quintals per hectare** making it a **high yielding variety**.
 - It **requires an average 43 days for 50% flowering** and takes 104 days to mature from the date of sowing.
 - It has white coloured flowers, yellow seeds and black hilum. Its seeds have **19.81% oil content, 41% protein content** and **show good germinability**.
 - Its thick stem, higher pod insertion (7 cm) from ground, and resistance to pod shattering make it suitable even for **mechanical harvesting**.
 - It is **suitable for rain-fed conditions of north-east India**.
 - It is suitable for cultivation in the states of Assam, West Bengal, Jharkhand, Chhattisgarh and North-Eastern states.

- Variety is also **resistant to major insect-pests** like girdle beetle, leaf miner, leaf roller, stem fly, aphids, white fly and defoliators.
- Its seeds will be made available to farmers for sowing during the **2022 Kharif season**.
 - It is highly adaptive to sowing from **20 June to 5 July** without any yield loss. This makes it **resistant to the vagaries of Monsoon** as compared to other varieties.
- **Significance:**
 - In **2019, India produced around 90 million tons of soybean**, widely cultivated as oil seeds as well as a cheap source of protein for animal feed and many packaged meals and is striving to be among the world's major producers of soybean.
 - High-yielding, disease resistant varieties of the legume can help achieve this target.

Kharif Season

- Crops are **sown from June to July** and **Harvesting** is done in between **September-October**.
- **Crops are:** Rice, maize, jowar, bajra, tur, moong, urad, cotton, jute, groundnut, soyabean etc.
- **States are:** Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra.

Rabi Season

- Crops are **sown from October to December** and **Harvesting** is done in between **April-June**.
- **Crops are:** Wheat, barley, peas, gram, mustard etc.
- **States are:** Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh.

Zaid Season

- In between the rabi and the kharif seasons, there is a **short season during the summer months** known as the Zaid season.
- **Crops are:** Watermelon, muskmelon, cucumber, vegetables and fodder crops.

Corporate Social Responsibility Expenditure

Why in News

Experts are calling on the government to ease CSR (Corporate Social Responsibility) regulations to allow corporate **expenditure on vaccinations for employees**

Note:



drishti

and **treatment of employees** suffering from Covid to be **covered** under spending for **CSR**.

- Under **current CSR norms**, companies are **not permitted** to count **expenditure** incurred **exclusively** for the **welfare of employees** as part of their **mandatory CSR expenditure**.

Key Points

➤ Corporate Social Responsibility:

○ Meaning:

- The term “Corporate Social Responsibility” in general can be referred to as **a corporate initiative to assess and take responsibility for the company’s effects on the environment and impact on social welfare**.

○ Governance:

- In India, the concept of CSR is **governed by clause 135 of the Companies Act, 2013**.
 - India is the **first country in the world to mandate CSR spending** along with a framework to identify potential CSR activities.
- The **CSR provisions** within the Act is **applicable to companies with an annual turnover of 1,000 crore and more, or a net worth of Rs. 500 crore and more, or a net profit of Rs. 5 crore and more**.
- The Act **requires companies to set up a CSR committee** which shall recommend a Corporate Social Responsibility Policy to the Board of Directors and also monitor the same from time to time.
- The Act **encourages companies to spend 2% of their average net profit in the previous three years on CSR activities**.

○ CSR Activities:

- The **indicative activities**, which can be undertaken by a company under CSR, have been **specified under Schedule VII of the Act**. The activities include:
 - Eradicating extreme hunger and poverty,
 - Promotion of education, gender equality and empowering women,
 - Combating **Human Immunodeficiency Virus, Acquired Immune Deficiency Syndrome** and other diseases,

- Ensuring environmental sustainability;
- Contribution to the **Prime Minister’s National Relief Fund** or any other fund set up by the Central Government for socio-economic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women etc.

○ Injeti Srinivas Committee:

- A **High Level Committee on CSR** was formed in 2018 under the Chairmanship of Injeti Srinivas.
- The **main recommendations** included making CSR expenditure tax deductible, allowing the carry-forward of unspent balance for a period of 3-5 years, and aligning Schedule VII of the Companies Act with the **United Nations Sustainable Development Goals**.

➤ Recent Development:

- In 2020, the **Ministry of Corporate Affairs allowed companies to spend CSR funds on Covid-19 relief**, including preventive healthcare and sanitation and on research and development of Covid drugs, vaccines and medical devices.
- The **ambit was expanded further this year** to include awareness or public outreach programmes on Covid-19 vaccination and setting up of makeshift hospitals and temporary Covid care facilities.

➤ Benefits of Further Easing CSR Norms:

- **Role in Vaccination Drive:** Approximately, Rs. 10,000 crore is available with listed companies annually for spending on CSR activities. If the eligible unlisted companies are taken into account, the available sum may be larger. This can be handy in supplementing the expenditure of the Centre and States on vaccination.
- **Rural Population can be reachable:** Many of these companies have a presence in rural areas. This will ensure that the drive goes beyond the large cities and reach the rural population too.
- **Benefit of Allowing Corporate Expenditure on Vaccinations for Employees under CSR:** This will boost vaccinations for unorganised labour in the manufacturing sector and will benefit the overburdened healthcare system.



Note:

International Relations

Highlights

- India-Japan
- UK's Indo-Pacific Tilt
- Project Dantak
- The Armenian Genocide
- Kulbhushan Jadhav Case
- Reassessment of Regional Trading Agreements for India
- India in US Currency Practices Monitoring List
- EU & Indo-Pacific
- India-Cuba Relations
- Chad President Idriss Deby Dies
- International Religious Freedom Report 2021
- Boao Forum
- US Supports India in Covid-Crisis
- Post-Brexit Trade Treaty Ratified

India-Japan

Why in News

The Prime Minister in a telephonic conversation with his Japanese counterpart discussed various issues including high technology, skill development and fighting the Covid-19 pandemic together.

Key Points

➤ About:

○ On Covid-19 Situation:

- Highlighted the importance of close India-Japan cooperation to overcome challenges posed by the pandemic, such as by working together to create resilient, diversified and trustworthy supply chains, ensuring reliable supply of critical materials and technologies, and developing new partnerships in manufacturing and skill development.



- In this context, the two leaders emphasized the need for early operationalization of the Specified Skilled workers (SSW) agreement in order to synergize their strengths and achieve mutually beneficial outcomes.
- They also highlighted the Mumbai-Ahmedabad High Speed Rail (MAHSR) project as a shining example of their cooperation.

○ On Cooperation for Indo-Pacific:

- Confirmed the importance of Japan-India bilateral and multilateral cooperation, including Japan-Australia-India-US quadrilateral cooperation, towards realising a free and open Indo-Pacific.

○ On Possible Cooperation in Various fields:

- Like 5G, submarine cables, strengthening of industrial competitiveness, diversification of supply chains and development projects in the northeastern state.

➤ Other Recent Developments Between India and Japan:

- Recently, India, Japan and Australia have formally launched the Supply Chain Resilience Initiative (SCRI) in a move to counter China's dominance of the supply chain in the Indo-Pacific region.
- The SCRI aims to create a virtuous cycle of enhancing supply chain resilience with a view to eventually attaining strong, sustainable, balanced and inclusive growth in the region.
- Japan has finalised loans and a grant totalling around 233 billion yen for several key infrastructure projects in India, including for a project in the Andaman and Nicobar islands.

Note:



drishti

- In **2020**, India and Japan **signed a logistics agreement** that will allow armed forces of both sides to coordinate closely in services and supplies. The agreement is known as the **Acquisition and Cross-Servicing Agreement (ACSA)**.
- In 2014, India and Japan upgraded their relationship to '**Special Strategic and Global Partnership**'.
- The India-Japan **Comprehensive Economic Partnership Agreement (CEPA)** that came into force in **August 2011** covers trade in goods, services, movement of natural persons, investments, Intellectual Property Rights, custom procedures and other trade related issues.
- **Defence Exercises:**
 - India and Japan defence forces organize a series of bilateral exercises namely, **JIMEX** (naval), **SHINYUU Maitri** (Air Force), and **Dharma Guardian** (Army). Both countries also participate in **Malabar exercise** (Naval Exercise) with the USA.

UK's Indo-Pacific Tilt

Why in News

Recently, the British Government said that the **UK Carrier Strike Group's** "globe-spanning maiden deployment will feature **visits to India, Japan, Republic of Korea and Singapore**".

- Earlier, the **European Union had announced** that it will reinforce its strategic focus, presence and actions in the Indo-Pacific with the aim of contributing to the stability, security, prosperity and sustainable development of the region.

Key Points

- **About the UK Carrier Strike Group (CSG):**
 - **CSG:**
 - Carrier strike groups are **often formed for a specific mission rather than by platform**.
 - The carrier is typically **part of a larger formation**, usually including destroyers, frigates and submarines, as well as logistical-support ships.
 - The carrier **provides the primary offensive air power**, while the other vessels provide the wider defence and support role and can also participate offensively, such as with the launch of missile systems.

- **UK CSG:**
 - It will be **led by the aircraft carrier HMS Queen Elizabeth**.
 - It will be a **global deployment**, from the **North Atlantic to the Indo-Pacific**.
 - The **"28-week deployment"** will span **26,000 nautical miles**, and CSG will **undertake over 70 engagements in over 40 nations**.
 - As **part of the UK's tilt towards the Indo-Pacific region**, the CSG will conduct **engagements with Singapore, the Republic of Korea, Japan and India**.
- **UK CSG Deployment in Indo-Pacific:**
 - It will **bolster already deep defence partnerships in the region**, where the UK is committed to a more enduring regional defence and security presence.
 - Engagement in Singapore, the Republic of Korea, Japan and India will **provide the opportunity for strengthening the UK's security relationships, tightening political ties and supporting UK exports and International Trade agenda**.
- **India-UK Ties:**
 - **Political Cooperation:**
 - The bilateral relationship was **upgraded to a strategic partnership** in 2004.
 - The UK has reaffirmed its **support for India's permanent membership of the UN Security Council**.



- **Scope in Economic Cooperation:**
 - **India's skilled labour, technological assistance and the vibrant market** will open a lot of avenues for Britain which has recently parted ways with the European Union.

Note:

- Along with the world, **India is now steering towards 5G**. The UK will need India's help to marginalize China in the telecom market.
- The UK is **one of the largest investors in India**, among the **G20 countries**.
- **Defence Exercises:**
 - **Air Force** Exercise '**Indradhanush**'.
 - **Navy** Exercise **Konkan**.
 - **Army** Exercise: **Ajeya Warrior**.
- **Indo-Pacific: The New Point of Convergence:**
 - With the **UK expanding its footprint in the Indo-Pacific** and **India working toward gaining prominence as the net security provider in the region**, both countries' aspirations and future seem to be **intertwined**.
 - An **area of focus** up ahead should be **to enhance military-to-military interactions**.
 - While there exist service-specific joint training exercises, their pace has not matched with India's exercises with the US.
 - The **lack of foundational agreements** may be acting as a limiting factor as well. While an MoU on joint training is under development, a military logistics agreement is expected to be signed soon.
 - This will give India and the UK reciprocal access to each other's bases and formalize the procedures for receiving and paying for logistic support, such as servicing and refueling.
 - The **UK, with its bases in Kenya, Brunei, Bahrain, Oman, Singapore, and the British Indian Ocean Territory**, is by no means new to the region. Having such an infrastructure already in place will not only aid its ambitions in the region but **also be valuable to its partners**.
 - For **India, access to these bases will augment its reach further** into the Indian Ocean.
 - **Working with other like-minded countries**, such as Japan and Australia, there is great scope for close cooperation in areas of maritime domain awareness and intelligence sharing by leveraging the strength of each other's assets.
 - In this regard, **Japan's initiative** to enhance defence intelligence sharing with India, Australia, and the UK is a significant step.

Project Dantak

Why in News

Recently, **Project DANTAK** which is one of the oldest Projects of the **Border Roads Organisation (BRO)** commemorated its **Diamond Jubilee in Bhutan**.

- Over 1,200 DANTAK personnel laid down their lives while constructing important infrastructure in Bhutan.



Key Points

- **About:**
 - Project DANTAK was **established on 24th April 1961**.
 - It was a result of the visionary leadership of **the third King of Bhutan** and then **Prime Minister of India Jawahar Lal Nehru**.
 - DANTAK was tasked **to construct the pioneering motorable roads**.
- **Achievements:**
 - **Road Connectivity:**
 - Over the years, the Project has completed approximately 1600 km of blacktopped roads and 120 km of tracks in Bhutan with 5000 meters of bridges over them.
 - **Other Projects Executed:**
 - Include the construction of Paro Airport, Yonphula Airfield, Thimphu – Trashigang Highway, Telecommunication & Hydro Power Infrastruc-

Note:



drishti

ture, Sherubtse College, Kanglung and India House Estate.

○ **Medical and Education Facilities:**

- The medical and education facilities established by DANTAK in far flung areas were often the first in those locations.

○ **Food Outlets:**

- The food outlets along the road introduced the Bhutanese to Indian delicacies and developed a sweet tooth in them.

➤ **Indo-Bhutan Relationship:**

○ **Indo-Bhutan Treaty of Peace and Friendship, 1949:**

- The Treaty provides for, among other things, **perpetual peace and friendship, free trade and commerce and equal justice** to each other's citizens.
- In **2007**, the **treaty was re-negotiated**, and provisions were included to encourage Bhutan's sovereignty, abolishing the need to take India's guidance on foreign policy.

○ **Multilateral Partnership:**

- Both of them share multilateral forums such as **South Asian Association for Regional Cooperation (SAARC)**, **BBIN (Bangladesh, Bhutan, India, and Nepal)**, **BIMSTEC (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation)** etc.

○ **Economic Partnership:**

- **Mutually beneficial hydro-power cooperation** with Bhutan forms the core of bilateral economic cooperation.
 - The **720 MW Mangdechhu** was commissioned in August 2019. HEPs namely, 1200 MW Punatsangchhu-I, 1020 MW Punatsangchhu-II and Kholongchhu HEP (600 MWs) are under various stages of implementation.
- **India is Bhutan's largest trading partner.**

Border Roads Organisation

- BRO was **conceived and raised in 1960 by Pandit Jawaharlal Nehru** for coordinating the speedy development of a network of roads in the North and the North Eastern border regions of the country.
- It works **under the administrative control of the Ministry of Defence.**

- It has diversified into a large spectrum of construction and development works comprising airfields, building projects, defence works and tunneling and has endeared itself to the people.

➤ **Some Recent Achievements:**

- **Atal Tunnel:** It is located in Himachal Pradesh's Rohtang pass. It connects Solang Valley near Manali to Sissu in Lahaul and Spiti district.
- **Nechiphu Tunnel:** Foundation stone was laid on the Balipara-Charduar-Tawang (BCT) road in West Kameng district of Arunachal Pradesh.
- **Daporijo Bridge:** It is over Subansiri river in Arunachal Pradesh.
- **Kasowal Bridge:** It is over Ravi river. It connects Kasowal enclave in Punjab along the India - Pakistan border to the rest of the country.
- **Darbuk-Shyok-Daulat Beg Oldie Road:** It connects Leh via the villages of Darbuk and Shyok at southern Shyok River Valley, with the Daulat Beg Oldi (DBO) post near the northern border.
- **Barsi Bridge (longest bridge on Manali-Leh highway):** It is built on Bagga river, which joins with Chandra river at Tandi in Lahaul to flow down into Jammu & Kashmir as the Chenab.

The Armenian Genocide

Why in News

Recently, the **US President** officially recognised the **mass killings of Armenians by Ottoman Turks in 1915-16 as an act of genocide.**

- The Armenian diaspora marks **24th April as Armenian Genocide Remembrance Day.**

Key Points

- **Genocide (Meaning):**
 - According to **Article II of the United Nations (UN) Convention on Genocide of December 1948**, genocide has been described as **carrying out acts intended "to destroy, in whole or in part, a national, ethnic, racial or religious group".**
 - **Raphael Lemkin**, the Polish lawyer, **coined the term "genocide" in 1943.**
- **Armenian Genocide:**
 - The Armenian Genocide is **called the first genocide of the 20th century.**

Note:

- It refers to the **systematic annihilation of Armenians in the Ottoman Empire from 1915 to 1917**.
- After the **First World War** broke out in **November 1914**, the Ottoman Turks participated in the war, siding with Germany and the Austro-Hungarian empire.
- The Ottoman Turks **believed the Armenians would side with Russia** in the war. This resulted in the **Ottoman Turks engaging in a mass-removal campaign of Armenians from the border areas along the Eastern Front**.
- On **24th April, 1915**, **Ottoman Turkish** government officials **arrested and executed thousands of Armenian intellectuals**. It was the **start of the Armenian Genocide**.
- **Armenian families**, including small children, were forced to walk for days without food, water and shelter in the deserts of Syria and Arabia.
- According to estimates, **approximately 1.5 million Armenians died** during the genocide, either in massacres and in killings, or from ill treatment, abuse and starvation.



➤ Significance of this Recognition:

- The acknowledgement by the US government will have **little legal impact on Turkey**, other than becoming a cause for embarrassment for the country and **giving other countries the impetus to also acknowledge the genocide**.
 - According to the Armenian National Institute, **30 countries officially recognise the Armenian Genocide**.

➤ Turkey's Response:

- Such moves would **only set back the already strained relationship between US and Turkey**,

both of whom are **North Atlantic Treaty Organization allies**.

- Ties between the US and Turkey have been strained over a **range of issues** that include Turkey's purchase of Russian **S-400** defence systems, foreign policy differences with regard to Syria, human rights and other intersecting legal issues.

- Turkey has **acknowledged that atrocities were committed against Armenians, but denies it was a genocide** (which comes with legal implications) and challenges the estimates that 1.5 million were killed.

➤ India's Stand:

- India, that has **not formally recognised the Armenian Genocide** has primarily adopted this stance **in the interests of its wider foreign policy decisions and geo-political interests in the region**.
 - India **does not have any domestic law on genocide**, even though it has ratified the **United Nations Convention on Genocide**.
 - This was even observed by the Delhi High Court in **State v. Sajjan Kumar** (2018). The case concerned the mass killing of Sikhs during the anti-Sikh riots in 1984 in Delhi — and throughout the country.

➤ Other Related News to Armenia:

○ Armenia-Azerbaijan Conflict:

- Recently, Russia has brokered a new peace deal between **Armenia and Azerbaijan**. Both countries have been in a **military conflict over the disputed region of Nagorno-Karabakh** in the South Caucasus.
- Nagorno-Karabakh, the centre of the conflict, is located within Azerbaijan but is populated, mostly, by those of Armenian ethnicity (and mostly Christian compared to the Shia Muslim majority Azerbaijan).

Kulbhushan Jadhav Case

Why in News

Pakistan has urged India to appoint a lawyer to represent death row convict Kulbhushan Jadhav to implement the verdict of the **International Court of Justice (ICJ)**.

Note:

Key Point➤ **About the Kulbhushan Jadhav Case:**

- Kulbhushan Jadhav was **sentenced to death by a Pakistani military court** on charges of espionage and terrorism in April 2017.
- India approached the ICJ against Pakistan for **denial of consular access (Vienna Convention)** to Jadhav and challenging the death sentence.
- ICJ ruled in July 2019 that **Pakistan must undertake an "effective review and reconsideration" of the conviction** and sentence of Jadhav, and also **grant consular access to India** without further delay.
 - It had asked Pakistan to provide a proper forum for appeal against the sentence given to Jadhav by the military court.

➤ **Implications of 'Effective Review and Reconsideration' for India:**

- Effective review and reconsideration is a phrase which is different from 'review' as one understands in a domestic course.
- It includes giving consular access and helping Jadhav in preparing his defence.
- It means that **Pakistan has to disclose the charges and also the evidence** which it has been absolutely opaque about uptill now.
- Pakistan **would also have to disclose the circumstances in which Jadhav's confession was extracted** by the military.
- It implies that **Jadhav will have a right to defend** whichever forum or court hears his case.

➤ **Vienna Convention:**

- The **Vienna Convention on Consular Relations** is an international treaty that defines consular relations between independent states.
 - A consul (who is not a diplomat), is a representative of a foreign state in a host country, who works for the interests of his countrymen.
- **Article 36 of the Vienna Convention** states that foreign nationals who are arrested or detained in the host country must be given notice without delay of their right to have their embassy or consulate notified of that arrest.
- If the detained foreign national so requests, the police must fax that notice to the embassy or consulate, which can then verify the detained person.

- The notice to the consulate can be as simple as a fax, giving the person's name, the place of arrest, and, if possible, something about the reason for the arrest or detention.

International Court of Justice

- ICJ is a **principal judicial organization of the United Nations (UN)**. It was established in 1945 by a UN Charter and began working in 1946 as the successor to the Permanent Court of International Justice.
- It **settles legal disputes between member countries** and gives advisory opinions to authorized UN Organs and Specialized Agencies.
- An Indian, Judge Dalveer Bhandari has been a member of the ICJ since April 2012.
- It is **seated in the Peace Palace of Hague, Netherlands**.

Reassessment of Regional Trading Agreements for India

Why in News

Recently, Singapore's Foreign Minister while addressing the 6th edition of the **Raisina Dialogue** suggested India to reassess its stand on **Regional Trading Agreements (RTA)** such as **Regional Comprehensive Economic Partnership (RCEP)** and **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**.

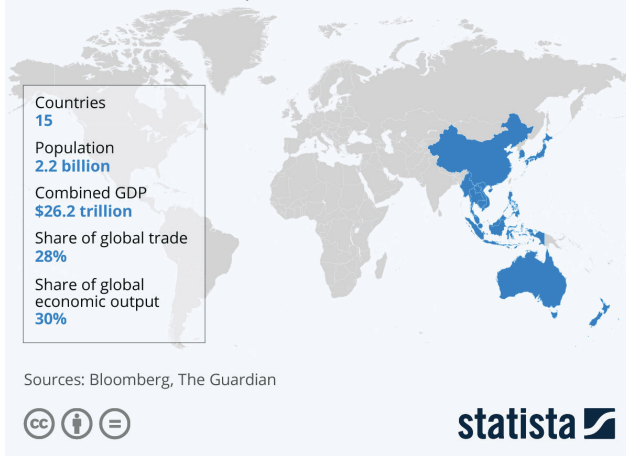
- The **Raisina Dialogue** is India's premier conference on geopolitics and geoeconomics. The conference is **hosted by the Observer Research Foundation in partnership with the Ministry of External Affairs, Government of India**.

Key Points➤ **Regional Comprehensive Economic Partnership:**

- **About:**
 - **RCEP** is the **world's largest Free Trade Agreement (FTA)** and was signed by all 10 **Association of Southeast Asian Nations (ASEAN)** members and key partners including China, South Korea, Japan, Australia and New Zealand at the **4th RCEP leaders' summit in November 2020**.
 - It could be some time before any country sees the benefits, because **six ASEAN nations and three other nations have to ratify it before it takes effect**.

Note:

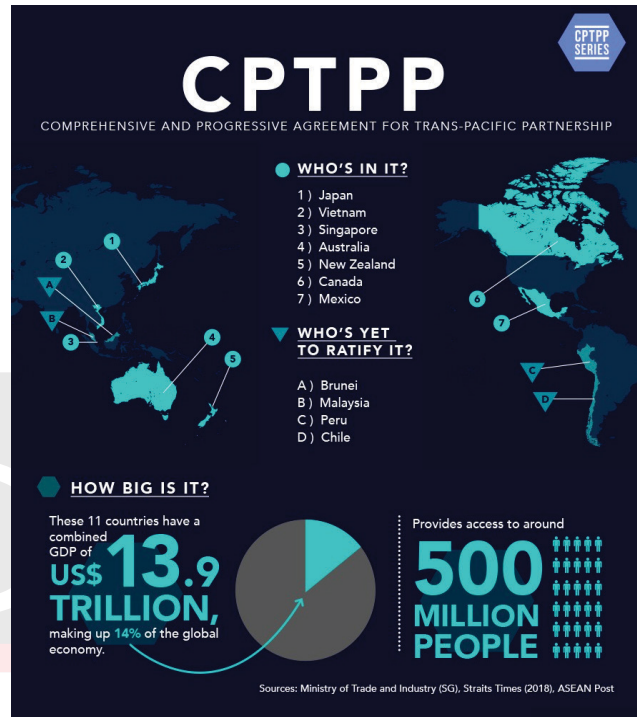
Key facts about the Regional Comprehensive Economic Partnership free trade deal



- Ratification will likely be tricky in national parliaments, owing to both anti-trade and anti-China sentiments among the countries.
- Recently, **Singapore became the first RCEP participating country (RPC) to complete the official ratification process** and deposit its ratification instrument.
- **Significance:**
 - **Eliminate Tariffs:**
 - It is expected to **eliminate a range of tariffs** on imports within 20 years and also includes provisions on intellectual property, telecommunications, financial services, e-commerce and professional services.
 - **Equality:**
 - Under RCEP, parts from any **member nation would be treated equally**, which might give companies in RCEP countries an **incentive to look within the trade region for suppliers**.
 1. Businesses with global supply chains might face tariffs even within an FTA because their products contain components that are made elsewhere.
 - **Increased Global Income:**
 - The deal could **increase global national income by USD 186 billion annually by 2030** and add 0.2% to the economy of its member states.
 - However, some analysts think the deal is likely to benefit China, Japan and South Korea more than other member states.
- **India's Stand:**

- India **withdrew** from the RCEP largely because of **concerns it would open it up to Chinese goods amid an already wide trade imbalance with China**, and the failure of the agreement to adequately open up to services.

➤ Comprehensive and Progressive Agreement for Trans-Pacific Partnership:



○ About:

- The **CPTPP** is a **Free Trade Agreement (FTA)** between **11 countries** around the **Pacific Rim** which are:
 - Canada, Mexico, Peru, Chile, New Zealand, Australia, Brunei, Singapore, Malaysia, Vietnam and Japan.
- After the US withdrew from negotiations of **Trans-Pacific Partnership (TPP)**, the remaining 11 participants scrambled to amend the text of the agreement, and the newly renamed **CPTPP** was signed in **March 2018**.
 - It came into **force in December 2018**.

○ Significance:

- **Removes Tariffs:**
 - The CPTPP removes 99% of tariffs on goods and services, just like the original TPP did.
- **Broad Coverage:**
 - The CPTPP covers a broad range of goods and

Note:



drishti

services. These include financial services, telecommunications, and food safety standards.

- **Reduces Environmental Abuses:**

- All countries agreed to cut down on wildlife trafficking. That helps elephants, rhinoceroses, and marine species the most.
- It prevents environmental abuses, such as unsustainable logging and fishing. Countries that don't comply will face trade penalties.

- **India's Stand:**

- India did not join CPTPP as it seeks to place greater labor and environmental standards on its other partners and CPTPP draft includes narrowly detailed qualifications on standards for investment protection, provisions to protect the host state's right to regulate, and the imposition of detailed transparency requirements.

- **Need for India to Reassess RCEP & CPTPP:**

- **To Boost its Manufacturing Sector:**

- The RCEP & CPTPP blocs represent a major portion of the world economy, which may present India the possibility of being a manufacturing hub and export platform for the Pacific region with access to duty-free, quota free trade.

- **To Strengthen Individual Relations:**

- India already has steady trade relations or is negotiating new agreements with various RCEP & CPTPP countries such as Canada, Mexico, and Chile.

- **To be a Major Player in Regional Development:**

- India has a crucial role to play in helping the region build an inclusive architecture at a time of increasing global instability.
- Besides, rising US-China tensions are "deeply worrying" for the region with the pandemic resulting in "heightened tension".

- **To Provide Indian Companies Better Platforms:**

- Such trade pacts will also give Indian companies a platform to showcase their strengths across even larger markets.

India in US Currency Practices Monitoring List

Why in News

Recently, the United States (US) placed 11 countries,

including India in the **Currency Practices Monitoring List (Currency Manipulators Watch List)**.

- India was on the list in the December 2020 report as well. In 2019, the US Treasury Department had removed India from its currency manipulator watch list of major trading partners.

Key Points

- **Currency Manipulators:**

- This is a label given by the US government to countries it feels are engaging in "unfair currency practices" by deliberately devaluing their currency against the dollar.
- The practice would mean that the country in question is artificially lowering the value of its currency to gain an unfair advantage over others.
- This is because the devaluation would reduce the cost of exports from that country and artificially show a reduction in trade deficits as a result.

- **Currency Manipulator Watch List:**

- The US Department of Treasury releases the semi-annual report where it has to track developments in international economies and inspect foreign exchange rates.

- It reviews currency practices of the US' 20 biggest trading partners.

- **Criteria:**

- An economy meeting two of the three criteria in the Trade Facilitation and Trade Enforcement Act of 2015 is placed on the Watch List. This includes:
 - A "significant" bilateral trade surplus with the US — one that is at least USD 20 billion over a 12-month period.
 - A material current account surplus equivalent to at least 2% of Gross Domestic Product (GDP) over a 12-month period.
 - "Persistent", one-sided intervention — when net purchases of foreign currency totalling at least 2% of the country's GDP over a 12 month period are conducted repeatedly, in at least six out of 12 months.
- Countries that meet all three of the criteria are labeled as currency manipulators by the Treasury.

- **Current List:**

- **Countries on the List:**
 - The other 10 countries on the list with India

Note:



drishti

that merit “close attention to their currency practices” are **China, Japan, Korea, Germany, Ireland, Italy, Malaysia, Singapore, Thailand, and Mexico.**

○ Questionable Chinese Growth:

- The Chinese economic growth in 2020 exceeded that of other large economies but has been driven by the early resumption of manufacturing and increased external demand, especially for medical supplies, personal protection equipment and electronics.
- Questions remain about the continued strength of the Chinese recovery absent a sustained increase in household consumption.
- China’s failure to publish foreign exchange intervention and lack of transparency of its exchange rate mechanism and the activities of state-owned banks warrant close monitoring of renminbi (China’s currency) developments going forward.

➤ India’s Status:

- India met two of the three criteria that is the **trade surplus** criterion and the “**persistent, one-sided intervention**” criterion.

➤ Consequence:

- Inclusion in the list **does not subject to any kind of penalty and sanctions** but it **deteriorates the global financial image** of the country in the financial markets in terms of foreign exchange policies including undervaluation of currencies to gain export advantages.

WHAT IT MEANS...

For India | There will be pressure on RBI to cut down intervention, allow the rupee to appreciate

In terms of restrictions | The tag **does not involve any** kind of trade restrictions



For economy | A stronger rupee would **partially offset** the impact of rising oil prices on imports

For RBI | The central bank can **increase diversification** of its reserves to include non-dollar assets

EU & Indo-Pacific

Why in News

Recently, the **European Union (EU)** approved conclusions on a **European Union strategy for cooperation in the Indo-Pacific.**



- The renewed EU commitment to the Indo-Pacific will have a **long-term focus** and will be **based on upholding democracy, human rights, the rule of law and respect for international law.**
- Indo-Pacific is a **region spanning from the east coast of Africa to the Pacific island states.**

Key Points

➤ Need:

- **Intense geopolitical competition** adding to **increasing tensions on trade and supply chains** as well as in **technological, political and security areas.**
- Human rights are also being challenged. These developments increasingly threaten the **stability and security of the region** and beyond, **directly impacting on the EU’s interests.**

➤ Aim:

- To **contribute to regional stability, security, prosperity and sustainable development** at a time of rising challenges and tensions in the region.
- Promoting **rules-based multilateralism**, giving centrality to **ASEAN (Association of SouthEast Asian Nations)**, a point also stressed by India.

➤ Main Features of the Strategy:

○ Covid-19:

- The EU will work together in order to mitigate the economic and human effects of the **Covid-19 pandemic** and work towards ensuring an inclusive and sustainable socio-economic recovery.

○ Free and Fair Trade:

- The EU’s approach and engagement will look to **foster a “rules-based international order**, a level playing field, as well as an open and fair environment for trade and investment, reciprocity, the strengthening of resilience, tackling

Note:



drishti

climate change and supporting connectivity with the EU.

- On trade partnerships, the EU will aim to **conclude free trade agreements with Australia, Indonesia and New Zealand** and take further steps towards the **Comprehensive Agreement on Investment with China**.
- It will also continue to explore **deepening economic relations with India**.
- **Security and Defence:**
 - It will continue to **develop partnerships in the areas of security and defence**, including to address maritime security, malicious cyber activities, disinformation, emerging technologies, terrorism, and organised crime.
 - It has taken the decision to **extend the geographic scope of its CRIMARIO (Critical Maritime Routes) II activities from the Indian Ocean into South and Southeast Asia** with a view to contribute to safer sea lanes of communication with the EU.
 - **CRIMARIO:**
 1. The EU **Critical Maritime Route Wider Indian Ocean (CRIMARIO)** project was **launched in 2015 to improve maritime security and safety** in the Wider Indian Ocean, with a particular focus on selected countries and archipelagos in East Africa, it aims to support countries in the region to enhance their Maritime Situational Awareness (MSA).
- **Role for India:**
 - Increasing competition, power rivalry, unilateral actions challenging the multilateral order and international laws are some of the **common concerns shared by India and Europe**.
 - With an **enhanced focus on their strategic relations and engagement with other like-minded regional players**, India and EU can play a significant role in preserving an open, free, inclusive and rules based order in the Indo-Pacific.
 - India's recent engagement with European powers in Indo-Pacific:
 - India's **support for France's membership of the Indian Ocean Rim Association (IORA)**.
 - India's backing for a larger European role in the Indo-Pacific. **India has welcomed the interest of Germany and Netherlands** in building a new geopolitical architecture in the Indo-Pacific.

- Some of the **crucial areas that India and EU can work together include** joint efforts in capacity building against challenges like piracy, counter-terrorism etc and cooperation in enhancing interoperability and domain awareness, maritime technologies, **blue economy** etc.

India-Cuba Relations

Why in News

The retirement of Raul Castro as the first secretary of Cuba's ruling Communist Party brings to an **end the six-decade-long rule of the "historic generation"**, who, under the leadership of Fidel Castro, captured power in 1959 through an armed revolution.

- Earlier in January 2021, the **US State Department** had **designated Cuba as a State Sponsor of Terrorism** for repeatedly providing support for acts of international terrorism in granting safe harbour to terrorists.



Key Points

- **History of Cuba:**
 - From the 15th century, it was a **colony of Spain until the Spanish–American War of 1898**, when Cuba was occupied by the United States and gained nominal independence as a de facto United States protectorate in 1902.
 - In 1940, Cuba attempted to strengthen its democratic system, but mounting political radicalization and

Note:

social strife culminated in a **coup and subsequent dictatorship under Fulgencio Batista in 1952.**

- Open corruption and oppression under Batista's rule led to his ousting in January 1959 by the 26th of July Movement, which afterwards established **communist rule under the leadership of Fidel Castro.**
- Since 1965, the state has been governed by the **Communist Party of Cuba.**
- The **country was a point of contention during the Cold War** between the Soviet Union and the United States, and a nuclear war nearly broke out during the **Cuban Missile Crisis of 1962.**
- In 2019, a **new Constitution was approved** which officially recognizes the right to private property, while also reassuring the central government's authority over the regulation of production and land.

➤ **India-Cuba Relations:**

○ **Political:**

- **India** was amongst the first countries to extend **recognition to Cuba after the 1959 Revolution.** Both countries have maintained close contacts with each other in various international fora, such as the **United Nations (UN), Non-Aligned Movement (NAM), World Trade Organization (WTO),** etc.
- India has been supporting Cuba against US supported resolutions at the **UN Human Rights Council** and also consistently voted in favour of Cuban sponsored resolutions in the UN General Assembly calling for lifting of US sanctions against Cuba.
- Cuba **supports India's inclusion as a permanent member in the restructured UN Security Council.**
 - Cuba also **voted in favour of India's candidature for Non-Permanent Seat in UNSC.**
- Cuba has also joined the **International Solar Alliance**, an India-France initiative.

○ **Economic:**

- Bilateral trade between India and Cuba stands at **USD 38.81 Million** (as of 2017).
- India and Cuba agreed to collaborate in the areas of **Biotechnology, Homeopathy** and the **traditional system of medicine** during the visit of the President of India to Cuba in 2019.

- India provides development assistance to Cuba in various sectors, and **in January 2019 made a donation of 60 tractors** with accessories, medicines and medical equipment to the island.

○ **Cultural:**

- In Cuba, Yoga and Vipassana meditation are practiced. Interest in **Ayurveda** and Indian Naturopathy is increasing.
- **Rabindranath Tagore's** birth anniversary is celebrated every year.
 - In May, 2007, a bust of Rabindranath Tagore donated by **the Indian Council for Cultural Relations (ICCR)** was unveiled in Old Havana.
 - There is a bust of Mahatma Gandhi and a statue of **Mother Teresa** in Havana.
- Cuba also celebrated **International Day of Yoga, Mahatma Gandhi's 150th birth anniversary** and 550th anniversary of **Guru Nanak Dev.**

Chad President Idriss Deby Dies

Why in News

Chad's President Idriss Deby has been killed on the frontline against rebels in the north.

- He was battling rebels belonging to the group '**FACT** (the **Front for Change and Concord in Chad**)'.

Key Points

➤ **About Chad's President:**

- The news of his death came only the day after he was proclaimed the winner of a presidential election that had given him a **sixth term in office.**
- He **had been ruling Chad since 1990**, taking power on the back of a coup.
 - His rebel forces overthrew **then-President Hissene Habre**, who was later **convicted of human rights abuses** at an **international tribunal in Senegal.**
- Deby was a **major French ally** in the fight against **Islamic extremism in Africa**, hosting the base for the **French military Operation Barkhane** and supplying **critical troops to the peacekeeping effort in northern Mali.**

➤ **About the Group FACT:**

- The Front for Change and Concord in Chad (FACT),

Note:



drishti

is a political and military organisation in the north of Chad, with the goal of overthrowing the government of Chad.

➤ **Some Locational Aspects of Chad:**



- It is a **landlocked state** in north-central Africa.
- It is named after **Lake Chad**.
 - This is the **second-largest lake in Africa** (after Lake Victoria) and its **basin** covers parts of **Nigeria, Niger, Chad and Cameroon**.
- The **Sahara Desert** roughly covers **one third of the country**.
- The **south** has large expanses of wooded **savannas and woodlands**.
- Chad is also a part of the **Sahel** region.
 - **Sahel** is a **semiarid region** of western and north-central Africa extending from **Senegal eastward to Sudan**.
 - It forms a **transitional zone** between the **arid Sahara** (desert) to the **north** and the belt of **humid savannas to the south**.
- Chad became an **oil-producing nation in 2003**, with the completion of a USD 4bn pipeline linking its oilfields to terminals on the **Atlantic coast**.

➤ **India-Chad Relations:**

- Chad is a member country of **International Solar Alliance (ISA)**, an India-France initiative.
- The country is a member of **TEAM-9 initiative** (Techno Economic Approach for African Movement)

comprising **eight West and Central African countries** seeking to benefit in technical and economic spheres **through cooperation with India**.

- The increase in the **import of Crude Oil from Chad** is the main reason for the **significant increase** in the **bilateral trade** (USD 513.59 million in 2018-19).
- **India** has offered a **Line of Credit of USD 27.45 million** for **establishment of Solar PV Module Manufacturing Plant** at **N'djamena**.
- **India** implemented a **Technical Assistance Programme (TAP)** for **cotton** in six African countries, namely Benin, Burkina Faso, Chad, Malawi, Nigeria and Uganda, from 2012 to 2018.
- Many civilians and Chad public servants have been offered courses and provided **training under ITEC (Indian Technical Economic Cooperation)**.

International Religious Freedom Report 2021

Why in News

The **US Commission on International Religious Freedom (USCIRF)** has recommended for the **second year in the row** to put **India** on a list ('Countries of Particular Concern' or **CPCs**) for the worst violations of religious freedoms in 2020.

- Earlier, the US State Department, in its **2020 Human Rights Report**, pointed out several Human Rights Issues in India.

Key Points

➤ **About the USCIRF:**

- USCIRF is an **independent, bipartisan US federal government commission**, dedicated to defending the universal right to freedom of religion or belief abroad.
- It is an **advisory body to the US Congress**.
- **USCIRF's 2021 Annual Report** assesses religious freedom violations and progress during calendar year 2020 in 26 countries and makes independent recommendations for US policy.
- It is **Headquartered at Washington DC**.

➤ **About the Report:**

- The Report's **primary focus is on two groups of countries:**

Note:

- **“Country of Particular Concern (CPC)”** is a designation by the US Secretary of State of a nation engaged in severe violations of religious freedom under **IRFA (International Religious Freedom Act of 1998)**.
- A **“Special Watch List”** country is one that is deemed not to meet all of the CPC criteria but engages in or tolerates severe violations of religious freedom.
- The Report also includes USCIRF’s recommendations of violent nonstate actors for designation by the US State Department as “entities of particular concern,” or EPCs, under IRFA.
- **Latest Recommendations of USCIRF:**
 - **For the CPC List:**
 - Recommendations for the CPC list are **Russia, Syria and Vietnam and India**.
 - **Countries already on the CPCs list** and recommended by USCIRF for re-designation are Burma, China, Eritrea, Iran, Nigeria, North Korea, Pakistan, Saudi Arabia, Tajikistan and Turkmenistan.
 - **For A Special Watch List:**
 - Afghanistan, Algeria, Azerbaijan, Egypt, Indonesia, Iraq, Kazakhstan, Malaysia, Turkey and Uzbekistan are recommended for a ‘Special Watch List’, along with Cuba and Nicaragua, both of which were already on the list for 2019.
 - **For EPCs:**
 - Recommends **seven non-state actors** for redesignation as “entities of particular concern” (EPCs)—**al-Shabaab, Boko Haram, the Houthis, Hay’at Tahrir al-Sham (HTS), Islamic State in the Greater Sahara (ISGS), Jamaat Nasr al-Islam wal Muslimin (JNIM), and the Taliban**.

India’s Case

- **Areas of Concern Highlighted:**
 - **Passage of the Religiously Discriminatory Citizenship (Amendment) Act, 2019 (CAA):** CAA fast-tracks citizenship for non-Muslim refugees from South Asian countries meeting certain other criteria.
 - **Delhi Riots:** The report mentions the attack that took place on religious minorities during Delhi riots.
 - **National Register of Citizens (NRC):** The consequences of exclusion – as exemplified by a large

detention camp being built in Assam – are potentially devastating.

- **Anti-Conversion Laws:** Despite India’s constitutional protections for religious freedom, **approximately one-third of India’s 28 states limit or prohibit religious conversion** to protect the dominant religion from perceived threats from religious minorities.
- **Disinformation and Incitement of Violence:** Government officials and nonstate actors **continued to use social media and other forms of communication to harass and spread hatred and disinformation** against minority communities, including Muslims, Christians, and Dalits.
 - The **fervor around cow slaughter continues** to take root in policy, in December, the state of Karnataka revised an earlier bill to impose fines and imprisonment for the transport, sale, and purchase of cattle for slaughter.
- **Religious Freedom in Jammu and Kashmir:** In Muslim-majority **Jammu and Kashmir**, restrictions on freedom of movement and assembly negatively impacted religious freedom, including the observance of religious holy days and the ability to attend prayers.
 - The **shutdown of the internet for nearly 18 months**— the longest-ever shutdown in any democracy—and other restrictions on communications caused significant disruption and limited religious freedom.
- **Closing Space for Civil Society:** Government officials used the **Unlawful Activities Prevention Act (UAPA)** and other statutes to detain advocates, media, and academics, including religious minorities.
 - In September 2020, the **FCRA (Foreign Contribution Regulation Act)** was amended to place further restrictions on NGOs, including reducing the amount of foreign funds that could be used for administrative expenses and requiring that accounts be held in a government-designated bank.
- **Recommendations of USCIRF:**
 - It has recommended the US administration to **impose targeted sanctions on Indian individuals and entities** for ‘severe violations of religious freedom’.
 - Condemn ongoing religious freedom violations and support religious organizations and human

Note:



rights groups being targeted for their advocacy of religious freedom.

- The US administration **should promote inter-faith dialogue and the rights of all communities at bilateral and multilateral forums** “such as the ministerial of the **Quadrilateral (the Quad)**.”
- The US Congress should **raise issues in the US-India bilateral space**, such as by hosting hearings, writing letters and constituting Congressional delegations.

Freedom of Religion in India

- Freedom of religion in India is a **fundamental right guaranteed by Article 25-28** of the Constitution of India.
 - **Article 25** (Freedom of conscience and free profession, practice and propagation of religion).
 - Article 26 (Freedom to manage religious affairs).
 - Article 27 (Freedom as to payment of taxes for promotion of any particular religion).
 - Article 28 (Freedom as to attendance at religious instruction or religious worship in certain educational institutions).
- Further, **Article 29 and 30** of the Constitution deal with the protection of interest of minorities.

Boao Forum

Why in News

The opening ceremony of the **Boao Forum for Asia (BFA) Annual Conference 2021** was recently held in Boao, south China's Hainan Province.

- The BFA, this year, is celebrating its **20th Anniversary**.

Key Points

- **About BFA Annual Conference 2021:**
 - The forum witnessed **more than 2500 participants coming from more than 60 countries**. This year's **theme** is 'A World in Change: Join Hands to Strengthen Global Governance and Advance Belt and Road Cooperation'.
 - The **main agenda** is to strengthen mutual understanding in the post-pandemic era, create additional incentives for overall socio-economic growth and effective global governance.
 - An **annual report on Asian Economy** was released on the occasion which highlighted the importance

of Asian economies which have fared well despite the ongoing pandemic.

- In terms of **purchasing power parity**, Asia's share in the global economic aggregate in 2020 reached 47.3%, up 0.9 percentage points from 2019.
- It showed that the economic integration of all Asian economies is accelerating.
 - Signing of **Regional Comprehensive Economic Partnership Agreement (RCEP)** has been injecting strong momentum into regional and global economic growth. **India is not a part of RCEP**.

➤ About Boao Forum:

- The **Boao Forum for Asia (BFA)** is an **international not for profit organization** which was **jointly initiated by 26 member states in 2001**, the **members have now increased to 29**.
 - **India is also a member of the BFA**.
- Its **annual conference** is held in **Boao, Hainan province of China** on a regular basis.
- The establishment of BFA is modelled on the lines of the **World Economic Forum** which bases its annual meeting in **Davos-Klosters, Switzerland**. Thus earning the name of '**Davos of the East**'.
- The founding purpose of BFA was to **promote economic integration in Asia**. Its mission now is to **pool positive energy for the development of Asia and the world**.
- The forum has not only played a unique role in **pooling consensus and putting forward valuable "Boao proposals,"** but also engaged countries in **addressing global issues** and promoting world development and prosperity.
- Its **five focal areas** include **technology innovation, health, education, culture and media** in response to the new economy.

US Supports India in Covid-Crisis

Why in News

Recently, the Prime Minister of India and US President had a telephone conversation with assurances exchanged on smoothening **out issues related to supply chains for vaccines** for **Covid-19**.

Note:



drishti

- The telephone call came in the **background** of not just flagging supply chain issues with the US with regard to vaccines but also the **lack of certain resources in India to fight the pandemic**, as the country has been hit by exponentially rising cases and deaths.
- Earlier in 2020, **India and the US planned to work together** on vaccine research and testing for Covid-19.

Key Points

- **Bilateral Discussion:**
 - India discussed its initiative at the **World Trade Organisation (WTO)** for a relaxation in the norms of the agreement on **Trade Related Aspects of Intellectual Property (TRIPS)** to ensure quick and affordable access to vaccines and medicines for developing countries.
 - The **1995 agreement on TRIPS** is a key legal instrument that **harmonises Intellectual Property (IP) protection** by imposing binding obligations on member countries to ensure a minimum level of protection and enforcement of IP rights in their territories.
 - IP rights **could hinder the supply of vaccines and drugs at affordable prices.**
 - India also mentioned its commitment to contain the Covid-19 pandemic globally through **Vaccine Maitri**, and its participation in **COVAX** and the **Quad Vaccine Initiatives**.
 - Both discussed the Covid-19 situation in their respective countries, including India's ongoing efforts to contain the **second wave of Covid-19** through expedited vaccination efforts, and ensuring supply of critical medicines, therapeutics and health care equipment.
- **Recent Developments in the Relations:**
 - India-US ties were **elevated to "comprehensive global strategic partnership"** in 2020.
 - India and the US signed the **Basic Exchange and Cooperation Agreement for Geo-Spatial Cooperation (BECA)**, with which the two countries have inked all the all four foundational agreements to bolster defence ties.
 - Among the **many highlights** are deepening government-to-government dialogues, shared vision of the Indo-Pacific, regional cooperation, defence and security ties, and ability to respond to unexpected challenges.

- **India's Request:**
 - Emphasized the **need to ensure smooth and open supply chains of raw materials** and inputs required for manufacture of vaccines, medicines, and therapeutics related to Covid-19.
 - **Requested for supply of seven essential items** that it needs on an urgent basis. These are **oxygen concentrators, oxygen cylinders, oxygen generators, oxygen generation plants, remdesivir, favipiravir, and tocilizumab.**
- **US' Steps:**
 - It has **diverted its pending orders** of vaccine filters to India's vaccine manufacturers. It will **help India make more vaccines.**
 - It has **identified sources of specific raw material** urgently required for Indian manufacture of the **Covishield** vaccine that will immediately be made available for India.
- **Other Countries Helping India:**
 - **Singapore** has donated four cryogenic oxygen tanks to India.
 - The **United Kingdom** has announced that it will ship over "600 pieces of vital medical equipment" to help India fight Covid19.
 - **Australia** has announced that it will send oxygen, ventilators and Personal Protective Equipment (PPE) kits to India as part of an immediate support package.
 - **Saudi Arabia** is shipping 80 metric tonnes of liquid oxygen to India.
 - **Germany** is preparing a "mission of support" for India.
 - **Russia** had also announced that it would send 3,00,000-4,00,000 units of Remdesivir injection. It is also planning to send Covid-19 assistance including oxygen concentrators, generators, and drugs needed to treat the disease.
 - **China** has also announced that it would provide support and help based on India's needs.

Post-Brexit Trade Treaty Ratified

Why in News

The **European Parliament** has ratified the **post-Brexit trade deal** between the **European Union** and the United Kingdom (UK).

Note:



drishti

- The **EU–UK Trade and Cooperation Agreement (TCA)** is a free trade agreement signed in December 2020, between the EU, the European Atomic Energy Community (Euratom) and the United Kingdom (UK).
- The deal was ratified nearly five years after Britain decided to leave the European Union. It has **already been ratified by the UK Parliament**.

Key Points

- **About the Trade and Cooperation Agreement (TCA):**
 - **Provisionally Enacted:** This deal was **provisionally enacted in January 2020** in order to minimize trade disruptions between the EU and the UK.
 - Provisional approval was set to expire on 30th April 2021, so the European Parliament's ratification ensures that the flow of trade between the EU and the UK will continue uninterrupted.
 - **Key Provisions:**
 - **Level Playing Field:** It essentially means that in order to trade with the EU's single market, the UK will have to follow the same rules and regulations to ensure that it does not have an unfair advantage over other EU businesses.
 - **Rules of Governance:** These will dictate how any deal is enforced as well as the penalties that will be imposed if one party violates the terms of a mutually-approved agreement.
 - **Fishing Rights:** The agreement gives free access to EU fleets to fish in UK waters, including up



to six miles off the shoreline for a five-year transition period. At the end of the transition, everything will return to normal arrangements and the UK will have full control over its waters.

- **Framework for Policing:** It also provides for a framework governing law enforcement matters, which will allow UK and EU policing agencies to coordinate in the future.
- Agreement addresses other key aspects of international trade, including **intellectual property protections** and **road transportation provisions**.
- **Limitations:**
 - The important sectors of the UK economy, such as **legal and financial services**, were **left unaddressed**.
 - Currently, legal and financial service companies based in the UK are subject to the same restrictions as other firms outside of the EU.
- **European Union (EU) and United Kingdom (UK):**
 - The United Kingdom is an island nation in northwestern Europe.
 - It is made up of **England, Scotland, Wales** and **Northern Ireland**.
 - The United Kingdom **borders one European Union member state: Ireland**.
 - Relations between the EU and the United Kingdom of Great Britain and Northern Ireland (UK) date back to the foundation of the European Communities (EU predecessor) in 1957.
 - The UK was a member state of the European Union after joining it in 1973, until it became the first country to voluntarily end its membership on 31st January 2020 after a referendum was held in 2016.
- **North Ireland Issue:**
 - Geographically, Northern Ireland is part of Ireland. Politically, it's part of the UK.
 - Northern Ireland is the **only part of the UK that has a border with an EU nation**, Ireland. It has been called the "problem child" of **Brexit**.
 - An open Irish border, over which people and goods flow freely, underpins the peace process, allowing people in Northern Ireland to feel at home in both Ireland and the UK.
 - The insistence of Britain's government on a "hard

Note:

Brexit” that took the country out of the EU’s economic order meant the creation of new barriers and checks on trade.

- Both Britain and the EU agreed that the border could not be in Ireland because of the risk that would pose to the peace process.

- The alternative was to put it, metaphorically, in the Irish Sea between Northern Ireland and the rest of the UK.
- That arrangement has alarmed British unionists, who say it weakens Northern Ireland’s place in the UK and could bolster calls for Irish reunification.

■ ■ ■



Note:

Science and Technology

Highlights

- CSF and Sheep Pox Vaccine
- Harlequin Ichthyosis: Rare Genetic Disorder
- Multisystem Inflammatory Syndrome in Children
- Monkeydactyl: Pterosaur Species
- Initiatives of National Internet Exchange of India
- Whitest Ever Paint Reflects 99% of Sunlight
- Baikal-GVD Telescope
- Support Centre for Aditya-L1
- NASA's Ingenuity Mars Helicopter
- Chimera Research: Human Cells in Monkey Embryos
- Brucellosis
- Crew-2 Mission
- Reasons for Rising Covid-19 Infections: Second Wave
- Ct Value: Covid-19 Test
- China's Permanent Space Station

CSF and Sheep Pox Vaccine

Why in News

The **ICAR-Indian Veterinary Research Institute (IVRI)** has transferred the technology for **Classical Swine Fever (CSF) & Sheep Pox Vaccines** to an animal healthcare company Hester Biosciences.

- The technology was **transferred through state-owned Agrinnovate India (AgIn)**, which aims to work on the strengths of the Indian Council of Agricultural Research (ICAR).
 - AgIn promotes the development and spread of R&D outcomes through **IPR(Intellectual Property Right)** protection, commercialization and forging partnerships both in the country and outside for the public benefit.

Key Points

- **Classical Swine Fever (CSF):**
 - **About the Disease:**
 - **CSF**, also known as **hog cholera**, is an important **disease of pigs**.
 - It is **one of the most economically-damaging pandemic viral diseases of pigs** in the world.
 - It is caused by a virus of the **genus Pestivirus** of the **family Flaviviridae**, which is closely related to the viruses that cause **bovine viral diarrhoea in cattle** and **border disease in sheep**.

■ Mortality is 100%.

○ About the Vaccine Developed in India:

- In India, the disease is controlled by a **lapinized CSF vaccine** (Weybridge Strain, UK) produced by **killing large numbers of rabbits**.
 - Lapinization means serial passage of a virus or vaccine through rabbits to modify its characteristics.
- To avoid this, the **ICAR-IVRI developed a Cell Culture CSF Vaccine** (live attenuated) using the Lapinized Vaccine Virus from foreign strain.
- The **new vaccine has been found to induce protective immunity from day 14** of the Vaccination **till 18 Months**.

➤ **Sheep Pox:**

○ **About the Disease:**

- It is a **severe viral disease in Sheep** and its virus is **closely related to the Goat (capripoxviruses)**.
- The virus is **also related to the virus of lumpy skin disease**.
- The disease is very serious, often fatal, characterized by widespread **skin eruption**.
- It is **confined to parts of southeastern Europe, Africa, and Asia**.

○ **About the Vaccine Developed in India:**

- A **live attenuated Sheep Pox Vaccine** using **indigenous strain** was developed by the **ICAR-IVRI** for preventive vaccination in the sheep population.

Note:

- The developed Vaccine uses **indigenous Sheep Pox Virus Strain (SPPV Srin 38/00)** and is adapted to grow in the **Vero cell** line which makes the Vaccine production to be easily scalable.
- It is potent and immunogenic for sheep aged **more than 6 months** of age. It protects the Vaccinated animals for a **period of 40 months**.

Cell Culture

- Cell culture is the **process by which cells are grown under controlled conditions, generally outside their natural environment** in especially designed conditions and precise conditions of temperature, humidity, nutrition, and freedom for contamination.
- Cultured cells are excellent hosts for the propagation of many types of viruses. The ability of cell culture systems to produce large quantities of attenuated viral particles has **served as the basis for the production of both human and veterinary vaccines**.

Vero Cell

- **Vero cells are lineages of cells used in cell cultures.** The Vero lineage was isolated from kidney epithelial cells extracted from an African green monkey.
- Vero cells are used for many purposes, including,
 - Screening for the toxin of Escherichia coli, first named "Vero toxin".
 - As host cells for growing viruses.
- The Vero cell lineage is **continuous and aneuploid**.
 - A continuous cell lineage can be replicated through many cycles of division and not become senescent (i.e. not deteriorates with age).
 - Aneuploidy is the characteristic of having an abnormal number of chromosomes.

Live-attenuated Vaccines

- **Live vaccines** use a **weakened (or attenuated)** form of the germ that causes a disease.
- Because these vaccines are so similar to the natural infection that they help prevent, they create a strong and long-lasting immune response.
 - Just one or two doses of most live vaccines can give one a lifetime of protection against a germ and the disease it causes.
- The limitation of this approach is that these vaccines usually **cannot be given to people with weakened immune systems**.

- Live vaccines are used against: **Measles**, mumps, rubella (MMR combined vaccine), Rotavirus, Smallpox among others.

Harlequin Ichthyosis: Rare Genetic Disorder

Why in News

Recently, **Odisha reported its first-ever case of a baby born with Harlequin Ichthyosis**, a rare genetic skin condition.

- **India's first recorded case** of a baby born with harlequin ichthyosis **was in 2016**, at a private hospital in Nagpur, Maharashtra.

Key Points

- **About:**
 - **Harlequin Ichthyosis** is a rare **genetic skin disorder** to a newborn infant.
 - It's a type of ichthyosis, which refers to a group of disorders that cause persistently dry, scaly skin all over the body.
 - It is inherited in an **autosomal recessive pattern**.

Autosomal Recessive Pattern

- Autosomal (that means inherited) Recessive Pattern is a way, where a **genetic trait or condition can be passed down from parent to child**.
- A genetic condition **can occur when the child inherits one copy of a mutated (changed) gene from each parent**.
- If an individual receives one normal gene and one abnormal gene for the disease, the person will be **a carrier for the disease**.
- The risk to have a child who is a carrier, like the parents, is 50% with each pregnancy. The chance for a child to receive normal genes from both parents is 25%. The risk is the same for males and females.

- **Causes:**
 - It can be **caused by changes (mutations) in the ABCA12 gene**.
 - ABCA12 Gene **gives instructions for making a protein that is necessary for skin cells to develop normally**.

Note:

- It plays a key role in the transport of fats (lipids) to the most superficial layer of the skin (epidermis), creating an effective skin barrier.
- When this gene is mutated, the skin barrier is disrupted.
- **Impact:**
 - Newborn infants **are covered with plates of thick skin** that crack and split apart and can **restrict breathing and eating**.
 - Premature birth is typical, leaving the infants at risk for complications from early delivery.
- **Affected Population:**
 - It affects males and females in equal numbers.
 - It affects **approximately one in 5,00,000 persons**.
 - There are around 250 such cases across the world.
- **Treatment:**
 - A newborn with Harlequin ichthyosis **requires neonatal intensive care**, which may include spending time in a heated incubator with high humidity.
- **Related Disorder:**
 - **Lamellar ichthyosis** is an inherited skin disorder characterized by broad, dark, plate-like scales separated by deep cracks.
 - Its symptoms are similar to Harlequin Ichthyosis.

Multisystem Inflammatory Syndrome in Children

Why in News

Recently, doctors in the United States have reported neurological symptoms in children with Multisystem Inflammatory Syndrome in Children (MIS-C).

Key Points

- **Multisystem Inflammatory Syndrome in Children (MIS-C):**
 - MIS-C is a rare but severe **hyperinflammatory condition in children and adolescents** that typically occurs 2-6 weeks after a **Covid-19** infection.
 - It is a **potentially deadly condition** where **different body parts can become inflamed**, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs.

- Children with MIS-C **may have a fever and various symptoms**, including abdominal (gut) pain, vomiting, diarrhea, neck pain, rash, bloodshot eyes, or feeling extra tired.
- **MIS-C with Neurological Complications:**
 - In a recent study, **young people with the MIS-C syndrome have shown neurological issues** which were life-threatening such as strokes or severe encephalopathy (any brain disease that alters brain function or structure).
 - Neurological symptoms include hallucinations, confusion, speech impairments, and problems with balance and coordination.
 - The new findings **strengthen the theory** that the syndrome is related to a surge of inflammation triggered by an immune response to the virus.
- **Causes of MIS-C:**
 - As the Syndrome is less researched, there are varied theories as to what causes MIS-C.
 - While some researchers believe that MIS-C is a **delayed response to the coronavirus** which in turn causes massive inflammation in the body and as a result damages organs.
 - Some believe that it **can also be a result of the children's immune response making antibodies against the virus**.
 - There **may be a genetic component as not every child develops MIS-C** and the presenting symptoms are so varied.
- **Treatment:**
 - It involves symptomatic relief such as supportive care or use of various medicines to treat inflammation.

Monkeydactyl: Pterosaur Species

Why in News

The new pterosaur fossil was discovered in the Tiaojishan Formation of Liaoning, China, and is thought to be 160 million years old.

- It has been named **Kunpengopterus antipollicatus**, also dubbed "Monkeydactyl".

Key Points

- **About Pterosaurs:**

Note:

Tiaojishan Formation

- Geographically, the Tiaojishan Formation is **widely distributed in western Liaoning Province and the neighboring northern Hebei Province (China).**
- This formation is lithologically **composed** of intermediate lava and pyroclastic rocks, inter-layered with basic volcanic rocks and sedimentary deposits.
- It contains **abundant and well-preserved fossil plants**, including leaves, seeds and fruits, permineralized rhizomes and wood.



- The pterosaur species were **reptiles**, close cousins of dinosaurs and the **first animals after insects to evolve powered flight.**
- They evolved into **various species**, while some were as large as an F-16 fighter jet, others were as small as paper airplanes.
- They **flourished** during all periods (**Triassic, Jurassic, and Cretaceous**) of the **Mesozoic Era** (252.2 million to 66 million years ago).
- **About the Monkeydactyl Fossil (Kunpengopterus antipollicatus):**
 - “**Antipollicatus**” in ancient Greek means “**opposite thumbs**”, and it was attached to the name because

the researchers’ findings **could be the first discovery of a pterosaur with an opposed thumb.**

- It could likely be the **earliest-known instance of the limb.**
- It is **far older than the one identified in 2019.**
 - Paleontologists had identified that species as a **pterosaur that lived over 77 million years ago** in what is **Western Canada** today.
 - Named **Cryodrakon boreas**, it was believed to be one of the largest flying animals, which “flew over the heads of dinosaurs”, with a wingspan of **over 10 metres.**
- **Opposability of the Thumb:**
 - **About:**
 - Opposability of the thumb is defined as being able to “**simultaneously flex, abduct and medially rotate the thumb**” in a way that one is able to bring the tip of the thumb to touch the tips of the other fingers.
 - Along with humans, some ancient monkeys and apes also had opposable thumbs.
 - Humans, however, have a **relatively longer and distally placed thumb**, and larger **thumb muscles.**
 - This means that humans’ tip-to-tip precision grip when holding smaller objects is superior to non-human primates. This is the reason that humans are able to **hold a pen, unscrew an earring stopper, or put a thread through a needle hole.**
 - **Monkeydactyl and Opposability of the Thumb:**
 - The research team scanned the fossil of *K. antipollicatus* using micro-computed tomography (micro-CT), a technique making use of X-ray to image an object.
 - By studying its forelimb morphology and musculature, they suggest that *K. antipollicatus* could have used its hand for grasping, which is likely an adaptation for **arboreal life** (living in trees).
 - The grasping hands of primates developed as a result of their life in the trees — an opposable thumb made it easier for the common ancestor of all primates to cling on to tree branches.

Note:

Initiatives of National Internet Exchange of India

Why in News

Recently, the **Ministry of Electronics and Information Technology (MeitY)** has inaugurated **three new initiatives/services of National Internet Exchange of India (NIXI)**.

- **IP Guru, NIXI Academy, NIXI-IP-INDEX** have been launched to facilitate adoption of IPv6 and create an environment to ensure smooth transition from IPv4 to IPv6.

Key Points

➤ About the National Internet Exchange of India (NIXI):

- NIXI is a **not-for-profit organization (section 8 of the Companies Act 2013)** working **since 2003** for **spreading the internet infrastructure** to the citizens of India through the following activities:
 - **Internet Exchanges** through which the internet data is exchanged amongst Internet Service Providers (ISP's), Data Centers and Content Delivery Network (CDNs).
 - **.IN Registry, managing and operation of .IN country code domain** and **.BHARAT IDN** (Internationalized Domain Name) domain for India.
 - **Indian Registry for Internet Names and Numbers (IRINN)**, managing and operating **Internet Protocol (IPv4/IPv6)**.

➤ About the Three New Initiatives:

- **IPv6 Expert Panel (IP Guru):**
 - It is a **group to extend support to all the Indian entities** who are finding it technically challenging to **migrate and adopt IPv6**. It will be **offering its services free of cost**.
 - It's a joint effort of the Department of Telecom (**DOT**), **MeitY** and industry.
- **NIXI Academy:**
 - NIXI Academy is created **to educate technical/non-technical people** in India to learn and relearn technologies like IPv6 which are normally not taught in Educational Institutes.
 - Successful candidates (after passing examination) **can take a certificate from NIXI**, which will be useful to find/upgrade jobs in the Industry.

○ NIXI-IP-INDEX:

- NIXI has developed an **IPv6 index portal** for the Internet community.
- NIXI-IP-INDEX portal will **showcase the IPv6 adoption rate in India and across the world**. It can be used to compare IPv6 Indian adoption rate with other economies in the world.
- It will also include **details about web adoption in IPv6, IPv6 traffic etc.**

Transition from IPv4 to IPv6

- **IP:** 'IP' stands for 'Internet Protocol'. It is a **set of rules** that dictate how data should be delivered over the public network (Internet).

➤ IPv4:

- IPv4 was the first major version of IP. It was deployed for production in the ARPANET in 1983.
- It is the most widely used IP version. It is used to identify devices on a network using an addressing system.
- The IPv4 **uses a 32-bit address scheme**. Till date, it is considered the primary Internet Protocol and carries 94% of Internet traffic.
- It provides an **addressing capability of approximately 4.3 billion addresses**.

➤ IPv6:

- It is the **most recent version of the Internet Protocol**. The Internet Engineer Task Force initiated it in early 1994. The design and development of that suite is now called IPv6.
- This new IP address version is being deployed to fulfill the need for more Internet addresses.
- IPv6 is **also called IPng (Internet Protocol next generation)**.
- It has the **capability to provide an infinite number of addresses**.
- With **128-bit address space**, it allows 340 undecillion unique address space. It can easily accommodate the growing number of networks worldwide and help solve the IP address exhaustion problem.

➤ Benefit of Transitioning to IPv6:

- The most well-known benefit that IPv6 offers is the **exponential address space**, practically inexhaustible in the foreseeable future. Therefore, it allows **simple, seamless, and cost-effective connectivity** for service providers, enterprises and end-users.

Note:

- It is considered especially important with the impending move to **5G**, which will massively increase the total number of devices connecting to the Internet.
- The IPv6 operating systems **automatically create two IPv6 addresses**. One IPv6 with randomised MAC address in the suffix to hide the device identity and another IPv6 with real MAC address which is only used for end-to-end encrypted applications.
- IPv6 has a **privacy protocol** to protect end-user privacy. The current internet (v4) lacks effective privacy and effective authentication mechanisms.
- **Importance for India:**
 - The sustainable development and evolution of internet infrastructure is **essential to the global cyberspace and digital economy**, and IPv6 root server, which controls and manages the internet, can serve as a great tool.
 - Creating such critical infrastructure at the national level is important. As a critical internet resource, the IPv6 root server system is **pivotal to manage the security and stability of the internet**.
 - It will **contribute to in-country expertise building on critical information infrastructure** as well as promoting 'a major technological knowledge base within the country', and having a root server within the country would facilitate surveillance by Indian legal authorities.

Whitest Ever Paint Reflects 99% of Sunlight

Why in News

The team of **researchers from Purdue University** have created an **ultra-white paint**.

- The newer paint is whiter and keeps the surface areas it is painted on cooler and thus can act as a breakthrough in **combating the woes of global warming**.

Key Points

- **About:**
 - The new ultrawhite white paint **reflects 99% of all light** that hits it, remaining significantly cooler than the ambient temperature, even when sitting in full sunlight.

- **Typical commercial white paint gets warmer** instead of cooler and paints currently available in the market reflect only 80-90% of the sunlight and therefore, they can't make surfaces cooler than their surroundings.
- **Older formulations of white paints were made of calcium carbonate**, while the **new one is made up of barium sulphate** making it more white.
 - Barium Sulphate is used to make photo paper and cosmetics white. Different sized particles of this chemical compound, helps in scattering different amounts of light. This allows for light to scatter in a broad range, resulting in the highest reflectance.
- The paint **could be the closest equivalent to the blackest black paint Vantablack**, which is able to absorb 99.9% of visible light.
 - Vantablack has a diverse range of applications including high performance infrared cameras, sensors, satellite borne calibration sources etc.
 - Its ability to absorb light energy and convert it to heat is also of relevance in solar power development.
- **Reflection or Absorption of a Light by a Color:**
 - Every object is seen by the eye because of absorption or reflection of light.
 - The **light is made up of seven different colours (Violet, Indigo, Blue, Green, Yellow, Orange and Red or VIBGYOR)**. Specifically, light is made up of wavelengths of different colours.
 - The **colour of any object or thing is determined by the wavelength the molecules are not able to absorb**.
 - This is **dependent on how electrons are arranged in an atom** (the building block of life, an atom is made up of electrons, protons and neutrons).
 - For example, if an individual is looking at a sofa that is green, this is because the fabric or material it is made up of is able to absorb all the colours except green (reflect the green coloured wavelengths).
 - If **an object is black**, it is because it has absorbed all the wavelengths and therefore no light is reflected from them.
 - This is the **reason that darker objects**, as a result absorbing all wavelengths **tend to heat**

Note:

up faster (as during absorption the light energy is converted into heat energy).

➤ **Significance:**

- The new paint technology will help buildings covered by this paint to be cooler for longer, eliminating the effects of **Urban Heat Island**.
 - The paint could help in the **fight against global warming** by reducing our reliance on electrically powered air conditioning.
 - As **Air conditioning** injects heat into Earth's atmosphere in multiple ways, including pushing hot air out of buildings, the heat of running the machines, and the usually fossil fuel-generated electricity that runs them that contributes to carbon dioxide emissions.
 - It can not only prevent heat-related deaths and illnesses but also limit water quality depletion that is caused by heated ground.
- **India's Related Initiative:**
- India is one of the first countries in the world to develop a comprehensive **Cooling Action plan** which has a long term vision to address the cooling requirement across sectors and lists out actions which can help reduce the cooling demand.

Baikal-GVD Telescope

Why in News

Russian scientists have launched **one of the world's biggest underwater neutrino telescopes** called the **Baikal-GVD (Gigaton Volume Detector)** in the waters of **Lake Baikal**, the world's deepest lake situated in **Siberia**.

- The construction of this telescope, which started in 2016, is motivated by the mission **to study in detail the elusive fundamental particles called neutrinos** and to possibly determine their sources.

Key Points

➤ **About Baikal-GVD Telescope:**

- It is **one of the three largest neutrino detectors in the world** along with the **IceCube at the South Pole** and **ANTARES in the Mediterranean Sea**.
- GVD is **designed to detect high-energy neutrinos** that may have come from the Earth's core, or could have been produced during nuclear reactions in the Sun.



- It will **aid scientists' understanding of the origins of the universe** since some neutrinos were formed during the **Big Bang**, others continue to be formed as a result of **supernova explosions** or because of **nuclear reactions in the Sun**.

➤ **About Fundamental Particles:**

- The **universe is made of some fundamental particles** that are indivisible. These **particles can be classified into quarks and leptons**.
 - But this **only applies to "normal matter"** or the matter that scientists know that 5% of the universe is made up of.
- There has been the **discovery of over 12 such quarks and leptons**, but **three of these (protons, neutrons and electrons) make what is referred to as the building block of life— the atom**.
- **Protons** (carry a **positive charge**) and **neutrons** (no charge) are **types of quarks**, whereas **electrons** (carry a **negative charge**) are **types of leptons**.
- In different combinations, these particles **can make different kinds of atoms, which in turn make up molecules** that form everything— from a human being, to a mobile phone, a planet, and so on.
- Studying what humans and everything around them is made up of **gives scientists a window into understanding the universe** a better way.

➤ **About Neutrinos:**

- **Neutrinos (not the same as neutrons)** are also a **type of fundamental particle**.
- Neutrinos **belong to the family of particles called leptons**, and there are **three types of neutrino**, i.e. electron-neutrino, muon-neutrino, and tau-neutrino.
- They are the **second most abundant particles, after photons**, which are particles of light.

Note:



drishti

- However, they are not easy to catch, this is because they **do not carry a charge**, as a result of which they **do not interact with matter**.
- **Natural sources of neutrinos** include the radioactive decay of primordial elements within the earth, radioactivity in the sun, cosmic interactions in the atmosphere and others.
- One way of **detecting neutrinos is in water or ice**, where neutrinos leave a flash of light or a line of bubbles when they interact. To capture these signs, scientists have to build large detectors.

Big-Bang Model

- It is a widely held theory of the evolution of the universe.
- Its essential feature is the **emergence of the universe from a state of extremely high temperature and density**—the so-called big bang that occurred 13.8 billion years ago.

Supernova

- Supernova is a **powerful and luminous stellar explosion**.
- This astronomical event **occurs during the last evolutionary stages of a massive star** or when a **white dwarf** is triggered into runaway nuclear fusion.

Quarks

- Quark is a fundamental constituent of matter and is defined as an elementary particle.
- The quarks combine to produce composite particles called **hadrons**, the most stable of which are **neutrons and protons** that are the components of atomic nuclei.

Lepton

- Lepton, any member of a class of subatomic particles that **respond only to the electromagnetic force, weak force, and gravitational force**.
- They are not affected by the strong force.
- Leptons are said to be elementary particles; and **can either carry one unit of electric charge or be neutral**.

Support Centre for Aditya-L1

Why in News

ARIES facility (Aryabhata Research Institute for Observational Sciences) will host the support centre

for **Aditya-L1 mission**, which is due to be launched next year (2022).

- **ARIES** is an autonomous institute under the Department of Science & Technology and is located in Nainital (Uttarakhand).

Key Points

➤ About Aditya-L1 Mission:

- It is **India's first scientific expedition to study the Sun**. It will be **ISRO's (Indian Space Research Organisation) second space-based astronomy mission after AstroSat**, which was launched in 2015.
- ISRO categorises Aditya L1 as a **400 kg-class satellite** that will be launched using the **Polar Satellite Launch Vehicle (PSLV)** in XL configuration.
 - It will be inserted in a halo orbit around the **L1 (Lagrangian point 1)**, which is **1.5 million km from the Earth**.

- The space-based observatory **will have seven payloads** (instruments) on board to **study the Sun's corona, solar emissions, solar winds and flares, and Coronal Mass Ejections (CMEs)**, and will carry out **round-the-clock imaging of the Sun**.

➤ Aditya-L1 Support Centre (ASC):

- The **main aim of this centre** is to let every researcher in India perform analysis over scientific **data obtained from Aditya-L1**. It will **expand the visibility of Aditya-L1 beyond India** at the international level.
- It will **host a compendium of the location and duration of different features on the solar surface** such as **coronal holes, prominences, flares, CMEs and sunspots**.
 - **Continuous monitoring of the location and duration of these features will help in monitoring the Earth directed CMEs and thereby, the space weather**.

➤ Challenges in Launching the Mission:

- The distance of the **Sun from Earth (approximately 15 crore kms on average, compared to the only 3.84 lakh kms to the Moon)**. This huge distance poses a **scientific challenge**.
- **Aditya L1 will have some moving components** which increases the **risks of collision**.
 - Due to the risks involved, **payloads in earlier ISRO missions** have largely remained **stationary in space**.

Note:



drishti

- Other issues are the super **hot temperatures and radiation** in the solar atmosphere.
 - However, **Aditya L1 will stay much farther away**, and the heat is not expected to be a major concern for the instruments on board.

➤ **Importance of Studying the Sun:**

- Every planet, including Earth and the **exoplanets** beyond the Solar System, evolves and this evolution is governed by its parent star.
- **Sun affects the weather** of the entire system.
 - Variations in this weather can change the orbits of satellites or shorten their lives, interfere with or damage onboard electronics, and cause power blackouts and other disturbances on Earth.
- To learn about and track **Earth-directed storms**, and to predict their impact, continuous solar observations are needed.

➤ **Other Missions to Sun:**

- **Japan's Solar-C EUVST:** The EUVST (Extreme Ultraviolet High-Throughput Spectroscopic Telescope Epsilon) would be studying the **solar wind** released by the **solar atmosphere**, as well as studying how this atmosphere **drives solar material eruption**.
- **NASA's EZEI Mission:** The EZEI (Electrojet Zeeman Imaging Explorer) Mission would study the atmosphere of the earth and electric currents in it, which link the **aurora to the magnetosphere**.
- **NASA's Parker Solar Probe's** aim is to trace how energy and heat move through the **Sun's corona** and to study the source of the solar wind's acceleration.
 - It is part of **NASA's 'Living With a Star' programme** that explores different aspects of the **Sun-Earth system**.
- The earlier **Helios 2 solar probe, a joint venture between NASA** and space agency of erstwhile **West Germany**, went within **43 million km** of the **Sun's surface in 1976**.

Sun's Corona

- Corona is a **luminous envelope of plasma** that surrounds the Sun and other celestial bodies.
- It is extended to millions of kilometres into space and is commonly **seen during a total solar eclipse**.
- The corona of the Sun is much hotter than its visible surface.

- The intense temperature of the Sun's corona is due to the **presence of highly ionized ions** which give it a spectral feature.

Solar Winds and Flares

- The **solar wind** is a continuous stream of charged particles that flows out of the Sun in all directions.
- The strength of the solar wind varies depending on the activity on the surface of the Sun.
- The Earth is mostly protected from the solar wind by its strong magnetic field.
 - However, some types of activity, **like solar flares**, can cause high energy particles to emit from the Sun which can be dangerous to astronauts and can cause damage to satellites orbiting Earth.

Coronal Mass Ejection

- A **Coronal Mass Ejection (CME)** is a significant release of plasma and accompanying magnetic field from the solar corona.
- They often follow solar flares and are normally present during a solar prominence eruption.
 - **Prominences** are clouds of incandescent, ionized gas ejected from the Sun's surface.
- The plasma is released into the solar wind, and can be observed in coronagraph imagery.
- An ARIES team has recently developed an algorithm to study the accelerating solar eruptions in the lower corona called **CMEs Identification in Inner Solar Corona (CIISCO)**.

Lagrangian Point 1

- Lagrange Points, named after Italian-French mathematician Joseph-Louis Lagrange, are positions in space where the gravitational forces of a two-body system (like the Sun and the Earth) produce enhanced regions of attraction and repulsion.
- These can be used by spacecraft to reduce fuel consumption needed to remain in position.
- L1 refers to Lagrangian/Lagrange Point 1, one of 5 points in the orbital plane of the Earth-Sun system.
- The L1 point is about 1.5 million km from Earth, or about 1/100th of the way to the Sun.
- A Satellite placed in the halo orbit around the Lagrangian point 1 (L1) has the major advantage of continuously viewing the Sun without any occultation/ **eclipses**.

Note:

- The L1 point is home to the Solar and Heliospheric Observatory Satellite (SOHO), an international collaboration project of **National Aeronautics and Space Administration (NASA)** and the European Space Agency (ESA).

NASA's Ingenuity Mars Helicopter

Why in News

Recently, NASA's miniature **robot helicopter Ingenuity** performed a successful takeoff and landing on **Mars**. It was the **first powered, controlled flight on another planet**.

- The **first powered flight on Earth** was achieved by the **Wright brothers in 1903** in Kitty Hawk, North Carolina.



Key Points

- **About Ingenuity:**
 - Ingenuity is the **first helicopter to fly on Mars**.
 - It was carried by **NASA's rover called Perseverance** that was launched in July 2020.
 - Ingenuity is able to fly using counter-rotating blades that spin at about 2,400 rpm (Rotations Per Minute).
 - It has a **wireless communication system**, and is equipped with computers, navigation sensors, and two cameras.
 - It is **solar-powered**, able to charge on its own.
- **Mission of the Helicopter:**
 - It will help collect samples from the surface from locations where the rover cannot reach.

Importance of this Flight:

- Its performance during these experimental test flights will **help inform decisions about small helicopters for future Mars missions** — where they can perform a support role as **robotic scouts, surveying terrain from above**, or as full standalone science craft carrying instrument payloads.
- **NASA's Perseverance Rover:**
 - Perseverance landed at the **Jezero Crater (an ancient river delta that has rocks and minerals that could only form in water)** of Mars in February 2021.
 - It will remain on the Red Planet for about two years and look for **past signs of life**.
 - The rover is designed to study signs of **ancient life, collect samples that might be sent back to Earth during future missions** and test new technology that might benefit future robotic and human missions to the planet.

Mars

Size and Distance:

- It is the **fourth planet from the Sun** and the **second-smallest planet** in the Solar System. It is also called '**Red Planet**'.
- Mars is about half the size of Earth.

Similarity to the Earth (Orbit and Rotation):

- As Mars orbits the Sun, it completes one rotation every 24.6 hours, which is very similar to one day on Earth (23.9 hours).
- Mars' axis of rotation is tilted 25 degrees with respect to the plane of its orbit around the Sun. This is similar with Earth, which has an axial tilt of 23.4 degrees.
- Like Earth, Mars has distinct seasons, but they last longer than seasons on Earth since Mars takes longer to orbit the Sun (because it's farther away).
- Martian days are called sols—short for 'solar day'.
- Mars has two moons: **Phobos and Deimos**.

India's Mars Orbiter Mission (MOM) or Mangalyaan:

- It was launched from the Satish Dhawan Space Centre in Andhra Pradesh by **Indian Space Research Organisation** in November 2013.
- It was launched on board a PSLV C-25 rocket with aim of studying Martian surface and mineral composition as well as scan its atmosphere for methane (an indicator of life on Mars).

Note:

Chimera Research: Human Cells in Monkey Embryos

Why in News

Recently, researchers at the **Salk Institute for Biological Studies in the US** in a research called **Chimera Research** have **for the first time grown human cells in monkey embryos**.

Key Points

➤ About the Research:

- By integrating human cells into the embryos of **macaque monkeys**, a **chimeric tool** has been created.
 - **Chimeras** are organisms that are **made up of the cells of two distinct species**, in this case humans and monkeys.
 - For instance, if this hybrid embryo was placed in the womb of a monkey, **it could possibly grow into a new kind of an animal** (however this was not the aim of this study).

➤ Purpose of the Research:

- **Understanding Human Development & Drug Evaluation:**
 - Ability to grow cells of two different species together offers scientists a **powerful tool for research and medicine**, advancing current understanding about early human development, disease onset and progression and ageing.
 - It could also **help in drug evaluation and address the critical need for organ transplantation**.
- **Provides New Platform to Study Diseases:**
 - Chimeric tools provide a new platform to study **how certain diseases arise**. For instance, a particular gene that is associated with a certain type of cancer could be engineered in a human cell.
 - It can help in **studying the course of disease progression** using the engineered cells in a chimeric model, which may be able to tell them more about the disease than results obtained from an animal model.

➤ Reason for Choosing Macaque:

- In a 2017 study, researchers **integrated human cells into pig tissues** as they thought that pigs, whose

organ size, physiology and anatomy are similar to that of humans, could help them in creating organs that could ultimately be transplanted to humans.

- As the **experiment failed** due to **evolutionary distance between pigs and humans** (about 90 million years) the researchers **decided to pick a species that was more closely related to humans**, hence macaque monkeys were chosen.

➤ Concerns:

- **Not Natural and have Survival Issue:**
 - Some rare hybrid animals exist naturally and were probably the result of **unintentional cross breeding** between animals of different species.
 - In 2014, a rare hybrid animal called **Geep (Goat+Sheep)** was born in an Irish farm. Geep was a hybrid between a goat and a sheep, a result of the two mating.
 - Generally, different species don't cross-breed and if they do, their **offspring don't survive** for long and are prone to infertility.
- **Infertility:**
 - **Mules** are another example of a hybrid animal that are the result of mating between a female horse and a male donkey.
 - As per the American Mule Museum, **these hybrid animals are the result of intentional breeding by humans**, which they first undertook in the ancient times.
 - While mules can live a long healthy life, **they are infertile** which means that they cannot have offspring of their own.
- **Injustice Against Animals for Human Benefit:**
 - Although researchers have made it clear that the chimeras created with macaques will not be used for human organs still **there is skepticism since others feel that one of the goals of chimera research is to create organs that can be transplanted to humans**.
 - Chimera research **has the potential to worsen injustice against animals** and also point out the fairness in using part-human animals to meet human needs.
 - In 2018 a scientist in China claimed to have produced genetically modified babies using the gene editing technique **CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)**. He was sentenced to prison for

Note:

three years, with a fine of 3 million yuan (approx. Rs 3 crore), for illegal medical practice.

➤ **Indian Laws on Hybrid Animals:**

- In India production of hybrid animals has been banned since 1985.
- **Genetically Modified Organisms (GMOs)** and the products are regulated under the “**Rules for the manufacture, use, import, export & storage of hazardous microorganisms, genetically engineered organisms or cells, 1989**” (referred to as Rules, 1989) notified under the **Environment (Protection) Act, 1986**.
 - These Rules are **implemented by the Ministry of Environment, Forest and Climate Change**, Department of **Biotechnology** and State Governments through six competent authorities.
 - The Rules, 1989 are **supported by a series of guidelines** on contained research, biologics, confined field trials, food safety assessment, environmental risk assessment etc.

Brucellosis

Why in News

Recently, Kerala launched preventive measures after a few cases of **brucellosis**, a **zoonotic infection**, have been detected in some dairy animals.

- Earlier in **September 2020** **Brucella abortus S19Δ per vaccine** was developed by the **Indian Council of Agricultural Research's** -Indian Veterinary Research Institute (ICAR-IVRI) for brucellosis prevention in the dairy sector.

Zoonotic Diseases

- It is a disease that **passes into the human population from an animal source** directly or through an intermediary species.
- Zoonotic infections **can be bacterial, viral, or parasitic** in nature, with animals playing a vital role in maintaining such infections.
- Examples of zoonoses include **HIV-AIDS, Ebola, Malaria, and the current Covid-19 disease**.

Key Points

- **About:**
- It is a **bacterial disease** caused by various *Brucella*

species, which mainly **infect cattle, swine, goats, sheep and dogs**.

- It is also known as **Malta fever or Mediterranean fever**.
- Brucellosis is **endemic in India** causing huge economic losses to dairy industry due to:
 - Infertility
 - Abortion
 - Birth of weak off springs
 - Reduced productivity
- **Infection to Humans:**
 - **Infection:**
 - Brucellosis has **infected over 3000 people in China**.
 - Humans generally **acquire the disease through:**
 - Direct contact with infected animals.
 - Eating, drinking contaminated animal products, unpasteurized milk.
 - Inhaling airborne agents.
 - The **US Centers for Disease Control and Prevention** states that person-to-person transmission of brucellosis is “**extremely rare**” but some symptoms may reoccur or never go away.
 - **Symptoms:**
 - **Fever, sweats, malaise, anorexia** (psychological disorder in which one eats less due to fear of weight gain), **headache and muscle pain**.
 - **Treatment and prevention:**
 - It is usually **treated with antibiotics**, including rifampin and doxycycline.
 - **Avoiding unpasteurised dairy products** and taking safety precautions such as wearing rubber gloves, gowns or aprons, when handling animals or working in a laboratory can help prevent or reduce the risk of getting brucellosis.
 - Other preventive measures include **cooking meat properly, vaccinating domestic animals, etc.**

Crew-2 Mission

Why in News

Four astronauts were launched to the **International Space Station (ISS)** from Florida as part of a collaboration

Note:

between **NASA** and **SpaceX** under the **Commercial Crew Program**. The mission is called **Crew-2**.

Key Points

➤ About the Commercial Crew Program:

- NASA's Commercial Crew Program is a **partnership between NASA and private industry** to carry astronauts to and from the International Space Station.
- Unlike previous human spaceflight programs, NASA is a customer buying flights from commercial providers. The agency **does not own or operate the spacecraft**.
- The program is **helping to lower the cost of spaceflight** and potentially **create a new commercial market** for humans in space.
- By encouraging private companies to provide crew transportation services to and from low-Earth orbit, **NASA can focus on building spacecraft and rockets meant for deep space exploration missions**.
- **Boeing and SpaceX were selected by NASA in September 2014** to develop transportation systems meant to transfer crew from the US to the ISS.

Note:

Recently, the Indian government had announced the opening up of the space sector to private players with the inception of **the Indian National Space Promotion and Authorisation Centre (IN-SPACe)**.

➤ NASA's Partnership with SpaceX:

- In May 2020, **NASA's SpaceX Demo-2** test flight lifted off for the ISS carrying two astronauts.
 - The aim of this test flight was to see if SpaceX capsules could be used on a regular basis to ferry astronauts to and from the ISS.
- Demo-2 was followed by the **Crew-1 mission in November**, which was the first of six crewed missions between NASA and SpaceX marking the beginning of a new era for space travel.
- **Crew-1 was the first operational flight of the SpaceX Crew Dragon spacecraft** on a Falcon 9 rocket to the ISS.
- Crew-1 team members **joined members of Expedition 64** and conducted microgravity studies at the ISS.

➤ About the Crew-2 Mission:

- It is the second crew rotation of the **SpaceX Crew Dragon** and the first with international partners.
- Out of the four astronauts, two are from **NASA** and two are from the **Japan Aerospace Exploration Agency (JAXA)** and the **European Space Agency (ESA)**.
- Crew-2 astronauts **will join the members of Expedition 65** (65th long duration expedition to the International Space Station).
 - They will stay aboard the ISS for six months during which time they will conduct science experiments in **low-Earth orbit**.
- Their central focus during this time will be **to continue a series of Tissue Chips in Space studies**.

➤ Tissue Chips:

- Tissue Chips are **small models of human organs** that contain multiple cell types that behave similarly to the human body.
- According to NASA, these chips **can potentially speed up the process of identifying safe and effective drugs and vaccines**.
- Scientists can use these tissue chips in space **to study diseases that affect specific human organs**, which would take months or years to develop on Earth.

International Space Station

- ISS is a **habitable artificial satellite** - the single largest man-made structure in low earth orbit. Its **first component was launched into orbit in 1998**.
- It circles the Earth in roughly 92 minutes and completes 15.5 orbits per day.
- The ISS programme is a **joint project between five participating space agencies**: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada) but its ownership and use has been established by intergovernmental treaties and agreements.
- It serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy, meteorology, and other fields.
- Continuous presence at ISS has resulted in the longest continuous human presence in the low earth orbit.
- It is **expected to operate until 2030**.

Note:

Reasons for Rising Covid-19 Infections: Second Wave

Why in News

The ongoing second wave of **Covid-19 infections** has shaken the country and is more devastating than the first wave.

- The **rise in case numbers has been exponential** in the second wave.

MORTALITY RATES		
Age group	1st wave	2nd wave
<10	0.27%	0.34%
10-20	0.53%	0.31%
20-30	2.08%	1.72%
30-40	5.27%	5.39%
40-50	11.98%	10.82%
50-60	23.29%	21.23%
60-70	28.76%	28.21%
70-80	19.99%	22.17%
80+	7.82%	9.81%

Key Points

- **Protocol Fatigue:**
 - When cases started declining, people just broke out of the protocol of **wearing a face mask, washing hands regularly and maintaining social-physical distance**.
 - Gatherings began becoming large particularly January 2021 onwards.
 - **Rules** were relaxed. **Penalties** were not enforced. The pattern was seen across the country allowing the novel coronavirus to create a second and possibly stronger wave.
- **Mixed Signal from Government:**
 - The queues outside polling booths and **gatherings at the election rallies of all the parties defied Covid-19 protocol**. This sent a confusing message to the public and also the grassroots-level functionaries

of the government. It weakened the vigil against the pandemic.

- **Urban Mobility:**
 - India has recorded over 1.2 crore cases of Covid-19 yet the pandemic is still mostly concentrated around cities, especially the bigger cities. These **cities have greater mobility giving more opportunities for the virus to spread** from one person to another when the guard is lowered.
- **Containment Zones:**
 - In the current wave, the **marking of the containment zone has been less strict**. In cities, the government has asked civil authorities to adopt **micro-containment**, with perhaps just a floor or a house defined as a containment zone.
 - Earlier, an entire apartment or area would be made a containment zone, reducing the chances of transmission of the virus.
- **Mutations:**
 - Besides the human factors, the **evolution of coronavirus is among the major reasons for the second wave**. Scientists have detected numerous mutations in the SARS-CoV-2, the coronavirus that causes Covid-19. Some of these mutations have produced what they call is **Variants of Concern (VOCs)**.
 - India has reported such VOCs from several states including the worst-impacted ones by the second wave of Covid-19 pandemic.
 - The L452R mutation found in the **variant B.1.617**, first detected in India, too has been associated with increased infectivity.

Variants of Concern

These are variants for which there is evidence of an increase in transmissibility, more severe disease (increased hospitalizations or deaths), significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures.

- **Increased Testing:**
 - Increased testing is another reason why **India is detecting more cases in the second wave of the Covid-19 pandemic**.
 - The **sero-surveys** have shown that India had greater Covid-19 exposure than revealed through confirmed cases of coronavirus infection on the basis of laboratory tests.

Note:

- Earlier people were reluctant to go for Covid-19 tests but now easier availability of Covid-19 testing, improved disease-management in hospitals and rollout of Covid-19 vaccination programme has made people more confident about opting for the test.
- **Asymptomatic Persons:**
 - Asymptomatic (showing no symptoms) person, who carries the virus, would have spread the infection. In India, **80-85% of the population are asymptomatic**.
- **Inadequate Health Infrastructure:**
 - India also failed to seize the opportunity to augment its healthcare infrastructure and vaccinate aggressively.
 - **For Example:** Oxygen shortage and lack of beds in Hospitals.

Way Forward

- There are only two ways of getting immunity from the virus, one is getting infected, and the other is via a vaccine therefore it is important to **fast track the vaccine programme** across the country, but testing is equally important.
- The number of tests must go up again and **contact tracing**, ideally 20 persons for every case, should be taken up intently.
- There is a need for a **renewed emphasis on following safety protocols**. Draconian total lockdowns are no longer necessary. However, there is also **need to formulate District Action Plans with a focus on mapping of cases**, reviewing of ward/block wise indicators, 24x7 emergency operations centre, incident command system area specific rapid response team and timely sharing of information.

Ct Value: Covid-19 Test

Why in News

The **ICMR (Indian Council of medical Research)** has decided a **single Ct value cut-off** for determining whether a patient is positive for **Covid-19**.

- Ct is a value that emerges during **RT-PCR tests**. All patients with a **Ct value less than 35** may be considered as **positive** while those with a **Ct value above 35** may be considered as **negative**.

Key Points

➤ RT-PCR Tests:

- In an **RT-PCR (Reverse Transcription Polymerase Chain Reaction)** test, **RNA (Ribonucleic acid)** is **extracted** from the swab collected from the patient. It is **then converted into DNA (Deoxyribonucleic acid)**, which is **then amplified**.
- **Amplification** refers to the **process of creating multiple copies of the genetic material** - in this case, DNA.
 - This improves the ability of the test to detect the presence of the virus.
- Amplification **takes place through a series of cycles** — one copy becomes two, two becomes four, and so on — and it is **after multiple cycles that a detectable amount of virus is produced**.

➤ Ct Value:

- **Ct** is short for '**Cycle Threshold**'.
- The Ct value **refers to the number of cycles after which the virus can be detected**.
- If a **higher number** of cycles is required, it implies that the **virus went undetected** when the number of cycles was lower.
- The **lower the Ct value, the higher the viral load** - because the virus has been spotted after fewer cycles.
- It has been found that the **time since the onset of symptoms has a stronger relationship with Ct values** as compared to the severity of the disease.

➤ Viral Load:

- It **refers to the amount of genetic material, commonly RNA, of a virus present in an infected person's blood**.
- This is **expressed as** the total number of viral particles present in each millilitre of blood.
- A **higher viral load** in the blood means that the **virus is replicating and the infection is progressing**.
- An infected person with a high viral load is more likely to shed more virus particles, in the process known as "**viral shedding**".

China's Permanent Space Station

Why in News

Recently, China **launched an unmanned module of**

Note:



drishti

its permanent space station that it plans to complete by the end of 2022.

- The module, named “Tianhe”, or “Harmony of the Heavens”, was launched on the **Long March 5B**, China’s largest carrier rocket.
- India has also set its eye on building its own space station in **low earth orbit** to conduct microgravity experiments in space in 5 to 7 years.

Key Points

➤ Background:

- The **only space station** currently in orbit is the **International Space Station (ISS)**, from which **China is excluded**.
 - A **space station** is a **spacecraft** capable of supporting crew members, designed to remain in space for an extended period of time and for other spacecraft to dock.
 - The **ISS is backed by** the United States, Russia, Europe, Japan and Canada.
- **China has been a late starter** when it comes to space exploration. It was only in 2003 that it sent its first astronaut into orbit, making it the third country to do so, after the Soviet Union and the US.
- So far, China has sent two previous space stations into orbit. The **Tiangong-1** and **Tiangong-2** were **trial stations** though, simple modules that allowed only relatively short stays by astronauts.

➤ China’s Space Station:

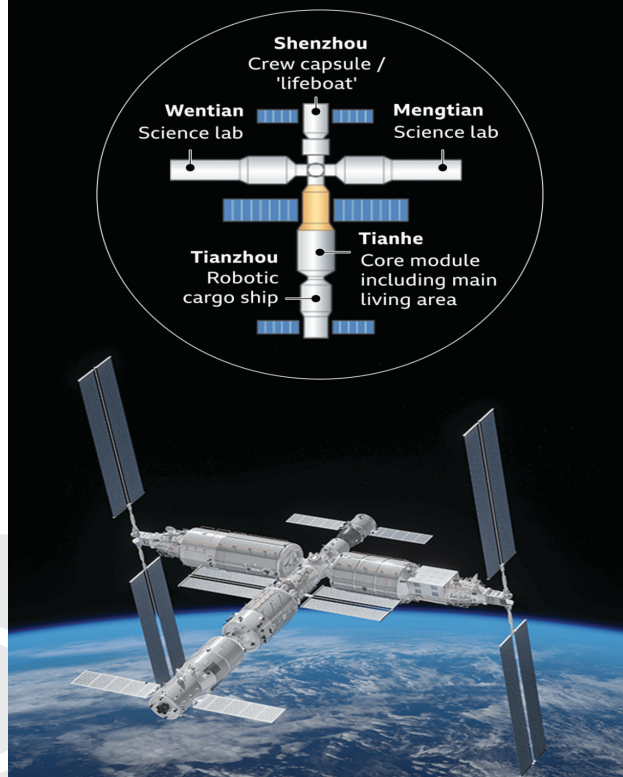
- The **new, 66-tonne, multi-module Tiangong station** is set to be **operational for at least 10 years**.
- **Tianhe is one of three main components** of what would be **China’s first self-developed space station**, rivalling the only other station in service – the ISS.
 - It **forms the main living quarters for three crew members** in the Chinese space station.
- The Tianhe launch is the **first of 11 missions** needed to complete the space station, which will **orbit Earth at an altitude of 340 to 450 km**.
 - In the later missions, China will launch the **two other core modules, four manned spacecraft and four cargo spacecraft**.

➤ Significance for China:

- **For Ramping up Space Programme:**

China's space station

How it will look when fully assembled



- China **aims to become a major space power by 2030**. It has ramped up its space programme with visits to the moon, the launch of an uncrewed probe to Mars and the construction of its own space station.
- **ISS is about to expire by 2024:**
 - In contrast, the fate of the ageing ISS – in orbit for more than two decades – remains uncertain. The **project is set to expire in 2024**, barring funding from its partners. Russia has said recently that it would quit the project **from 2025**.
- **Russia’s Deepening Ties with China:**
 - Russia is deepening ties with China in space as **tensions with the US rise**. It has **slammed the US-led Artemis moon exploration programme** and instead **chosen to join China** in setting up **a lunar research outpost** in the coming years.
- **Other Missions of China:**
 - **Chang’e-5 (Moon)**
 - **Tianwen-1 (Mars)**



Note:

Environment and Ecology

Highlights

- Snow Leopard
- Earth Day
- Sulphur Dioxide Emissions from Caribbean Volcano
- Disk-footed Bat
- Dolphin Population in Odisha
- Great Indian Bustards
- Exotic Animals
- National Climate Vulnerability Assessment Report
- State of the Global Climate 2020: WMO
- Protest Against Blue Flag Beaches
- Climate Change: Impact on Children
- Leaders' Summit on Climate
- Groundwater Depletion and Cropping Intensity
- Green Initiatives: Saudi Arabia
- The Global Forest Goals Report 2021: UN Report
- Assam Earthquake

Snow Leopard

Why in News

Just days before celebrating **Earth Day**, the internet was going viral over a photo of a snow leopard.

Key Points

➤ About:

- **Scientific Name:** *Panthera uncia*
- **Top Predator:** Snow leopards act as an indicator of the health of the mountain ecosystem in which they live, due to their position as the top predator in the food web.

➤ Habitat:

- Mountainous regions of **central and southern Asia**.
- **In India, their geographical range encompasses:**
 - Western Himalayas: Jammu and Kashmir, Himachal Pradesh.
 - Eastern Himalayas: Uttarakhand and Sikkim and Arunachal Pradesh.
- **Snow Leopard capital of the world:** Hemis, Ladakh.
 - **Hemis National Park** is the biggest national park in India and also has a good presence of Snow Leopard.

➤ Protection Status:

- The snow leopard is listed as **Vulnerable** on the **IUCN-World Conservation Union's Red List** of the Threatened Species.

- In addition, it is also listed in **Appendix I** of the **Convention on International Trade of Endangered Species (CITES)**.

- Making trading of animal body parts (i.e., fur, bones and meat) illegal in signatory countries.

- It is listed in **Schedule I of the Indian Wildlife (Protection) Act 1972**.

- It is also listed in the **Convention on Migratory Species (CMS)**, affording the highest conservation status to the species, both globally and in India.

- It is also protected by several national laws in its range countries.

➤ Conservation Efforts by India:

- The Government of India has identified the snow leopard as a **flagship species** for the high altitude Himalayas.
- India is also party to the **Global Snow Leopard and Ecosystem Protection (GSLEP) Programme since 2013**.
- **HimalSanrakshak:** It is a community volunteer programme, to protect snow leopards, launched in October 2020.
- In 2019, **First National Protocol** was also launched on Snow Leopard Population Assessment which has been very useful for monitoring populations.
- **SECURE Himalaya: Global Environment Facility (GEF)-United Nations Development Programme (UNDP)** funded the project on conservation of high altitude biodiversity and reducing the dependency of local communities on the natural ecosystem.

Note:

- **Project Snow Leopard (PSL):** It was launched in 2009 to promote an inclusive and participatory approach to conserve snow leopards and their habitat.
- Snow Leopard is on the list of **21 critically endangered species for the recovery programme** of the Ministry of Environment Forest & Climate Change.
- Snow Leopard conservation breeding programme is undertaken at **Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal.**

Global Snow Leopard and Ecosystem Protection (GSLEP) Programme

- The GSLEP is a high-level inter-governmental alliance of all the 12 snow leopard range countries.
 - The snow leopard countries namely, India, Nepal, Bhutan, China, Mongolia, Russia, Pakistan, Afghanistan, Kyrgyzstan, Kazakhstan, Tajikistan, and Uzbekistan.
- It majorly focuses on the need for awareness and understanding of the value of Snow Leopard for the ecosystem.

Living Himalaya Network Initiative

- Living Himalayas Initiative (LHI) is established as one of WWF's global initiatives to bring about transformational conservation impact across the three Eastern Himalayan countries of Bhutan, India (North-East) and Nepal.
- Objectives of LHI include adapting to climate change, connecting to habitat and saving iconic species.

Earth Day

Why in News

- Every year, **22nd April** is celebrated as Earth Day to raise public awareness about the environment and inspire people to save and protect it.
- The **theme** for the year 2021 '**Restore Our Earth**' examines **natural processes, emerging green technologies and innovative thinking** that can restore the world's ecosystems.

Key Points

- **Background:**
 - Earth Day was **first observed in 1970**, when 20 million took to the streets to protest against

environmental degradation on the call of **US Senator Gaylord Nelson.**

- The event was triggered by the **1969 Santa Barbara oil spill**, as well as other issues such as smog and polluted rivers.
- In **2009**, the **United Nations** designated 22nd April as '**International Mother Earth Day**'.
- **About:**
 - Earth Day is now **globally coordinated by EARTHDAY.ORG**, which is a non profit organisation. It was **formerly known as Earth Day Network.**
 - It aims to "**build the world's largest environmental movement** to drive transformative change for people and the planet."
 - It recognizes a **collective responsibility**, as called for in the **1992 Rio Declaration (Earth Summit)**, to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.
 - The landmark **Paris Agreement**, which brings almost 200 countries together in setting a common target to reduce global greenhouse emissions, was also signed on Earth Day 2016.

Other Important Days

- 22nd March: **World Water Day**
- 22nd April: Earth Day
- 22nd May : **World Biodiversity Day**
- 5th June: **World Environment Day**
- **Earth Overshoot Day**

Earth Hour

- **Earth Hour** is the **World Wildlife Fund for Nature (WWF)**'s annual initiative that **began in 2007**. It is **held every year on the last Saturday of March.**
- It encourages people from more than 180 countries to **switch off the lights from 8.30 pm to 9.30 pm** as per their local time.

Sulphur Dioxide Emissions from Caribbean Volcano

Why in News

The **Sulphur Dioxide (SO₂) emissions** from a **volcanic eruption** in the Caribbean (**La Soufriere Volcano**) have

Note:



drishti

reached India, sparking fear of **increased pollution levels** in the northern parts of the country and **acid rain**.

- The **Caribbean is the region** roughly south of the United States, east of Mexico and north of Central and South America, consisting of the Caribbean Sea and its islands.

Key Points

➤ About La Soufriere Volcano:

- It is an **active stratovolcano** on the **Caribbean island of Saint Vincent** in Saint Vincent and the Grenadines.
 - A **stratovolcano** is a tall, conical volcano composed of one layer of hardened lava, tephra, and volcanic ash. These volcanoes are characterized by a steep profile and periodic, explosive eruptions.
 - Saint Vincent and the Grenadines, **located in the southern Caribbean**, consists of more than 30 islands and cays, nine of which are inhabited.
- It is the **highest peak in Saint Vincent** and has had five recorded explosive eruptions **since 1718**, most recently in April 2021.
 - The last time the volcano had **erupted was in 1979**.



➤ Impact of the Eruption on Global Temperatures:

- **Volcanic emissions** reaching the stratosphere can **have a cooling effect** on global temperatures.

- The most significant climate impacts from volcanic injections into the stratosphere come from the **conversion of sulphur dioxide to sulphuric acid**, which condenses rapidly in the stratosphere to form **fine sulphate aerosols**.

- The **aerosols increase the reflection of radiation** from the Sun back into space, **cooling the Earth's** lower atmosphere or troposphere.
- Bigger eruptions during the past century have caused a decrease in temperature of **0.27 degree Celsius** or more on the Earth's surface for up to three years.

➤ Sulphur Dioxide and Pollution:

- SO₂ emissions that lead to high concentrations of SO₂ in the air generally also lead to the formation of other sulfur oxides (SO_x). SO_x can react with other compounds in the atmosphere to form small particles. These particles contribute to **Particulate Matter (PM) pollution**.
- Small particles may penetrate deeply into the lungs and in sufficient quantities can contribute to health problems.

➤ Sulphur Dioxide and Acid Rain:

- Acid rain results **when sulphur dioxide (SO₂) and nitrogen oxides (NO_x) are emitted into the atmosphere** and transported by wind and air currents.
- The **SO₂ and NO_x react with water, oxygen and other chemicals** to form sulfuric and nitric acids. These then mix with water and other materials before falling to the ground.

Disk-footed Bat

Why in News

India's first bamboo-dwelling bat with sticky disks, has been found **near Nongkhyllam Wildlife Sanctuary in Meghalaya**.

Key Points

➤ About:

- The bat species **Eudiscopus denticulus**, aptly called **disk-footed bat**, is very distinctive in appearance with prominent disk-like pads in the thumb and bright orange colouration.

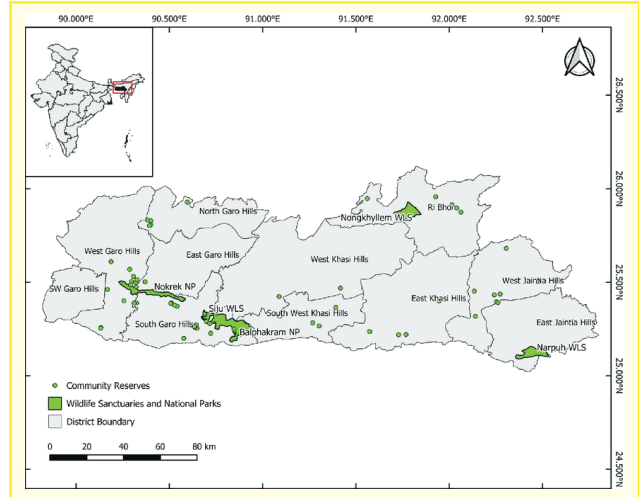
Note:



- It has been found roosting in internodal spaces of bamboo stems.
- This species is known to thrive in a few localities in **Southern China, Vietnam, Thailand and Myanmar**.
- In Meghalaya, it was recorded in the **Lailad area near the Nongkhylllem Wildlife Sanctuary**, about 1,000 km west of its nearest known habitat in Myanmar.
- **IUCN Red List Status:** Least Concern
- **Number of Bat Species in India:**
 - The disk-footed bat has raised **Meghalaya's bat count to 66, the most for any State** in India.
 - It has also helped add a genus and species to the bat fauna of India. **India** has a **total of 130 bat species**.

Nongkhylllem Wildlife Sanctuary

- Situated in the Ri-Bhoi district near Lailad village and spread over an area of 29 sq. kms, Nongkhylllem Wildlife Sanctuary is one of the famous attractions of Meghalaya.
- The Sanctuary falls in the **Eastern Himalayan Global biodiversity hotspot**.
- The sanctuary supports different species of fauna such as Royal Bengal Tiger, **Clouded Leopard, Indian Bison**, and Himalayan Black Bear etc.
- Among the birds, the rare species which can be spotted here are Manipur Bush Quail, Rufous Necked Hornbill and Brown Hornbill.
- **Other Wildlife Sanctuary in Meghalaya:**
 - Siju Wildlife Sanctuary
 - Narpuh Wildlife Sanctuary
 - Baghmara Pitcher Plant Sanctuary
 - **Nokrek National Park**



Dolphin Population in Odisha

Why in News

Recently, Odisha has released the final data on the dolphin census, indicating a spectacular growth in numbers.

Key Points

- **Census Data:**
 - The **population of dolphins in Chilika**, India's largest brackish water lake, and along the Odisha coast has **doubled this year (2021)** compared with last year.
 - **Three species were recorded** during the census, with 544 **Irrawaddy, bottle-nose and humpback dolphins** sighted this year, compared with 233 last year.
 - The **rise in the Irrawaddy dolphin population in Chilika** can be attributed to the **eviction of illegal fish enclosures**.
- **About Irrawaddy Dolphins:**
 - **Habitat:** Irrawaddy dolphins are **found in coastal areas in South and Southeast Asia**, and in **three rivers:** the Ayeyarwady (Myanmar), the Mahakam (Indonesian Borneo) and the Mekong.
 - The Mekong River Irrawaddy dolphins inhabit a 118-mile stretch of the river between Cambodia and Lao PDR.
 - **Conservation Status:**
 - **IUCN Red List:** Endangered

Note:



drashti

- **CITES:** Appendix I
- **CMS (Convention on Migratory Species):** Appendix I
- **Wildlife Protection Act, 1972:** Schedule I

➤ **About Indo- Pacific Bottlenose Dolphins:**

- **Habitat:** Indo-Pacific Bottlenose Dolphins generally occur in shallow coastal waters of the **Indian Ocean, Southeast Asia and Australia.**
- **Conservation Status:**
 - **IUCN Red List:** Near Threatened
 - **CITES:** Appendix II

➤ **About Indian Ocean Humpback Dolphins:**

- **Habitat:** The Indian Ocean Humpback Dolphin occurs within the Indian Ocean from South Africa to India.
- **Conservation Status:**
 - **IUCN Red List:** Endangered
 - **CITES:** Appendix I
 - **Wildlife Protection Act, 1972:** Schedule I

Chilika Lake

- Chilika is **Asia's largest and world's second largest lagoon.**
- It **lies on the east coast of India in the state of Odisha**, separated from the mighty Bay of Bengal by a small strip of sand.
- It spreads over Puri, Khurda and Ganjam districts of Odisha on the east coast of India, at the mouth of the Daya River, flowing into the Bay of Bengal, covering an area of over 1,100 square kilometers.
- It is the **largest wintering ground for migratory birds** on the Indian sub-continent and is home to a number of threatened species of plants and animals.
- In 1981, Chilika Lake was designated the **first Indian wetland of international importance** under the **Ramsar Convention.**
- Major attraction at Chilika is **Irrawaddy dolphins** which are often spotted off Satapada Island.
- The **large Nalabana Island (Forest of Reeds)** covering about 16 sq km in the lagoon area was declared a **bird sanctuary** in 1987.
- **Kalijai Temple** - Located on an island in the Chilika Lake.

Great Indian Bustards

Why in News

Recently, a group of hunters shot down two **Great Indian Bustards (GIBs)** in a protected area of southern Punjab's Cholistan in Pakistan.



Key Points

- **About:**
 - The **Great Indian Bustard (GIB)**, the **State bird of Rajasthan**, is considered India's most critically endangered bird.
 - It is considered the **flagship grassland species**, representing the health of the grassland ecology.
 - Its population is confined mostly to **Rajasthan and Gujarat**. Small populations occur in **Maharashtra, Karnataka and Andhra Pradesh.**
 - The bird is under constant threats due to **collision/electrocution** with power transmission lines, **hunting** (still prevalent in Pakistan), **habitat loss** and alteration as a result of widespread agricultural expansion, etc.
- **Protection Status:**
 - **International Union for Conservation of Nature Red List:** Critically Endangered
 - **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** Appendix 1
 - **Convention on Migratory Species (CMS):** Appendix I
 - **Wildlife (Protection) Act, 1972:** Schedule 1
- **India's Concerns:**
 - The grassland habitat in the Cholistan desert, where the GIBs were killed, is very similar to the habitat

Note:

in **Rajasthan's Desert National Park (DNP)**, where the GIB's last remnant wild population is found.

- DNP is situated near the towns of Jaisalmer and Barmer, forming a part of the mighty **Thar desert**.
- It was declared as a National Park in 1981 to protect the habitat of the Great Indian Bustard.
- As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, the birds will become an easy prey for the gun-toting poachers there.
- The hunting of the rare bird will not only drastically reduce India's GIB population, but will also affect the desert ecosystem.

➤ **Government's Initiatives:**

- It is kept under the **species recovery programme** under the **Integrated Development of Wildlife Habitats** of the Ministry of Environment, Forests and Climate Change (MoEFCC).
- The MoEFCC has also launched a program called '**Habitat Improvement and Conservation Breeding of Great Indian Bustard-An Integrated Approach**'.
- The objective of the programme is to build up a captive population of Great Indian Bustards and to release the chicks in the wild for increasing the population.
- Rajasthan government has launched '**Project Great Indian Bustard**' with an aim of constructing breeding enclosures for the species and developing infrastructure to reduce human pressure on its habitats.

Exotic Animals

Why in News

Recently, the Delhi High Court directed the Centre to take a decision on **framing rules to confer protection for exotic animals** that are currently **not under the purview of the Wildlife (Protection) Act, 1972**.

- The court's order came in response to a petition filed by animal rights group, **People for the Ethical Treatment of Animals (PETA)** India about the status of a male **hippopotamus** rescued from the Asiad Circus in Uttar Pradesh.
- Earlier in June 2020, the **Ministry of Environment, Forest and Climate Change** issued an **advisory to**

streamline and formalise the process of importing live exotic animals.

Key Points

➤ **Exotic Animals:**

- The term exotic does not have a set definition but it usually **refers to a wild animal or one that is more unusual and rare than normal domesticated pets** like cats or dogs.
- These are those **species which are not usually native to an area** and are introduced to an area by humans.

➤ **Provisions Related to Illegal Trade of Animals:**

- Illegally traded exotic animals are confiscated under **Section 111** of the **Customs Act, 1962** which is read with the provision of the **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** and the Foreign Trade Policy (Import-Export Policy) of India.
- CITES is an **international agreement between governments**. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species. **India** is a party to it.
- Also, **Sections 48 and 49** of the **Wildlife Protection Act, 1972** prohibit trade or commerce in wild animals, animal articles or trophies.

Hippopotamus

➤ **About:**

- Hippopotamus, **also called hippo or water horse**, is an **amphibious** African ungulate mammal.
- It is considered to be the **second largest land animal** (after the elephant).
- Hippos are **well adapted to aquatic life**. The ears, eyes, and nostrils are located high on the head so that the rest of the body may remain submerged.
- Hippopotamuses were extinct in northern Africa by 1800 and south of Natal and the Transvaal by 1900. They are still **fairly common in East Africa, but populations continue to decrease continent wide**.

➤ **Scientific Name:**

- *Hippopotamus amphibius*.

Note:



drishti



➤ Threats:

- **Human-wildlife conflict** and habitat encroachment.
- Often **killed for their meat** under the guise of protection, and they are also hunted for **hippo fat and their ivory canine teeth**.

➤ Protection Status:

- **IUCN Red List:** Vulnerable
- **CITES:** Appendix III

National Climate Vulnerability Assessment Report

Why in News

The **Department of Science and Technology** has released a report titled '**The Report Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework**'.

Key Points

➤ About the Report:

- It **identifies the most vulnerable states and districts in India with respect to current climate risk** and key drivers of vulnerability.
- It **aids in prioritizing adaptation investment**, developing and implementing adaptation programs.
- The assessment is unique as it uses a common framework across the states & union territory to make them comparable thereby **empowering the decision-making capabilities** at the policy and administrative levels.
- Some **key indicators** for the assessment include percentage of population living below the poverty line; income share from natural resources; the

proportion of marginal and small landholdings, women's participation in the workforce; density of healthcare workers etc.

- It is **part of the capacity building programme** under the two missions of the **National Action Plan on Climate Change** (total 8 missions).
 - National Mission on Sustaining the Himalayan Ecosystem (NMSHE)
 - National Mission on Strategic Knowledge for Climate Change (NMSKCC).

➤ Key Findings of the Report:

- **Highly Vulnerable States:** It identified Jharkhand, Mizoram, Orissa, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and West Bengal as states highly vulnerable to climate change.
- **Lower-middle Vulnerable States:** Himachal Pradesh, Telangana, Sikkim and Punjab.
- **Low Vulnerable States:** Uttarakhand, Haryana, Tamil Nadu, Kerala, Nagaland, Goa and Maharashtra.
- **Highly Vulnerable Districts:** Among all states, **Assam, Bihar, and Jharkhand have over 60% districts** in the category of **highly vulnerable districts**.
 - Vulnerability scores in all the districts of India lies in a very small range. It shows that **all districts & states are somewhat vulnerable with respect to current climate risk in India**.

➤ Significance of the Findings:

- The assessments can be used for India's reporting on the **Nationally Determined Contributions (NDCs)** under the **Paris Agreement**.
 - **NDCs** embody efforts by each country to **reduce national emissions and adapt to the impacts of climate change**.
- These assessments will help support India's **National Action Plan on Climate Change**.
- It will contribute to the development of more targeted climate change projects and will support the implementation of the **State Action Plans on Climate Change**.
- It will help in developing adaptation projects for the **Green Climate Fund, Adaptation Fund and funds from multilateral and bilateral agencies**.
- It will **also benefit climate-vulnerable communities** across India through development of better-designed climate change adaptation projects.

Note:



drishti

Climate Risk

- **Climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires,** reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability.
- Differences in vulnerability and exposure **arise from non-climatic factors and from multidimensional inequalities** often produced by uneven development processes. These differences shape differential risks from climate change.
- According to **The Germanwatch Global Climate Risk Index- 2019**, India was ranked **5th out of 181 countries**, implying an extremely high exposure and vulnerability.

State of the Global Climate 2020:WMO

Why in News

Recently, the **World Meteorological Organization (WMO)** released its annual **State of the Global Climate for 2020**.

- The report was released ahead of the **Leaders Summit on Climate**, hosted by the US.
- Extreme weather combined with **Covid-19** was a double blow for millions of people in 2020. However, the **pandemic-related economic slowdown** failed to put a brake on **climate change** drivers and accelerating impacts.

Key Points

- **Global Temperature:**
 - 2020 was one of the three warmest years on record, despite a cooling **La Niña** event.
 - The global average temperature was about **1.2° Celsius above the pre-industrial (1850-1900) level**.
 - The other two warmest years are **2016 and 2019**.
 - The **six years since 2015 have been the warmest on record**.
 - **2011-2020 was the warmest decade on record**.
- **Greenhouse Gases:**
 - Emission of major **greenhouse gases** increased in **2019 and 2020**.

- It will be **higher in 2021**.
- **Concentrations** of the major greenhouse gases in the air **continued to increase in 2019 and 2020**.
- Globally, averaged **mole fractions** of carbon dioxide (CO₂) have already exceeded 410 parts per million (ppm), and if the CO₂ concentration follows the same pattern as in previous years, it could reach or exceed 414 ppm in 2021.
 - **Mole fraction** represents the **number of molecules of a particular component in a mixture divided by the total number of moles** in the given mixture. It's a way of expressing the concentration of a solution.
- **Oceans:**
 - In 2019, the oceans had the **highest heat content** on record. In 2020, it has broken this record further. Over **80% of the ocean area experienced at least one marine heatwave in 2020**.
 - A marine heatwave is defined when **seawater temperatures exceed a seasonally-varying threshold for at least 5 consecutive days**.
 - The percentage of the ocean that experienced **"strong" marine heat waves (45%)** was greater than that which experienced **"moderate" marine heat waves (28%)**.
- **Sea-level Rise:**
 - Since record-taking started in 1993 using the satellite altimeter, sea-level has been rising. It is **due to the La Niña induced cooling**.
 - Sea level has recently been rising at a higher rate **partly due to the increased melting of the ice sheets in Greenland and Antarctica**.
- **The Arctic and the Antarctica:**
 - In 2020, the **Arctic** sea-ice extent came down to **second lowest** on record.
 - The 2020 minimum extent was **3.74 million square kilometre**, marking **only the second time (after 2012) on record** that it shrank to **less than 4 million sq km**.
 - In a large region of the Siberian Arctic, **temperatures in 2020 were more than 3°C above average**.
 - A record temperature of 38°C was noted in the town of **Verkhoyansk, Russia**.
 - The **Antarctic** sea-ice extent remained close to the long-term average.

Note:



drishti

- However, the Antarctic ice sheet has exhibited a strong mass loss trend since the late 1990s.
- This trend accelerated around 2005, and **currently, Antarctica loses approximately 175 to 225 Gigaton per year**, due to the increasing flow rates of major **glaciers** in West Antarctica and the Antarctic Peninsula.

➤ Extreme Weather Events in India:

- India **experienced one of its wettest monsoons since 1994**, with a seasonal surplus of 9% that led to **severe floods and landslides**.
- **Cyclone Amphan**, which hit Kolkata in May 2020, has been named as the **costliest tropical cyclone for the North Indian Ocean region** that brought about an estimated loss of USD 14 billion.

➤ Climatic Impact:

- **Extreme Weather Situations:**
 - Along with the pandemic, people across the world struggled to survive as they faced extreme weather in the form of storms, cyclones, heavy rainfall and record heat.
 - **Response and recovery** to people hit by cyclones, storms and similar extreme weather was **constrained throughout the pandemic in 2020**.
- **Human Mobility Issues:**
 - Mobility restrictions and economic downturns owing to Covid-19 **slowed down delivery of humanitarian assistance** to vulnerable and displaced populations, who live in dense settlements.
 - The **pandemic added further dimension to human mobility concerns**, highlighting the need for an integrated approach to understanding and addressing climate risk and impact on vulnerable populations.

World Meteorological Organization

➤ About:

- It is an **intergovernmental organization** with a **membership of 192 Member States and Territories**. India is a member.
- It originated from the **International Meteorological Organization (IMO)**, which was established after the 1873 Vienna International Meteorological Congress.

➤ Establishment:

- Established by the ratification of the WMO Convention on 23rd March 1950, WMO became the **specialized agency of the United Nations** for meteorology (weather and climate), operational hydrology and related geophysical sciences.

➤ Headquarters:

- Geneva, Switzerland.

Protest Against Blue Flag Beaches

Why in News

Recently Odisha government's plan to get Blue Flag Certification for five beaches was opposed by the fishermen.

- Odisha planned to develop five more beaches in three districts to meet **international standards** after receiving the certification for Puri's Golden Beach in 2020.

Key Points

➤ Fishermen's Demands:

- The proposed land for the certification is used by the fishermen to anchor their boats.
 - They want a permanent sea mouth to anchor the fishing boats.
- Protection of livelihood should be ensured and protected.
- Reopening of a new fishing jetty.

➤ Blue Flag Certification:

- **Blue Flag** beaches are considered the **cleanest beaches of the world**.
- The Blue Flag is one of the world's most recognised **voluntary eco-labels** awarded to beaches, marinas, and sustainable boating tourism operators.
- **Criteria for Certification:**
 - In order to qualify for the Blue Flag, a series of stringent environmental, educational, safety, and accessibility criteria must be met and maintained.
 - There are around **33 criteria** that are to be met to qualify for a **Blue Flag certification**,
 - Such as the water meeting certain quality standards, having waste disposal facilities, being disabled-friendly, having first aid equipment, and no access to pets in the main areas of the beach.

Note:

- Some criteria are voluntary and some compulsory.
- **Organisations:**
 - The Blue Flag Programme for beaches and marinas is run by the international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).
 - **FEE** (the Foundation for Environmental Education) was established in France in 1985.
- **On the lines** of Blue Flag certification, India has also launched its own eco-label **BEAMS** (Beach Environment & Aesthetics Management Services).

BEAMS

- **Beach Environment & Aesthetics Management Services** that comes under ICZM (Integrated Coastal Zone Management) project.
- This was launched by the **Society of Integrated Coastal Management (SICOM)** and the **Union Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- The objectives of the **BEAMS** program is to:
 - **Abate pollution** in coastal waters,
 - **Promote sustainable** development of beach facilities,
 - **Protect & conserve coastal** ecosystems & natural resources,
 - **Strive and maintain** high standards of cleanliness,
 - **Hygiene & safety** for beachgoers in accordance with coastal environment & regulations.
- **There are eight beaches in India that have received Blue Flag Certification:**
 - Shivrajpur in Gujarat,
 - Ghoghla in Daman & Diu,
 - Kasargod in Karnataka and,



- Padubidri beach in Karnataka,
- Kappad in Kerala,
- Rushikonda in Andhra Pradesh,
- Golden beach of Odisha,
- Radhanagar beach in Andaman and Nicobar.

Climate Change: Impact on Children

Why in News

A recent analysis, based on **Notre Dame Global Adaptation Initiative (ND-GAIN)** index, has shown the impact of climate change on children across the world.

- The analysis was done by **Save the Children International**, a child rights non-profit organisation.

Notre Dame Global Adaptation Initiative

- **ND-GAIN is part of the Climate Change Adaptation Program of the University of Notre Dame's Environmental Change initiative (ND-ECI).**
- **ND-GAIN's Country Index** shows which countries are best prepared to deal with global changes brought about by overcrowding, resource-constraints and climate disruption.
- The Country Index uses **20 years** of data to **rank more than 180 countries** annually based on their vulnerability and, uniquely, how ready they are to adapt.
 - **Vulnerability is considered in six life-supporting sectors** – food, water, health, ecosystem service, human habitat and infrastructure.
 - Overall **readiness is measured by considering three components** – economic readiness, governance readiness and social readiness.
- According to the scores for **2018**, **India ranked 122** and is the **48th most vulnerable country** and the **70th least ready country**.

Key Points

- **From the Analysis:**
 - **Countries with Highest Climate Risk:**
 - **Sub-Saharan Africa** has **35 of the 45 countries** globally at highest climate risk.
 - **Climate risk** can be defined as a combination of hazard exposure, sensitivity to impact, and adaptive capacity.

Note:

- **Chad, Somalia, Central African Republic, Eritrea and Democratic Republic of the Congo** are the **least capable of adapting to the impact of climate change**.
- **Around 490 million children** under the age of 18 in 35 African countries are at the **highest risk of suffering** the impact of climate change.
- **Situation in South Asian Region:**
 - Of the **750 million** children in **45 countries** likely to be most affected by climate risk, 210 million are in three South Asian nations — **Pakistan, Bangladesh and Afghanistan**.
- **Impact of Climate Change on Children:**
 - **Floods, droughts, hurricanes and other extreme weather events** will have a deep impact on vulnerable children and their families.
 - Malaria and dengue fever already plague children in the Democratic Republic of Congo.
 - Increasing extreme weather events can lead to new health risks while the health system is already limited.
 - **Around 9.8 million people were displaced due to the disasters** caused by climate change during the **first half of 2020**.
 1. Most of them were in South and South-East Asia and the Horn of Africa, confirmed the World Meteorological Organisation in its flagship State of the **Global Climate report**.
 - Children will be **impacted by food shortages, diseases and other health threats, water scarcity, or be at risk from rising water levels** – or a combination of these factors.
 - There is enough evidence that establishes the **impact of “climate crisis on food production”**. Hence, this will lead to **local food scarcity and price hikes**.
 - Climate change can disrupt food availability, reduce access to food, and affect food quality.
 - Children of the poorest households will be the most-affected. In fact, there has been scientific evidence of the **link between obesity, under-nutrition and climate change**.

➤ **India's Scenario:**

- **Findings from 2020 PwC Report:**

- **Disadvantaged and vulnerable populations (including children), indigenous people and local communities dependent on agricultural or coastal livelihoods are at a disproportionately higher risk of adverse consequences** due to climate change.
 - Children bear the brunt of climate change as it affects their fundamental rights of survival, protection, development and participation.
- Other **potential effects of climate change on children** are orphanhood, trafficking, child labour, loss of education and development opportunities, separation from family, homelessness, begging, trauma, emotional disruption, illnesses, etc.
- **India's Performance in Other Related Indices:**
 - **Climate Change Performance Index:**
 - India **ranked 10th** in CCPI 2021, released by Germanwatch, the New Climate Institute and the Climate Action Network.
 - **World Risk Index 2020:** India has ranked 89th among 181 countries on the WRI 2020 and is fourth-most-at-risk in South Asia, after Bangladesh, Afghanistan and Pakistan.
 - It is released by the United Nations University Institute for Environment and Human Security (UNU-EHS), Bündnis Entwicklung Hilft and the University of Stuttgart in Germany.
 - **Assessment of Climate Change over the Indian Region: MoES:**
 - It is India's first-ever national forecast on the impact of global warming on the subcontinent in the coming century, published by the Ministry of Earth Sciences (MoES).
 - **National Climate Vulnerability Assessment Report:** Released by the Department of Science and Technology, it identified Jharkhand, Mizoram, Orissa, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and West Bengal as states highly vulnerable to climate change.
- **Some of the Indian Initiatives to Fight Climate Change:**
 - Shift from **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission** norms,
 - **National Clean Air Programme (NCAP)**,
 - **UJALA scheme**,
 - **National Action Plan on Climate Change (NAPCC)**, etc.

Note:

Leaders' Summit on Climate

Why in News

Recently, the **Leaders' Summit on Climate** was convened by the US President virtually.

- 40 world leaders, including the **Prime Minister of India**, were invited to the event to **underscore the urgency of stronger climate action**.
- This summit is seen as a key milestone on the road to the **United Nations Climate Change Conference, Conference of the Parties 26 (COP 26)** in November 2021 in Glasgow, Scotland.

Key Points

- **India-US Clean Energy Agenda 2030 Partnership:**
 - **About:**
 - It is a **joint climate and clean energy initiative** of India with the US.
 - It will demonstrate **how the world can align swift climate action with inclusive and resilient economic development**, taking into account national circumstances and sustainable development priorities.
 - **Objective:**
 - Mobilise investments, demonstrate **clean technologies and enable green collaborations** in India that could also create templates of **sustainable development** for other developing countries.
 - **Two Main Tracks of the Initiative:**
 - The Strategic Clean Energy Partnership.
 - The Climate Action and Finance Mobilization Dialogue.
- **US' Stand:**
 - **Pledged:**
 - To **cut the US's Green House Gas (GHG) in half by the year 2030** and called upon other nations to **"set higher climate ambitions"** that will create jobs at home, advance innovative technologies and help countries vulnerable to the impact of climate change.
 - To double its **public climate financing to developing countries** and triple public financing for climate adaptation in developing countries by 2024.

○ NDC:

- It submitted a new **Nationally Determined Contribution (NDC)** target that aims to reduce its **GHG emissions** by 50-52% below 2005 levels.
 - The US has rejoined the **Paris Agreement**.

○ Applauded:

- India for **stepping up its climate change commitment including the partnership with the US** to deploy 450 gigawatts of renewable power to meet the ambitious 2030 target for climate action and clean energy.

➤ **China's Stand:**

○ **Carbon Neutrality:**

- Its carbon emissions will peak before 2030 and the country will achieve **carbon neutrality by 2060**.
 - Promoted its **green Belt and Road Initiative** and announced efforts to **"strictly control coal-fired power generation projects"** and phase down coal consumption.

○ **Common but Differentiated Responsibilities:**

- It also emphasised on the **principle of common but differentiated responsibilities**, which argues for long-time polluters such as developed countries to do more to fight the climate crisis.

➤ **India's Stand:**

○ **Emissions:**

- India was already doing its part and that the country's per capita **carbon emissions** are 60% lower than the global average.

○ **Commitment:**

- India's ambitious **renewable energy** target of **450 GW by 2030**.
- Despite its development challenges, India has taken many bold steps on clean energy, energy efficiency, **afforestation** and biodiversity. India is among few countries whose NDCs are **2°C** compatible.

○ **Emphasis:**

- Emphasised its **encouragement of global initiatives** such as the **International Solar Alliance** and the **Coalition for Disaster Resilience Infrastructure**.

➤ **Some Indian Initiatives to Fight Climate Change:**

- **National Clean Air Programme (NCAP)**

Note:



drishti

- **Bharat Stage-VI (BS-VI) emission norms**
- **UJALA scheme**
- **National Action Plan on Climate Change (NAPCC)**

Groundwater Depletion and Cropping Intensity

Why in News

In a recent study, it has been found that **groundwater depletion** in India could reduce **winter cropped acreage** significantly in years ahead.

- The researchers studied India's three main **irrigation types** on winter cropped areas: dug wells, tube wells and canals.
- The researchers also analysed the groundwater data from the **Central Ground Water Board**.
- **Wheat, barley, peas, gram and mustard** are grown in winter.

Key Points

- **Present Scenario:**
 - India has **achieved impressive food-production gains since the 1960s**, due to an increased reliance on irrigation wells, which allowed Indian farmers to expand production into the mostly dry winter and summer seasons.
 - India is the world's **second-largest producer of wheat and rice** and is home to more than 600 million farmers.
 - India produces **10% of the world's crops** and is now the **world's largest consumer of groundwater**, and **aquifers are rapidly becoming depleted** across much of India.
 - In the **green revolution era**, policy-supported environment led to a large increase in rice cultivation in northwestern India mainly in Punjab and Haryana which are ecologically less suitable for rice cultivation due to predominantly light soils.
 - This policy-supported intensive agriculture **led to unsustainable groundwater use for irrigation** and in turn groundwater scarcity.
- **Findings of the Study:**
 - **Related to Groundwater:**
 - Groundwater is a critical resource for food

security, accounting for **60% of irrigation supplies in India**, but unsustainable consumption of groundwater for irrigation and home use is leading to its depletion.

- Groundwater depletion in India could result in a **reduction in food crops by up to 20% across the country** and up to 68% in regions projected to have low future groundwater availability in 2025.
 - It is found that 13% of the villages in which farmers plant a winter crop are located in critically water-depleted regions.
 - The results suggest that these losses will largely occur in northwest and central India.
- **Related to Switching to Canal Irrigation:**
 - Indian **government has suggested that switching from groundwater-depletion wells to irrigation canals** is one way to overcome projected shortfalls.
 - The irrigation canals divert surface water from lakes and rivers.
 - However, switching to canal irrigation has **limited adaptation potential at the national scale**.
 - The study suggests that switch to canal irrigation **will not fully compensate for the expected loss of groundwater** in Indian agriculture.
 - Further, in comparison to tube well irrigation, **canal irrigation was associated with less winter cropped area** and cropped area that was more sensitive to rainfall variability.
- **Related to Impact on Crop Production:**
 - **Reduction in Cropping Intensity:** Even if all regions that are currently using depleted groundwater for irrigation will switch to using canal irrigation, cropping intensity **may decline by 7% nationally** and by 24% in the most severely affected locations.
 - It is found that irrigation canals would favour farms close to canals, leading to unequal access.
 - **Reductions in Wheat Production:** The reductions in crop area will occur largely in the states that grow wheat, potentially leading to substantial reductions in wheat production in the future.
 - **Food Security:** The low wheat production could have ramifications for food security given that India is the second largest producer of wheat

Note:

globally and wheat provides approximately 20% of household calories in India.

Cropping Intensity

- It refers to **raising of a number of crops from the same field during one agricultural year**; it can be expressed through a formula.
- **Cropping Intensity = Gross Cropped Area / Net Sown Area x 100.**
 - **Gross Cropped Area:** This represents the total area sown once and/or more than once in a particular year, i.e. the area is counted as many times as there are sowings in a year. This total area is also known as total cropped area or total area sown.
 - **Net Sown Area:** This represents the total area sown with crops and orchards. Area sown more than once in the same year is counted only once.
- Around 51% of India's geographical area is already under cultivation as compared to 11% of the world average.
- The present cropping intensity of 136% has registered an increase of only 25% since independence. Further, rainfed drylands constitute 65% of the total net sown area.

Central Ground Water Board

- It is a subordinate office of the **Ministry of Water Resources** and is the National Apex Agency entrusted with the responsibilities of providing scientific inputs for management, exploration, monitoring, assessment, augmentation and regulation of groundwater resources of the country.
- It was **established in 1970** by renaming the Exploratory Tubewells Organization under the Ministry of Agriculture and later on merged with the **Groundwater Wing of the Geological Survey of India** during 1972.

Green Initiatives: Saudi Arabia

Why in News

Recently, Saudi Arabia launched **Saudi Green Initiative** and the **Middle East Green Initiative** to combat the threat of **climate change**.

Key Points



➤ Background and G20 Summit:

- One of the main pillars of the Saudi **G20** presidency was to **safeguard the planet**.
 - In 2020, **G20 introduced initiatives** like establishing a **Global Coral Reef Research and Development Accelerator Platform** and the **Circular Carbon Economy (CCE) Platform**.
- Saudi Arabia reiterated that it is committed to lead regional efforts to address climate change and has been making steady progress in this direction.
 - Saudi Arabia established the **Environmental Special Forces** in 2019.

➤ Saudi Green Initiative:

- **Aim:**
 - To **raise the vegetation cover, reduce carbon emissions, combat pollution and land degradation, and preserve marine life**.
- **Features:**
 - **10 billion trees** will be planted in the Kingdom.
 - To **reduce carbon emissions by more than 4% of global contributions**, through a **renewable energy programme** that will generate 50% of Saudi's energy from renewables by 2030.
 - Saudi Arabia is working towards **raising the percentage of its protected areas to more than 30% of its total land area**, exceeding the global target of 17%.

➤ Middle East Green Initiative:

- **Aim:**
 - To preserve marine and coastal environments, increase the proportion of natural reserves and protected land, **improve the regulation**

Note:



drishti

of oil production, accelerate the transition to clean energy and boost the amount of energy generated by renewables.

○ **Features:**

- Saudi Arabia will work with the **Gulf Cooperation Council** countries and regional partners to plant an additional 40 billion trees in the West Asian region.
 - It represents 5% of the global target of planting one trillion trees and reducing 2.5% of global carbon levels.
- Saudi Arabia will **convene an annual summit called the Middle East Green Initiative** which will host leaders from the government, scientists and environmentalists to discuss the details of implementation.
- In partnership with participating countries, **innovative methods will be researched** to irrigate from treated water, cloud seeding and other purpose-driven solutions such as planting native trees which requires support for three years to grow and will then be able to survive on their own with natural irrigation.

○ **Current Support:**

- Saudi Arabia has been sharing its expertise and know-how with its neighbouring countries to **reduce carbon emissions resulting from hydrocarbon production in the region by 60% and globally by 10%.**
 - Saudi Arabia currently operates the **largest carbon capture and utilisation plant in the world**, it also operates one of the **region's most advanced CO₂-enhanced oil recovery plants** that captures and stores 8,00,000 tonnes of CO₂ annually.

➤ **Appreciating Indian Efforts:**

- Saudi Arabia also appreciated India's remarkable commitments to tackle climate change as India is on track to achieve its **Paris Agreement** targets.
- India's **renewable energy capacity is the fourth largest in the world**. India has an ambitious target of achieving **450 gigawatts of renewable energy capacity by 2030.**

➤ **Related Indian Initiatives:**

- **National Clean Air Programme (NCAP)**
- **Bharat Stage-VI (BS-VI) emission norms**

- **UJALA scheme**
- **National Action Plan on Climate Change (NAPCC)**
- **International Solar Alliance**
- **Coalition for Disaster Resilience Infrastructure**

The Global Forest Goals Report 2021: UN Report

Why in News

According to the **United Nations' Global Forest Goals Report 2021**, **Covid-19** pandemic has **aggravated the challenges faced by countries in managing their forests.**

- The Report has been prepared by the **Department of Economic and Social Affairs** of the **United Nations**. It provides an initial overview of progress of Goals and targets contained within the **United Nations Strategic Plan for Forests 2030.**

Key Points

➤ **Findings of the Report:**

- **Covid-19 leading to Systemic Vulnerabilities and Inequalities:**
 - More than just a health crisis, **Covid-19 is driving losses of lives and livelihoods**, extreme poverty, inequality, and food insecurity, and it has put the 'Future We Want' further out of reach.
- **Impact of Covid-19 on Global Output:**
 - It is estimated that world gross product **fell by an estimated 4.3% in 2020**. It is the **sharpest contraction** of global output since the **Great Depression**.
- **Covid-19 is Threatening the Lifeline that Forests Provide:**
 - An **estimated 1.6 billion people, or 25% of the global population, rely on forests** for their subsistence **needs, livelihoods, employment, and income.**
 - Of the extreme poor in rural areas, 40% live in forest and savannah areas, and approximately 20% of the global population, especially women, children, landless farmers, and other vulnerable segments of society look to forests to meet their food and income needs.
- **Impact of Covid-19 on Forest Dependent Population:**

Note:

- On the **economic front**, forest-dependent populations have **faced job loss, reduced income, diminished access to markets and information**, and for many women and youth, **a contraction in seasonal employment**.
- **Socially**, many of these populations are already **marginalized and vulnerable groups**, such as indigenous peoples, least able to access critical socio-economic safety nets.
- Many forest dependent populations, especially those in remote or hard to reach places, have faced **difficulties accessing healthcare** or find that government assistance programmes and basic services are disrupted.
- **Increased Pressure on Forest:**
 - Pandemic driven health and socio-economic outcomes have increased pressure on forests.
 - To ease their growing vulnerability, many indigenous peoples and local communities, as well as returning migrants and urban workers, **have retreated deeper into the woods to seek food, fuel, shelter, and protection from the risks of Covid-19**.
- **Biodiversity Crisis:**
 - Among its many findings, the 'Global Assessment Report on Biodiversity and Ecosystem Services' of the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** highlighted that **one million species were at risk of extinction** and that 100 million hectares of tropical forest were lost from 1980 to 2000.
 - At the same time, **climate change is jeopardizing the resilience of forest ecosystems** and their ability to support ecosystem services worldwide.
 - Though forests offer nature-based solutions to overcome these concurrent global challenges, they have also never been more at risk.
- **Suggestions:**
 - The resilient recovery from the Covid-19 pandemic along with responses to the climate and biodiversity crises **must be rooted in the world's forests**.
 - Forests and forest-dependent people are both a casualty and an important part of the solution.
 - **Sustainably resourced and managed forests** can bolster employment, disaster risk reduction, food security and social safety nets, for starters.
- Forest can also protect biodiversity and advance both climate mitigation and adaptation.
- With regard to global health, safeguarding and restoring forests are among the environmental actions that **can reduce the risk of future zoonotic disease outbreaks**.
- The report called for a future course of action that included **greater sustainability and a greener and more inclusive economy** to tackle the threats of Covid-19, climate change and the biodiversity crisis faced by forests.

Status of World Forest

- **Total Forest Area:** According to the **Global Forest Resources Assessment 2020 (FRA 2020)** report, the **world's total forest area is 4.06 billion hectares (bha)**, which is 31% of the total land area. This area is equivalent to 0.52 hectares per person.
- **Top Countries in Forest Cover** — the Russian Federation, Brazil, Canada, the United States of America and China constituted more than 54% of the world's forests.

Forest in India

- According to the **India State of Forest Report, 2019**, the **Total Forest and Tree cover is 24.56%** of the geographical area of the country.
- **Forest Cover (Area-wise):** Madhya Pradesh > Arunachal Pradesh > Chhattisgarh > Odisha > Maharashtra.
- **National Forest Policy of India, 1988** envisages a goal of achieving 33% of the geographical area of the country under forest and tree cover.

United Nations Strategic Plan for Forests 2017–2030

- The United Nations Strategic Plan for Forests 2017-2030 was created with a mission to promote sustainable forest management and enhance the contribution of forests and trees to the **2030 Agenda for Sustainable Development**.
- The agreement on the first-ever UN Strategic Plan for Forests was **forged at a special session of the UN Forum on Forests held in January 2017** and provides an ambitious vision for global forests in 2030.
- **Goals and Targets:** It features a **set of six Global Forest Goals** and **26 associated targets** to be reached by 2030, which are **voluntary and universal**.

Note:

- It includes a target to increase forest area by **3% worldwide by 2030**, signifying an increase of 120 million hectares, an area over twice the size of France.
- It builds on the vision of the 2030 Agenda and recognizes that real change requires decisive, collective action, within and beyond the UN System.



United Nations Strategic Plan for Forests 2017–2030

GLOBAL FOREST GOALS

IMFN.NET

Canada

Produced by the International Model Forest Network with support from the Government of Canada

Assam Earthquake

Why in News

Recently, a powerful earthquake measuring 6.4 on the Richter Scale jolted Assam and other parts of Northeast.

- According to the **National Centre for Seismology (NCS)** report, the tremors have been attributed to **Kopili Fault zone closer to Himalayan Frontal Thrust (HFT)**.
 - NCS is the **nodal agency of the Government of India for monitoring earthquake activity in the country**. It comes under the **Ministry of Earth Sciences**.

Key Points

- **Himalayan Frontal Thrust (HFT):**
 - HFT, also known as the **Main Frontal Thrust (MFT)**, is a geological fault along the boundary of the **Indian and Eurasian tectonic plates**.

Earthquake

- An earthquake in simple words is the shaking of the earth. It is a natural event. It is caused due to release of energy, which generates waves that travel in all directions.
- The vibrations called **seismic waves** are generated from earthquakes that travel through the Earth and are recorded on instruments called seismographs.
- The location below the earth's surface where the earthquake starts is called the **hypocenter**, and the location directly above it on the surface of the earth is called the **epicenter**.
- **Types of Earthquake:** Fault Zones, Tectonic Earthquakes, Volcanic Earthquake, Human Induced Earthquakes.

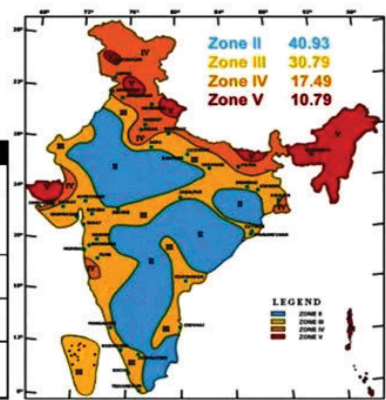
Seismic Hazard Map of India

- India is one of the highly earthquake affected countries because of the presence of technically active young fold mountains - Himalaya.
- India has been divided into **four seismic zones (II, III, IV, and V)** based on scientific inputs relating to seismicity, earthquakes occurred in the past and tectonic setup of the region.
 - Previously, earthquake zones were divided into five zones with respect to the severity of the earthquakes but the **Bureau of Indian Standards (BIS)** grouped the country into four seismic zones by unifying the first two zones.
 - BIS is the official agency for publishing the seismic hazard maps and codes.

Seismic Zone Map of India: -2002

About **59 percent** of the land area of India is liable to seismic hazard damage

Zone	Intensity
Zone V	Very High Risk Zone Area liable to shaking Intensity IX (and above)
Zone IV	High Risk Zone Intensity VIII
Zone III	Moderate Risk Zone Intensity VII
Zone II	Low Risk Zone VI (and lower)



Seismic Zone II:

- Area with minor damage earthquakes corresponding to intensities V to VI of MM scale (MM-Modified Mercalli Intensity scale).

Note:



drishti

➤ **Seismic Zone III:**

- Moderate damage corresponding to intensity VII of MM scale.

➤ **Seismic Zone IV:**

- Major damage corresponding to intensity VII and higher of MM scale.

➤ **Seismic Zone V:**

- Area determined by pro seismically of certain major fault systems and is seismically the most active region.
- Earthquake zone V is the most vulnerable to earthquakes, where historically some of the country's most powerful shocks have occurred.
- Earthquakes with magnitudes in excess of 7.0 have occurred in these areas, and have had intensities higher than IX.

➤ **Kopili Fault Zone:**

- The Kopili fault zone is a 300 km long and 50 km wide lineament (linear feature) extending from the **western part of Manipur up to the tri-junction of Bhutan, Arunachal Pradesh and Assam.**
- The area is seismically very active falling in the highest **Seismic Hazard zone V** associated with collisional tectonics where **Indian plate subducts beneath the Eurasian Plate.**

- Subduction is a geological process in which one crustal plate is forced below the edge of another.
- Squeezed between the subduction and collision zones of the Himalayan belt and Sumatran belt, the North East is highly prone to earthquake occurrences.

➤ **Fault:**

- A fault is a fracture along which the blocks of crust on either side have moved relative to one another parallel to the fracture.
- When an earthquake occurs, the rock on one side of the fault slips with respect to the other.
- The fault surface can be **vertical, horizontal, or at some angle to the surface of the earth.**

➤ **Tectonic Plates:**

- A **tectonic plate** (also called lithospheric plate) is a massive, irregularly-shaped slab of solid rock, generally composed of both continental and oceanic lithosphere.
- A tectonic plate may be a continental plate or an oceanic plate, depending on which of the two occupies the larger portion of the plate.
- The Pacific plate is largely an oceanic plate whereas the Eurasian plate is a continental plate.

Note:

Art & Culture

Highlights

- World Heritage Day
- Lingaraja Temple
- Mahavir Jayanti

World Heritage Day

Why in News

Every year, **18th April** is celebrated as 'International Day for Monuments and Sites', also known as 'World Heritage Day'.

- The **theme** for the year 2021 is "**Complex Pasts: Diverse Futures**".

Key Points

- **Background:**
 - The **International Council on Monuments and Sites** (ICOMOS) established the day in 1982 and the United Nations Educational, Scientific and Cultural Organization (UNESCO) approved it in 1983.
 - The aim of the Day is to create **awareness about Heritage among communities**.
- **UNESCO's World Heritage Sites:**
 - A **World Heritage Site** is a place that is listed by UNESCO for its special cultural or physical significance.
 - The list of World Heritage Sites is maintained by the international '**World Heritage Programme**', administered by the UNESCO World Heritage Committee.
 - This is embodied in an international treaty called the **Convention concerning the Protection of the World Cultural and Natural Heritage**, adopted by UNESCO in 1972.
- **World Heritage Sites in India:**
 - Currently, there are **38 World Heritage Sites located in India**.
 - Of these, **30 are 'cultural'**, such as the Ajanta Caves, Fatehpur Sikri, Hampi monuments and the Mountain

Railways of India, and **7 are 'Natural'**, including Kaziranga, Manas and Nanda Devi National Parks.

- In 2019, '**Jaipur City**' became the 38th addition to the India list under 'Culture'.
- **One** is classified as '**Mixed**', the **Khangchendzonga National Park**.

UNESCO

- It was founded in 1945 to develop the "intellectual and moral solidarity of mankind" as a means of building lasting peace. It is located in **Paris, France**.
- **Major Initiatives of UNESCO:**
 - **Man and Biosphere Programme**
 - **World Heritage Programme**
 - **Global Geopark Network**
 - **Network of Creative Cities**
 - **Atlas of World Languages in Danger**

ICOMOS

- It is a **global non-governmental organization** associated with **UNESCO**. It is located in **Paris, France**.
- Its mission is to promote the conservation, protection, use and enhancement of monuments, building complexes and sites.
- It is an **Advisory Body of the World Heritage Committee** for the implementation of the **World Heritage Convention of UNESCO**.
 - As such, it reviews the nominations of cultural world heritage and ensures the conservation status of properties.
- Its **creation in 1965** is the logical outcome of initial conversations between architects, historians and international experts that began in the early twentieth century and that materialized in the adoption of the **Venice Charter in 1964**.

Note:

Lingaraja Temple

Why in News

Recently, the Odisha Government has restricted public entry into the **Lingaraj Temple** after four sevayats (priests) tested positive for the **novel coronavirus**.

- In **August 2020**, the government had decided to give a **facelift to the temple, akin to its pre-350-year structural status**.

Key Points

- Lingaraj Temple, **built in 11th century AD**, is **dedicated to Lord Shiva** and is considered as the **largest temple of the city Bhubaneswar (Odisha)**.
- It is believed to have been **built by the Somvanshi King Yayati I**.
- It is **built in red stone** and is a classic example of **Kalinga style of architecture**.
 - The temple is **divided into four sections** - **Garbha Griha** (sanctum sanctorum), **Yajna Shala** (the hall for prayers), **Bhoga Mandap** (the hall of offering) and **Natya Shala** (hall of dance).
- The sprawling temple complex has **one hundred and fifty subsidiary shrines**.
- Lingaraj is referred to as **“Swayambhu”** – self-originated Shivaling.
- Another important aspect of the temple is that it **signifies the syncretisation of Shaivism and Vaishnavism sects in Odisha**.
 - Perhaps the rising cult of Lord Jagannath (considered an incarnation of Lord Vishnu) which coincided with the completion of the Lingaraj Temple had a role to play.
 - The **presiding deity in the Temple is known as Hari-Hara**; Hari denotes Lord Vishnu and Hara meaning Lord Shiva.
- The temple is **out of bounds for non-Hindus**.
- The other attraction of the temple is the **Bindusagar Lake**, located in the north side of the temple.
- On the western banks of Bindusagar, lies the **garden of Ekamra Van** named after the Hindu mythological texts where Bhubaneswar the capital city of Odisha was referred as **Ekamra Van** or a forest of a single mango tree.
- **Other Important Monuments in Odisha:**
 - **Konark Sun Temple (UNESCO World Heritage Site)**

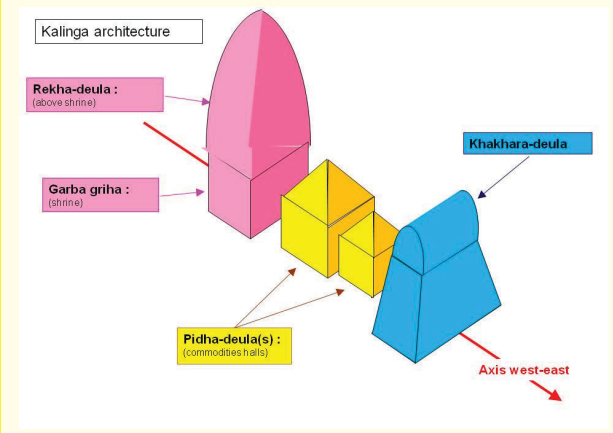
Kalinga Architecture

➤ About:

- The Indian temples are broadly divided into **Nagara, Vesara, Dravida and Gadag styles of architecture**.
- However, the **temple architecture of Odisha corresponds to altogether a different category** for their unique representations called **Kalinga style of temple architecture**.
- This style **broadly comes under the Nagara style**.

➤ The Architecture:

- In Kalinga Architecture, basically a **temple is made in two parts**, a tower and a hall. The **tower is called deula** and the **hall is called jagmohan**.
- The **walls of both the deula and the jagmohan are lavishly sculpted** with architectural motifs and a profusion of figures.
- The most repeated form is the **horseshoe shape**, which has come from the earliest times, starting with the large windows of the chaitya-grihas.
- It is the **deula which makes three distinct types** of temples in Kalinga Architecture:
 - **Rekha Deula**.
 - **Pidha Deula**.
 - **Khakhara Deula**.
- The former two are associated with Vishnu, Surya and Shiva temples while the third is mainly with Chamunda and Durga temples.
- The **Rekha Deula and Khakhara Deula** houses the sanctum sanctorum while the **Pidha Deula** constitutes outer dancing and offering halls.



- **Jagannath Temple**
- **Tara Tarini Temple**
- **Udaygiri and Khandagiri Caves**

Note:

Mahavir Jayanti

Why in News

The Prime Minister of India greeted the people on occasion of 'Mahavir Jayanti' (25th April 2021).

- Mahavir Jayanti is one of the most auspicious festivals in the Jain community.

Key Points

➤ About Mahavir Jayanti:

- This day marks the birth of Vardhamana Mahavira, who was the 24th and the last Tirthankara and who succeeded the 23rd Tirthankara, Parshvanatha.
- According to Jain texts, Lord Mahavira was born on the 13th day of the bright half of the moon in the month of Chaitra.
 - As per the Gregorian calendar, it is usually celebrated in the month of March or April.
- **Celebration:** Usually, a procession is called with the idol of Lord Mahavira called the Rath Yatra. Reciting stavans or Jain prayers, statues of the lord are given a ceremonial bath called abhisheka.

➤ About Lord Mahavira:

- Mahavira was born to King Siddhartha of Kundagrama and Queen Trishala, a Lichchavi princess in the year 540 BC in the Vajji kingdom, identical with modern day Vaishali in Bihar.
- Mahavira belonged to the Ikshvaku dynasty.
- Lord Mahavir was named Vardhamana, which means "one who grows".
- He abandoned worldly life at the age of 30 and attained 'kaivalya' or omniscience at the age of 42.
- Mahavira taught ahimsa (non-violence), Satya (truth), asteya (non-stealing), brahmacharya (chastity) and aparigraha (non-attachment) to his disciples and his teachings were called Jain Agamas.
- Ordinary people were able to understand the teachings of Mahavira and his followers because they used Prakrit.
- It is believed that the Mahavira passed away and attained moksha (liberation from the cycle of birth and death) at the age of 72 in 468 BC at a place called Pavapuri near modern Rajgir in Bihar.

Jainism

- The word Jaina comes from the term Jina, meaning conqueror.
- Tirthankara is a Sanskrit word meaning 'Ford maker', i.e., one who is able to ford the river, to cross beyond the perpetual flow of earthly life.
- Jainism attaches utmost importance to ahimsa or non-violence.
- It preaches 5 mahavratas (the 5 great vows):
 - Ahimsa (Non-violence)
 - Satya (Truth)
 - Asteya or Acharya (Non-stealing)
 - Aparigraha (Non-attachment/Non-possession)
 - Brahmacharya (Celibacy/Chastity)
- Among these 5 teachings, the Brahmacharya (Celibacy/Chastity) was added by Mahavira.
- The three jewels or Triratna of Jainism include:
 - Samyak Darshana (right faith).
 - Samyak Gyana (right knowledge).
 - Samyak Charitra (right conduct).
- Jainism is a religion of self-help.
 - There are no gods or spiritual beings that will help human beings.
 - It does not condemn the varna system.
- In later times, it got divided into two sects:
 - Shvetambaras (white-clad) under Sthalabahu.
 - Digambaras (sky-clad) under the leadership of Bhadrabahu.
- The important idea in Jainism is that the entire world is animated: even stones, rocks, and water have life.
- Non-injury to living beings, especially to humans, animals, plants, and insects, is central to Jaina philosophy.
- According to Jain teachings, the cycle of birth and rebirth is shaped through karma.
- Asceticism and penance are required to free oneself from the cycle of karma and achieve the liberation of the soul.
- The practice of Santhara is also a part of Jainism.
 - It is the ritual of fasting unto death. Svetambara Jains call it Santhara whereas Digambaras call it Sallekhana.



Note:

Social Issues

Highlights

- Global Diabetes Compact: WHO
- World Population Report 2021: UNFPA
- Gender Bias and Inclusion in Advertising in India Report: UNICEF
- World Malaria Day 2021
- Antimicrobial Resistance: Threat to Global Health Security
- Immunisation Agenda 2030

Global Diabetes Compact: WHO

Why in News

The **World Health Organization (WHO)** launched a **Global Diabetes Compact** to better fight the disease while marking the centenary of the discovery of **insulin**.

- The programme was **launched at the Global Diabetes Summit** co-hosted by the Government of Canada.

Key Points

- **Global Diabetes Compact:**
 - The Global Diabetes Compact has the **vision of reducing the risk of diabetes**, and ensuring that all people who are diagnosed with diabetes have **access to equitable, comprehensive, affordable and quality treatment and care**.
 - It will also **support the prevention of type 2 diabetes** from obesity, unhealthy diet and physical inactivity.
 - It will set standards for tackling the diseases in the form of '**global coverage targets**' for ensuring a wider reach of diabetes care.
 - A key aim of the program is to unite key stakeholders from the public and private sectors, and, critically, people who live with diabetes, around a common agenda, to generate new momentum and co-create solutions.
- **Diabetes:**
 - **Diabetes** is a **Non-Communicable Disease (NCD)** that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces.

- It is classified into two types:

- **Type 1 Diabetes:** It occurs when the pancreas fails to produce sufficient insulin.
- **Type 2 Diabetes:** Type 2 diabetes is the most common type of diabetes. In this condition the body does not use insulin properly. This is called insulin resistance. The main reason for the occurrence of type 2 diabetes is due to obesity and lack of exercise.

Insulin

- Insulin is a peptide hormone secreted by Pancreas which helps in maintaining normal blood glucose levels by facilitating cellular glucose uptake, regulating carbohydrate, lipid and protein metabolism and promoting cell division and growth through its mitogenic effects.
- It was **discovered in 1921** by orthopedic surgeon Dr. Frederick Banting and medical student Charles Best, from the University of Toronto.
- Dr. Banting later won the Nobel Prize for this discovery in 1923 along with Professor McLeod who was a Professor of Carbohydrate Metabolism.

Global Burden of Diabetes:

- Today, approximately 6% of the world's population – more than 420 million people – live with either **type 1 or type 2 diabetes**.
- It is the only major non-communicable disease for which the risk of dying early is going up, rather than down.
- It has emerged as one of the major comorbid conditions linked to severe Covid-19 infections.
 - The International Diabetes Federation Diabetes Atlas, in 2019, placed India among the top 10 countries for people with diabetes.

Note:

➤ **Steps Taken by Government of India:**

- **India's National Non-Communicable Disease (NCD) Target** is to prevent the rise in obesity and diabetes prevalence.
- **National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) in 2010**, to provide support for diagnosis and cost-effective treatment at various levels of health care.

World Population Report 2021: UNFPA

Why in News

Recently, the **United Nations Population Fund's (UNFPA)** flagship State of **World Population Report 2021** titled '**My Body is My Own**' was launched.

- This is the first time a **United Nations** report has **focused on bodily autonomy**, defined as the power and agency to make choices about your body without fear of violence or having someone else decide for you.

Key Points

➤ **Violation of Bodily Autonomy:**

- **About:**
 - The principle of bodily integrity sums up the **right of each human being, including children, to autonomy and self-determination over their own body**. It considers an unconsented physical intrusion as a **human rights** violation.
 - While the principle has traditionally been raised in connection with practices such as torture, inhumane treatment and forced disappearance, **bodily integrity has the potential to apply to wide range of human rights violations, which also affect children's civil rights**.
 - Under its ambit also fall **people with disabilities** stripped of their rights to self-determination, to be free from violence and to enjoy a safe and satisfying sexual life.
- **Some Examples:**
 - **Child marriage**.
 - Female genital mutilation.
 - Lack of contraceptive choices leading to unplanned pregnancy.

- Unwanted **sex exchanged for a home and food**.
- When **people with diverse sexual orientations and gender identities** cannot walk down a street without fearing assault or humiliation.

➤ **Global Scenario:**

- **Right to Make Decisions Regarding Own Body:**
 - Nearly **half the women from 57 developing countries** do not have the right to make decisions regarding their bodies, including using contraception, seeking healthcare or even on their sexuality.
 - Only **75% of countries legally ensure full and equal access to contraception**.
- **Effect of Covid:**
 - Women around the world are denied the fundamental right of bodily autonomy with the **Covid-19 pandemic** further exacerbating this situation.

➤ **Indian Scenario:**

- In India, according to **National Family Health Survey (NFHS)-4 (2015-2016)**:
 - **Healthcare:**
 - **12% of currently married women (15-49 years of age) independently make decisions** about their own healthcare.
 - **63% decide in consultation with their spouse**.
 - For **23%** it is the **spouse that mainly takes decisions** about healthcare.
 - **Contraceptives:**
 - **8% of currently married women (15-49 years) take decisions on the use of contraception independently**.
 - **83% decide jointly with their spouse**. Information provided to women about use of contraception is also limited.
 - **47% of women** using a contraceptive **were informed about the side effects of the method**.
 - **54% women were provided information** about other contraceptives.
- **Some Women Related Data from NFHS-5:**
 - **Contraception:**
 - **Overall Contraceptive Prevalence Rate (CPR)** has **increased substantially** in most States/UTs and it is the highest in HP and WB (74%).

Note:



drishti

- **Domestic Violence:**
 - It has **generally declined** in most of the states and UTs.
 - However, it has witnessed an **increase in five states**, namely Sikkim, Maharashtra, Himachal Pradesh, Assam and Karnataka.
- **Decision making related to health, major household purchases and visiting relatives:**
 - Bihar has reported the maximum increase from 75.2% in NFHS-4 (2015-2016) to **86.5% in NFHS-5 (2019-2020)**.
 - Almost **99% of women in Nagaland** participate in household decision-making, followed by Mizoram at 98.8%.
 - On the other hand, **Ladakh and Sikkim reported the biggest decrease in women's participation** in decision-making, with a 7-5% drop among married women.

➤ **Related Supreme Courts (SC) Judgement:**

- **Justice K S Puttaswamy v Union of India 2017:**
 - The **SC** held that reproductive rights include a woman's entitlement to carry a pregnancy to its full term, to give birth, and to subsequently raise children; and that these rights form part of a woman's right to privacy, dignity, and bodily integrity.
- The judgement gave required impetus to resolve the potential constitutional challenges to **abortion** and **surrogacy**.
 - Recently, the **Medical Termination of Pregnancy (MTP) (Amendment) Bill, 2020** was passed which seeks to **extend the termination of pregnancy period from 20 weeks to 24 weeks**, making it easier for women to safely and legally terminate an unwanted pregnancy.

United Nations Population Fund

➤ **About:**

- It is a **subsidiary organ** of the **UN General Assembly** and works as a sexual and reproductive health agency.
- The **UN Economic and Social Council (ECOSOC)** establishes its mandate.

➤ **Establishment:**

- It was established as a trust fund in 1967 and began operations in 1969.
- In **1987, it was officially renamed the United Nations Population Fund** but the original abbreviation, 'UNFPA' for the United Nations Fund for Population Activities was retained.

➤ **Objective:**

- UNFPA works directly to tackle **Sustainable Development Goals** on health (SDG3), education (SDG4) and gender equality (SDG5).

➤ **Fund:**

- UNFPA is not supported by the UN budget, instead, it is entirely **supported by voluntary contributions of donor governments, intergovernmental organizations, the private sector, foundations and individuals**.

Gender Bias and Inclusion in Advertising in India Report: UNICEF

Why in News

Recently, the **United Nations Children's Fund (UNICEF)** and the **Geena Davis Institute on Gender in Media (GDI)** released a report titled "**Gender Bias and Inclusion In Advertising In India**".

- The research has shown that while **ads in India are superior to global benchmarks** in so far as **girls and women have parity of representation** in terms of screen and speaking time, **their portrayal is problematic as they further gender stereotypes**.
- **GDI** is a **non-profit research organization** that researches gender representation in media and advocates for equal representation of women.

Key Points

➤ **Gender and Prominence:**

- **About:**
 - While girls and women have a strong presence in Indian advertising, they are **mostly reinforcing traditional gender roles** by selling domestic and beauty products to female consumers.
- **Impact:**

Note:

- This is **problematic because of the intergenerational transfer of norms to children**, including a lack of empowering role models for men undertaking domestic work in the home and women working in the paid workforce.
- **Stereotyping Physical and Mental Capability:**
 - **About:**
 - **Decision Making:**
 - **Male characters are more likely to be shown making decisions about their future than female characters** (7.3% compared with 4.8%), the latter are twice as likely to be shown making household decisions than male characters (4.9% compared with 2.0%).
 - **Colourism:**
 - Two-thirds of **female characters (66.9%) in Indian ads have light or medium-light skin tones** — a higher percentage than male characters (52.1%).
 - This is problematic because **this advances the discriminatory notion** that light skin tones are more attractive.
 - **Objectification:**
 - Female characters are nine times **more likely to be shown as “stunning/very attractive”** than male characters (5.9% compared with 0.6%).
 - Female **characters are also invariably thin**, but male characters appear with a variety of body sizes in Indian advertising.
 - **Impact:**
 - Sexual objectification has serious consequences in the real world. The more girls and women internalize the idea that their primary value comes from being a sex object, the **higher their rates of depression, body hatred and shame, eating disorders, and a host of other personal impacts.**
- **Recommendations:**
 - **To Governing Bodies:**
 - Establish **guidelines** for advertising with benchmarks for **equitable representation for girls and women and promoting positive gender norms, including around leadership and body attitudes.**
 - Establish **skin color guidelines and caste/class guidelines.**

- Promote **diverse templates of beauty** rather than regressive beauty norms of women and girls being only fair, thin, etc.
- Advocate with advertisers to see value add in **diversifying representation in gender, skin tone, and caste/class benchmarks** to help promote brand equity and expand the consumer base.
- **To Content Creators:**
 - Need to be more **sensitive and aware towards gender representation.**

Gender Equality in India

- Gender equality in India **has made gains** as a result of legislative and policy measures, social-protection schemes for girls and adolescents and gender sensitive budgets over past years.
 - **Some Indian Initiatives Related to Girls: Beti Bachao Beti Padhao Scheme, Scheme for Adolescent Girls (SAG), Sukanya Samridhi Yojana, etc.**
- India **has attained gender parity in primary enrolment** and boosted female literacy from 54% (2001) to 66% (2011).
- **India ranks 108th out of 153 countries in the global gender inequality index in 2020**, an increase since 2015 when it was ranked 130th out of 155 countries.
- India is **among one of the few countries where under-5 mortality rates among girls is higher than boys.**
- **Gender-based discrimination and normalization of violence** continues to be a challenge. Many women face overlapping social, emotional, physical, economic, cultural and caste related deprivations.
- **Adolescent girls face vulnerabilities**, including poor nutritional status, increased burden of care, early marriage and early pregnancy, and issues related to reproductive health and empowerment while 56% are anemic.

World Malaria Day 2021

Why in News

- The report, titled ‘**Zeroing in on malaria elimination**’, was released by the **World Health Organization (WHO)** ahead of **World Malaria Day 2021.**
- World Malaria Day is observed on **25th April every year.** The 2021 theme is “Reaching the Zero Malaria target”.

Note:

- The WHO has also identified 25 countries with the potential to eradicate malaria by 2025 under its 'E-2025 Initiative'.

Key Points

➤ Malaria:

○ About:

- **Malaria** is a life-threatening mosquito borne blood disease caused by plasmodium parasites. It is predominantly found in the tropical and subtropical areas of Africa, South America as well as Asia.
- The parasites spread through the bites of infected female *Anopheles* mosquitoes.
 - After entering the human body, parasites initially multiply within the liver cells and then attack the Red Blood Cells (RBCs) resulting in their rupture.
- There are 5 parasite species that cause malaria in humans, and 2 of these species – *Plasmodium falciparum* and *Plasmodium vivax* – pose the greatest threat.
- **Symptoms** of malaria include fever and flu-like illness, including shaking chills, headache, muscle aches, and tiredness.
- It is preventable as well as curable.

○ Malaria Vaccine:

- Known by its lab initials as **RTS,S** but branded as Mosquirix, the vaccine has passed lengthy scientific trials that found it to be safe and reducing the risk of malaria by nearly 40%, the best ever recorded.
- It was developed by GlaxoSmithKline (GSK) company and approved by the European Medicines Agency in 2015.
- The RTS,S vaccine trains the immune system to attack the malaria parasite (*P.* falciparum, the most deadly species of the malaria parasite).

➤ E-2025 Initiative:

- In 2017, WHO launched the **E-2020 initiative** to support a group of countries to achieve zero indigenous cases of malaria by 2020.
- Some 21 countries across five regions were identified as having the potential to reach the milestone of eliminating malaria.

- The report '**Zeroing in on malaria elimination**' brings out the progress made through the E-2020 initiative of WHO.

- Building on the successes of the E-2020, **WHO has identified a new group of 25 countries** that have the potential to stamp out malaria within a 5-year timeline.

- The E-2025 countries **will receive technical and on-the-ground support by WHO** and its partners. In return, they are expected to audit their elimination programmes annually, participate in elimination forums, conduct surveillance assessments, and share malaria case data periodically.

- The **new countries were selected based on four criteria:**

- The establishment of a government-endorsed elimination plan;
- Meeting the threshold of malaria case reductions in recent years;
- Having the capacity of malaria surveillance and a designated governmental agency responsible for malaria elimination; and
- Being selected by the WHO Malaria Elimination Oversight Committee.

➤ India's Scenario:

- **Malaria Burden:** The **World Malaria Report (WMR) 2020** released by WHO, which gives the estimated cases for malaria across the world, indicates that India has made considerable progress in reducing its malaria burden.

- India is the only high endemic country which has reported a decline of 17.6% in 2019 as compared to 2018.

○ Initiatives Taken:

- In 2017, India launched its 5-year **National Strategic Plan for Malaria Elimination** that shifted focus from Malaria control to elimination and provided a roadmap to end malaria in 571 districts out of India's 678 districts by 2022.
- Indian Council of Medical Research (ICMR) has recently established '**Malaria Elimination Research Alliance-India (MERA-India)**' which is a conglomeration of partners working on malaria control.

Note:



drishti

Antimicrobial Resistance: Threat to Global Health Security

Why in News

Antimicrobial resistance (AMR) is a growing global problem to which the ongoing **Covid-19** pandemic may further contribute.

- With resources deployed away from antimicrobial stewardship, evidence of substantial preemptive antibiotic use in Covid-19 patients and indirectly, with deteriorating economic conditions fuelling poverty potentially impacting on levels of resistance, AMR threat remains significant.

Key Points

- **Antimicrobial Resistance (Meaning):**
 - Antimicrobial resistance is the **resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs** (such as antibiotics, antifungals, antivirals, antimalarials, and anthelmintics) that are used to treat infections.
 - As a result, **standard treatments become ineffective**, infections persist and may spread to others.
 - **Microorganisms that develop antimicrobial resistance** are sometimes referred to as “superbugs”.
- **Basis of Antimicrobial Resistance:**
 - **Some bacteria due to the presence of resistance genes** are intrinsically resistant and therefore survive on being exposed to antibiotics.
 - Bacteria **can also acquire resistance**. This can happen in **two ways**:
 - By **sharing and transferring resistance genes** present in the rest of the population, or
 - By **genetic mutations** that help the bacteria survive antibiotic exposure.
- **Reasons for Spread of Antimicrobial Resistance:**
 - The **misuse of antimicrobials in medicine** and inappropriate use in **agriculture**.
 - **Contamination around pharmaceutical manufacturing sites** where untreated waste releases large amounts of active antimicrobials into the environment.
- **Concerns:**

- AMR is **already responsible for up to 7,00,000 deaths a year**.
- A **threat to prevention and treatment of infections** - medical procedures such as organ transplantation, cancer chemotherapy, diabetes management and major surgery (for example, caesarean sections or hip replacements) become very risky.
- **Increases the cost of healthcare** with lengthier stays in hospitals, additional tests and use of more expensive drugs.
- It is **putting the gains of the Millennium Development Goals at risk** and **endangers achievement of the Sustainable Development Goals**.
- **No new classes of antibiotics** have made it to the market in the last three decades, largely **on account of inadequate incentives** for their development and production.
- Without urgent action, we are **heading to antibiotic apocalypse** – a future without antibiotics, with bacteria becoming completely resistant to treatment and when common infections and minor injuries could once again kill.
- **AMR in India:**
 - India, with its combination of **large population**, rising incomes that facilitate **purchase of antibiotics**, high **burden of infectious diseases** and easy over-the-counter access to antibiotics, is an important locus for the generation of resistance genes.
 - The multi-drug resistance determinant, **New Delhi Metallo-beta-lactamase-1 (NDM-1)**, emerged from this region to spread globally.
 - Africa, Europe and other parts of Asia have also been affected by multi-drug resistant typhoid originating from South Asia.
 - In India, **over 56,000 newborn deaths each year** due to sepsis are caused by organisms that are resistant to first line antibiotics.
 - India has undertaken **many activities** like **Mission Indradhanush** — to address low vaccination coverage — strengthened micro-planning and additional mechanisms to improve monitoring and accountability.
 - The Ministry of Health & Family Welfare (MoHFW) **identified AMR as one of the top 10 priorities** for the ministry’s collaborative work with the World Health Organisation (WHO).

Note:

- India has also launched the **National Action Plan on AMR resistance 2017-2021**.

Way Forward

- Since microbes will inevitably continue to evolve and become resistant even to new antimicrobials, we need **sustained investments and global coordination** to detect and combat new resistant strains on an ongoing basis.
- **Efforts to control prescription of antimicrobials should be accompanied by efforts to educate consumers** to reduce inappropriate demand, issue standard treatment guidelines that would empower providers to stand up to such demands, as well as provide point-of-care diagnostics to aid clinical decision-making.
- In addition to developing new antimicrobials, **infection-control measures** can reduce antibiotic use. It is critical to ensure that all those who need an antimicrobial have access to it.
- To track the spread of resistance in microbes, **surveillance measures** to identify these organisms need to expand beyond hospitals and encompass livestock, wastewater and farm run-offs.

Immunisation Agenda 2030

Why in News

Recently, the **United Nations** and other agencies have launched the **Immunisation Agenda 2030 (IA2030)** during the **World Immunisation Week**.

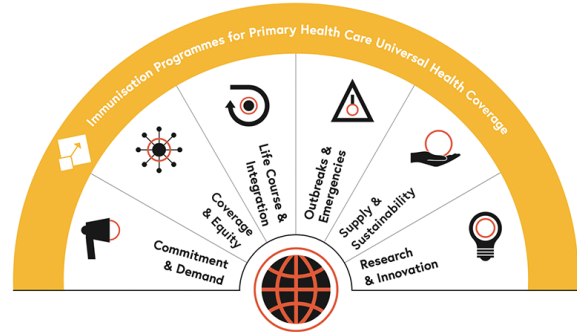
- It will contribute to achieving the **UN-mandated Sustainable Development Goals** specifically **SDG 3** i.e. **Good Health and Well being**.
- **Covid-19** pandemic has **affected routine immunization globally**.

Key Points

- **About the Immunisation Agenda 2030 (IA2030):**
 - It sets an ambitious, overarching global vision and **strategy for vaccines and immunization for the decade 2021–2030**.
 - The IA2030 is **based on learnings from Global Vaccine Action Plan (GVAP)**. It aims to **address the unmet targets of the GVAP** that were initially to be fulfilled as part of the global immunisation strategy of the '**Decade of vaccines**' (2011–2020).

- **GVAP** was developed to help realize the vision of the **Decade of Vaccines**, that all individuals and communities enjoy lives free from vaccine preventable diseases.

- It is **based on a conceptual framework of seven strategic priorities**, to ensure that immunization fully contributes to stronger **primary health care** and attainment of **universal health coverage**.
- It is underpinned by **four core principles**: it puts people in the centre, is led by countries, implemented through broad partnerships, and driven by data.



Targets of IA2030:

- As part of this new immunisation programme, global agencies like the **World Health Organization (WHO)**, **UNICEF** and others have set a target of **avoiding 50 million vaccine-preventable infections in this decade**.
- It also intends to **reduce the number of zero-dose children by 50%**.
 - **Zero-dose children** are those who have received no vaccines through immunisation programmes.
- To achieve **90% coverage for essential vaccines** given in childhood and adolescence.
- To complete **500 national or subnational introductions of new or under-utilized vaccines** - such as those for **Covid-19, rotavirus**, or human papillomavirus (HPV).
- The UN agencies aim to ensure through IA2030 that the **benefits of immunisation are shared equitably among and within countries**.
- **Priority Section of the Population:**
 - The new programme will focus on a '**bottoms-up**' approach, in contrast to the GVAP that followed a 'top-down' one.
 - It will give priority to populations that are **not currently being reached, particularly the most**

Note:



drishti

marginalised communities, those living in fragile and conflict-affected settings and mobile populations, such as those moving across borders.

➤ **India's Initiatives on Immunization:**

- Recently, the **Intensified Mission Indradhanush (IMI) 3.0 scheme** has been rolled out to cover children and pregnant women who missed routine immunisation during the Covid-19 pandemic.
 - The Immunization Programme in India was introduced in 1978 as 'Expanded Programme of Immunization (EPI) by the Ministry of Health and Family Welfare. In 1985, the Programme was modified as '**Universal Immunization Programme (UIP)**'.
- India is also the **major supplier to COVAX**, a global initiative aimed at equitable access to Covid-19 vaccines led by UNICEF, Gavi (The Vaccine Alliance), the World Health Organization, the Coalition for Epidemic Preparedness and others.

- India also began its '**Vaccine Maitri**' to supply Covid vaccine to different nations.

World Immunisation Week

- World Immunization Week is celebrated **every year in the last week of April**.
- It **aims to promote the use of vaccines** to protect people of all ages against disease.
 - **Immunisation** describes the process whereby people are protected against illness caused by infection with microorganisms (formally called pathogens). The term **vaccine refers to the material used for immunisation**.
 - Immunization is a success story for global health and development, saving millions of lives every year.
 - The theme for 2021 is "**Vaccines bring us closer**".

drishti

Note:

Security

Highlights

- Advanced Chaff Technology
- Exercise VARUNA 2021
- Increase in World Military Spending during Covid-19: SIPRI
- Joint Logistics Node
- Tejas Adds Python-5 Air to Air Missile Capability

Advanced Chaff Technology

Why in News

The **Defence Research and Development Organisation (DRDO)** has developed an **Advanced Chaff Technology** to safeguard the naval ships against enemy missile attack.

- It is another step towards **Atmanirbhar Bharat**.

Key Points

- **About the Technology:**
 - Chaff is an **electronic countermeasure technology** used by militaries worldwide to **protect naval ships** or other sensitive targets **from radar and radio frequency (RF)** guiding mechanisms of the enemy missile.
 - The chaff rockets deployed in the air **reflect as multiple targets for the missile guidance systems** and deflecting adversary missiles, thus protecting their own assets.
 - **DRDO** has **indigenously developed** three variants of the critical technology namely **Short Range Chaff Rocket (SRCR)**, **Medium Range Chaff Rocket (MRCR)** and **Long Range Chaff Rocket (LRCR)**.
- **Difference between Chaff and Flares:**
 - Both **chaff and flares** are **defensive countermeasures** deployed by military aircraft. The purpose is to **confuse radar-guided or infrared-guided anti aircraft missiles** fired so that they could be diverted.
 - **Chaff** is **composed of many small aluminium or zinc coated fibres** stored on-board the aircraft in tubes. In case the aircraft feels threatened by any radar tracking missiles, chaff is ejected into the turbulent wake of air behind the plane.

- **Flares** on being fired **provide an alternate strong IR (Infrared) source** to heat-seeking anti-air missiles so that they are lured away from the aircraft.

Defence Research and Development Organisation

- DRDO works under the **administrative control of the Ministry of Defence**.
- It is working to establish a world class science and technology base for India and provides Defence Services decisive edge by equipping them with internationally competitive systems and solutions.
- It was **established in 1958** after combining Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).
- It is responsible for carrying out **Integrated Guided Missile Development Programme (IGMDP)**.

Some Recent Tests by DRDO

- **Hypersonic Technology Demonstrator Vehicle (HSTDV)**
- **Abhyas High-speed Expendable Aerial Target**
- **Laser-Guided Anti Tank Guided Missile**
- **BrahMos Missile**
- **Supersonic Missile Assisted Release of Torpedo (SMART) system**
- **Rudram**

Exercise VARUNA 2021

Why in News

The **19th edition of the Indian and French Navy bilateral exercise 'VARUNA-2021'** is being conducted in the **Arabian Sea**.

Note:



- Earlier this year, the Indian Navy took part for the first time in the France-led naval exercise **“La Pérouse”** with the navies of the US, Australia and Japan.

Key Points

- **About the Exercise:**
 - **Background:**
 - The Indian and French Navies have been conducting bilateral maritime exercises since **1993**. Since **2001**, these exercises have been called **‘VARUNA’**.
 - These interactions further underscore the shared values as partner navies, in **ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order**.
 - **2021 Exercise:**
 - This is the **first time that the United Arab Emirates (UAE) is participating** in the Varuna maritime exercise.
 - The ‘Varuna’ joint exercise is **part of the French carrier strike group’s ‘CLEMENCEAU 21’ deployment**, which the French Navy is conducting in the **eastern Mediterranean, the Gulf and the Indian Ocean (Arabian Sea)**.
 - Its goal is to **contribute to the stabilization of these strategic zones** and strengthening cooperation with the navies of partner countries, in particular India for the Indian Ocean component.
 - As part of this deployment, the **Carrier Strike Group** is also **taking part in anti-ISIS (the Islamic State of Iraq and Syria) operations**.
 - The exercise will see **high tempo-naval operations at sea**, including **advanced air defence and**

anti-submarine exercises, tactical manoeuvres, underway replenishment and other maritime security operations.

➤ Other Indo-French Joint Exercises:

- **Desert Knight-21** and **Garuda** (Air exercise)
- **Varuna** (Naval exercise)
- **Shakti** (Army exercise)

Major Indian Bilateral Maritime Exercises	
Name of the Exercise	Name of the Country
SLINEX	Sri Lanka
Bongosagar and IN-BN CORPAT	Bangladesh
JIMEX	Japan
Naseem-Al-Bahr	Oman
Indra	Russia
Za'ir-Al-Bahr	Qatar
Samudra Shakti	Indonesia
Indo-Thai CORPAT	Thailand
IMCOR	Malaysia
SIMBEX	Singapore
AUSINDEX	Australia

Increase in World Military Spending during Covid-19: SIPRI

Why in News

According to the latest data published by **Stockholm International Peace Research Institute (SIPRI)**, the military spending across the world rose to USD 1,981 billion in 2020, during **Covid-19 pandemic**.

- The **2.6% increase in world military spending** came in a year **when the global GDP shrank by 4.4%** largely due to the **economic impacts of the Covid-19 pandemic**.

Key Points

- **Global Scenario:**
 - **Military spending as a share of Gross Domestic Product (GDP)**, reached a global average of **2.4% in 2020**, up from **2.2% in 2019**.
 - The **five biggest spenders in 2020**, which together accounted for 62% of global military expenditure were: the **United States>China>India>Russia>the United Kingdom**.
 - **US: 2020 was the third consecutive year of growth in US military spending**, following seven years of continuous reductions.

Note:

- This reflects growing concerns over **perceived threats from strategic competitors such as China and Russia**, as well as the Trump administration's drive to bolster what it saw as a depleted US military.
- **China**: China's **spending has risen for 26 consecutive years**, the longest series of uninterrupted increases by any country in the SIPRI Military Expenditure Database.
- Nearly all members of the **North Atlantic Treaty Organization (NATO)** saw their **military burden rise in 2020**.
- The **countries with the biggest increases in military burden** among the top 15 spenders in 2020 were **Saudi Arabia, Russia, Israel and US**.
- **Regional Scenario:**
 - **Europe**: Military spending across Europe **rose by 4.0%** in 2020.
 - Germany and France were the 7th and 8th largest spender globally.
 - **Asia and Oceania**: In addition to **China, India** (USD 72.9 billion), **Japan** (USD 49.1 billion), **South Korea** (USD 45.7 billion) and **Australia** (USD 27.5 billion) were the **largest military spenders** in the Asia and Oceania region.
 - All four countries increased their military spending between 2019 and 2020 and over the decade 2011-20.
 - **Sub-Saharan Africa**: Military expenditure in sub-Saharan Africa **increased by 3.4%** in 2020 to reach USD 18.5 billion.
 - The biggest increases in spending were made by Chad, Mali, Mauritania and Nigeria, all in the **Sahel region**, as well as Uganda.
 - **South America**: Military expenditure in South America **fell by 2.1%**.
 - The decrease was **largely due to a 3.1% drop in spending by Brazil**, the sub region's largest military spender.
 - **Middle Eastern Countries**: The **combined military spending of the 11 Middle Eastern countries** for which SIPRI has spending figures **decreased by 6.5% in 2020**.
 - Eight of the nine members of the **Organization of the Petroleum Exporting Countries (OPEC)** for which SIPRI has figures cut their military spending in 2020.
 - Angola's spending fell by 12%, Saudi Arabia's by 10%, and Kuwait's by 5.9%.
 - **Non-OPEC oil exporter Bahrain** also cut its spending by 9.8%.
- **India's Scenario:**
 - **India** was the **third largest military spender** in the world in 2020, behind only the US and China.
 - India's **military expenditure was USD 72.9 billion** and it **accounted for 3.7% of the global military expenditure share**.
 - India's **spending since 2019 grew by 2.1%**. The increase **can be largely attributed to India's ongoing conflict with Pakistan** and renewed **border tension with China**.
 - The continuing military confrontation with China in eastern Ladakh, of course, **has led India to make several emergency arms purchases from abroad** since the crisis erupted in early May 2020.
 - India's annual military expenditure also **includes a huge pension bill for 33-lakh million veterans and defence civilians**.
 - In the 2021-2022 defence budget, for instance, the pension bill was Rs. 1.15 lakh crore out of the total Rs 4.78 lakh crore outlay.
 - India **has to maintain an over 15-lakh strong armed forces** because of the two active and unresolved borders with China and Pakistan.
 - Consequently, the revenue expenditure for the day-to-day running costs and salary bill in the defence budget by far **outstrips the capital outlay for military modernization**, leaving critical operational shortages on different fronts, ranging from fighters to submarines.
 - With a **weak domestic defence-industrial base**, India of course continues to languish in the strategically-vulnerable position of **being the world's second-largest arms importer just behind Saudi Arabia**.
 - India **accounted for 9.5% of the total global arms imports during 2016-2020**.

Stockholm

International Peace Research Institute

- This **think tank** is an **independent international institute** dedicated to research into conflict, armaments, arms control and disarmament.
- It was **established in 1966 at Stockholm (Sweden)**.

Note:

- It provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

Joint Logistics Node

Why in News

The **Chief of Defence Staff General Bipin Rawat** has operationalised the **third Joint Logistics Node (JLN)** in **Mumbai**.

- Other operationalised JLN are in **Guwahati** and **Port Blair**.

Key Points

- **Significance of Joint Logistics Nodes:**
 - These JLN will provide **integrated logistics cover to the Armed Forces** for their small arms ammunition, rations, fuel, general stores, civil hired transport, aviation clothing, spares and also engineering support in an effort to synergise their operational efforts.
 - It would **accrue advantages** in terms of **saving of manpower, economical utilisation of resources**, besides **financial savings**.
 - This is the **precursor to the joint logistics command** which is being planned and is **imperative for the optimisation of the combat potential of integrated theatres**.
 - One of the means to achieve jointness is through the **setting up of integrated theatre commands** for the best use of military resources to fight future battles.
- **Integrated Theatre Command:**
 - An integrated theatre command **envisages a unified command of the three Services**, under a single commander, for geographical theatres (areas) that are of strategic and security concern.
 - The commander of such a force **will be able to bear all resources at his disposal** — from the Army, the Indian Air Force, and the Navy — with seamless efficacy.
 - The integrated theatre commander **will not be answerable to individual Services**.
 - Integration and jointness of the three forces **will avoid duplication of resources**. The resources

available under each service will be available to other services too.

- The services will get to know one another better, **strengthening cohesion in the defence establishment**.
- The **Shekatkar committee** has recommended **the creation of 3 integrated theatre commands** — northern for the China border, western for the Pakistan border, and southern for the maritime role.
- **Present Tri-Services Command:**
 - The **Andaman and Nicobar Command (ANC)** is a theatre command, which is headed by the chiefs of the three services in rotation.
 - It was **created in 2001** to safeguard India's strategic interests in Southeast Asia and the Strait of Malacca by increasing rapid deployment of military assets in the islands.
 - The **Strategic Forces Command** was **established in 2006** and is a functional tri-services command. It looks after the delivery and operational control of the country's nuclear assets.

Chief of Defence Staff

- **About:**
 - He is in the **rank of a four-star General** with salary and benefits equivalent to a Service Chief.
 - The **retirement age for the CDS is 65 years**, which is three years more than the retirement age of the three service chiefs.
 - The creation of a CDS was **suggested by the Kargil Review Committee (KRC) in February 2000**.
- **Role of CDS:** Fundamentally, the CDS will perform two roles:
 - **First Role:** The CDS will act as the **principal military adviser to the defence minister** on tri-Services issues.
 - **Second Role:** The CDS will **lead the Department of Military Affairs (DoMA)** dealing with the three services.

Tejas Adds Python-5 Air to Air Missile Capability

Why in News

Recently, India's Indigenous **Light Combat Aircraft**

Note:

Tejas has added capability of firing **Israeli-origin Python-5 air-to-air missile (AAM)** after concluding successful tests.

- The same set of tests were also aimed to validate the enhanced capability of the already integrated Israeli-origin **Derby beyond visual range AAM** on Tejas.
- The tests were conducted by **Defence Research and Development Organisation (DRDO)**.

Key Points

➤ Python-5 Missile:

- It has been **developed by the Israeli defence company Rafael Advanced Defense Systems**. It is the **newest member of the Python family**.
- This **fifth generation air-to-air missile** provides the pilot engaging an enemy aircraft with a revolutionary full sphere launch capability.
- It can be **launched from very short to beyond-visual ranges** with greater kill probability, excellent resistance to countermeasures, irrespective of evasive target manoeuvres or deployment of countermeasures.
- It is a **dual use missile suitable for air-to-air and surface-to-air missions**.
- It is powered by a solid propellant **rocket engine**. The propulsion system provides a **speed of Mach 4** and an operational **range of more than 20 km**.

- It is also equipped with **lock-on-before launch (LOBL)** and **lock-on-after launch (LOAL)** capabilities.

➤ Light Combat Aircraft Tejas:

- **Tejas** is a **single engined, light weight, highly agile, multi-role supersonic fighter**.
- The **indigenously-developed aircraft** has been **manufactured at the Hindustan Aeronautics Limited (HAL)** and **designed by the Aeronautical Development Agency (ADA)** for the Indian Air Force and the Indian Navy.
- It is **designed to carry** a range of air-to-air, air-to-surface, precision-guided, weapons.

Beyond Visual Range AAM

- A beyond-visual-range missile (BVR) is an air-to-air missile (BVRAAM) that is **capable of engaging at ranges of 37 km or beyond**. This range has been achieved using dual pulse rocket motors or booster rocket motors and ramjet sustainer motors.
- In addition to the range capability, the missile is also capable of tracking its target at this range or of acquiring the target in flight.
- Beyond Visual Range Air-to-Air Missile (BVRAAM) technology enables the fighter-pilots to shoot precisely at the enemy targets which are beyond their visual range.
 - **Astra missile** works on BVRAAM.

Note:

Miscellaneous

Highlights

- Dhruv MK III: Advanced Light Helicopter
- Global Youth Mobilization Initiative

Dhruv MK III: Advanced Light Helicopter

Why in News

Recently, Indian Naval Air Squadron (INAS) 323, the first unit of the indigenously built **ALH (Advanced Light Helicopter) Dhruv Mk III** aircraft, was commissioned into the Indian Navy.



Key Points

- **About:**
 - The indigenously designed and developed Advanced Light Helicopter (ALH-DHRUV) is a **twin engine, multi-role, multi-mission new generation helicopter in the 5.5 ton weight class.**
 - It is a multi-role chopper with the **Shakti engine** manufactured by **Hindustan Aeronautics Limited (HAL).**
 - HAL is an Indian state-owned aerospace and defence company, headquartered in Bangalore, India. It is governed under the management of the Ministry of Defence.
 - HAL conceptualised the **Advanced Light Helicopter programme in 1984.** The major variants of Dhruv are classified as Dhruv Mk-I, Mk-II, Mk-III & Mk-IV.

Features:

- The aircraft, a step up from Mk 1, will be able to **mitigate low visibility during search and rescue operations even at night.**
- It has a 0.7 mm gun, which will give a huge capability from a **LIMO (low intensity maritime operations)** standpoint.
- The **automatic flight control system** is hugely superior to the previous one.

Role:

- The Mk III version of the ALH has an all glass cockpit and will be **used for search and rescue, special operations and coastal surveillance.**

Global Youth Mobilization Initiative

Why in News

Recently, an initiative called the '**Global Youth Mobilization**' has been **launched for youths in communities impacted by the Covid-19 pandemic.**

- A **Global Youth Summit (GYS)**, to be held virtually on 23rd-25th April 2021, marks the starting point for young people to get involved in the mobilization.
 - The GYS **aims to offer young people aged 14-30 new insights, skills and contacts, as well as a platform** to engage with their peers, leaders and policy makers.

Key Points

- **About:** It is a **movement of young people** taking action to **improve their lives now and in a post-Covid-19 world.**
- **Aim:** To **address the negative impact of the pandemic** on young people and support them to build back better.

Note:

- **Organisations Involved:** It is supported by the world's six largest youth organisations, **World Health Organization (WHO)**, and **United Nations (UN) Foundation**.
- **Need:** There are an estimated 1.2 billion young people impacted by the Covid-19 pandemic response measures.
 - Disruptions to **education, employment, services and social support** have changed the future of an entire generation.
- **Funding:** With support from the **Covid-19 Solidarity Response Fund**, Global Youth Mobilization will support and scale-up youth-led solutions and youth engagement programs across the world.
 - The Covid-19 Solidarity Response Fund was established by the WHO with the help of the UN Foundation and the Swiss Philanthropy Foundation.



Note:

Key Points

Details

[illegible]

Summary

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a thin black border around its edges.

Summary