News Analysis (24 Aug, 2021)

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4-Tier Structure for Urban Cooperative Banks

Why in News

Recently, a **Reserve Bank of India** (RBI)-appointed committee has suggested a **four-tier structure for the Urban Cooperative Banks (UCBs).**

- In June 2020, the Central government approved an Ordinance to bring all **urban and multi-state co-operative banks under the direct supervision of the RBI.**
- In January 2020, the RBI **revised the Supervisory Action Framework (SAF) for UCBs.**

Key Points

- **Categorisation of UCBs:**
    - Based on the cooperativeness' of the banks, availability of capital and other factors, UCBs may be **categorised into four tiers for regulatory purposes:**
        - **Tier 1** with all unit UCBs and salary earner's UCBs (irrespective of deposit size) and all other UCBs having **deposits up to Rs 100 crore.**
        - **Tier 2** with UCBs of **deposits between Rs 100 crore and Rs 1,000 crore.**
        - **Tier 3** with UCBs of **deposits between Rs 1,000 crore and Rs 10,000 crore.**
        - **Tier 4** with UCBs of **deposits more than Rs 10,000 crore.**
    - The minimum **Capital to Risk-Weighted Assets Ratio (CRAR)** for them could vary from 9% to 15% and for Tier-4 UCBs the **Basel III** prescribed norms.
- **Umbrella Organisation:**
    - The committee has proposed **setting up an Umbrella Organisation (UO) to oversee co-operative banks** and suggested that they should be allowed to open more branches if they meet all regulatory requirements.
    - The **UO should be financially strong** and be well governed by a professional board and senior management, both of which are fit and proper.
- **Reconstruction:**
    - Under the Banking Regulation (BR) Act, 1949 the **RBI can prepare a scheme of compulsory amalgamation or reconstruction of UCBs,** like banking companies.

- **Supervisory Action Framework:**
    - SAF **should follow a twin-indicator approach –** it should consider only asset quality and capital measured through Net **Non-Performing Assets** and CRAR – instead of triple indicators at present.
        - The **objective of the SAF should be to find a time-bound remedy to the financial stress of a bank.**
    - **If a UCB remains under more stringent stages of SAF** for a prolonged period, it may have an **adverse effect on its operations** and may further erode its financial position.
- **Need of Reform:**
    - **Restrictive Policies:**
        - Owing to **lack of the desired level of regulatory comfort** on account of the structural issues including 'capital' and the gaps in the statutory framework, the **regulatory policies for co-operative banks have been restrictive** with regard to their business operations, which, to some extent, has been one of the reasons affecting their growth.
            - With the enactment of the **Banking Regulation (Amendment) Act, 2020**, the statutory gaps have been addressed to a very large extent.
    - **Financial Inclusion:**
        - Given the importance of the sector in **furthering financial inclusion and considering the large number of its customer base,** it is **imperative that the strategies adopted for the regulation of the sector are comprehensively reviewed** so as to enhance its resilience and provide an enabling environment for its sustainable and stable growth in the medium term.

Co-operative Banks

- **About:**
    - **Co-operative Banks**, which are **distinct from commercial banks,** were born out of the concept of co-operative credit societies where members from a community group together to **extend loans to each other, at favourable terms.**
    - Co-operative Banks **are broadly classified into Urban and Rural co-operative banks** based on their region of operation.
    - They are **registered under the Co-operative Societies Act** of the State concerned or under the **Multi-State Co-operative Societies Act, 2002.**
    - The Co-operative banks are governed by the
        - Banking Regulations Act, 1949.
        - Banking Laws (Co-operative Societies) Act, 1955.

- **Features of Co-operative Banks:**
  - **Customer Owned Entities:** Co-operative bank members are both customer and owner of the bank.
  - **Democratic Member Control:** These banks are owned and controlled by the members, who democratically elect a board of directors. Members usually have equal voting rights, according to the cooperative principle of "one person, one vote".
  - **Profit Allocation:** A significant part of the yearly profit, benefits or surplus is usually allocated to constitute reserves and a part of this profit can also be distributed to the co-operative members, with legal and statutory limitations.
  - **Financial Inclusion:** They have played a significant role in the financial inclusion of unbanked rural masses. They provide cheap credit to masses in rural areas.

Basel III Norms

- **About:**
  - Basel III is an **internationally agreed set of measures** developed by the **Basel Committee on Bank Supervision** in response to the financial crisis of 2007-09. The measures aim **to strengthen the regulation, supervision and risk management of banks.**
  - BCBS members are committed to implementing and applying standards in their jurisdictions within the time frame established by the Committee.
- **Three Pillars:** Basel 3 measures are based on three pillars:
  - **Pillar 1:** Improve the banking sector's ability to absorb ups and downs arising from financial and economic instability
  - **Pillar 2:** Improve risk management ability and governance of banking sector
  - **Pillar 3:** Strengthen banks' transparency and disclosures

Source: IE

Adoption (First Amendment) Regulations, 2021

Why in News

According to a **new clause in the adoption regulations, Indian diplomatic missions abroad will now be in charge of safeguarding adopted children whose parents move overseas** with the child **within two years of adoption.**

> So far, **Indian missions have had a role in inter-country adoption** of Indian children limited to kids adopted by **Non Resident Indians (NRIs)**, **Overseas Citizens of India or foreign parents.**

Key Points

- **Adoption (First Amendment) Regulations, 2021:**
  - **It amends the Adoption Regulations, 2017.**
  - The amendment has been notified in accordance with the relevant sections of the **Juvenile Justice (Care and Protection of Children) Act, 2015 (2 of 2016) and it amends Adoption Regulations, 2017.**
    - Recently passed **Juvenile Justice (Care and Protection of Children) Amendment Act, 2021**, seeks to **strengthen and streamline the provisions for protection and adoption of children.**
    - It provides that **instead of the court, the District Magistrate (including Additional District Magistrate) will issue such adoption orders.**
  - It has been made by the **Central Adoption Resource Authority** and has been notified by the **Woman and Child Development Ministry.**
      CARA is a statutory body of the Ministry of Women & Child Development. It functions as the nodal body for adoption of Indian children and is **mandated to monitor and regulate in-country and inter-country adoptions.**
- **Need:**
    Some cases came to the attention of the authorities recently when Indian children were adopted by parents in India and who ended up moving abroad later, hence going out of the purview of Indian authorities and also not falling under purview of Indian Missions abroad.
      Such childrens are vulnerable as they can be **neglected, exploited, maltreated or abuse of these children can happen.**
- **Current Responsibility of Indian Missions:**
  - The **Indian diplomatic missions** presently send **progress reports of an adopted child on quarterly basis in the first year and on six-monthly basis in the second year,** from the date of arrival of the child in the receiving country.
  - The **Missions are also expected to contact the central authority or other authorities** in the receiving countries to ensure safeguards of children of Indian origin adopted by Non-Resident Indian or Overseas Citizens of India or foreign parents.
  - In case of **disruption of adoption,** the **foreign missions shall send a report in this regard at the earliest,** and render necessary help and facilitate the repatriation of the child in case required.

- **Persons Eligible to Adopt Child under Adoption Regulations, 2017:**
  - The **Prospective Adoptive Parents (PAP)** "should be physically, mentally and emotionally stable, financially capable and shall not have any life-threatening medical condition."
  - A **person can adopt irrespective of their marital status** and whether or not he or she has a biological son or daughter.
  - A **single female can adopt a child of any gender but a single male shall not be eligible to adopt a girl child.** In the case of a married couple, both spouses should give their consent for adoption.
  - "No child shall be given in adoption to a couple unless they have **at least two years of stable marital relationship,".**
  - **Couples with three or more children** shall **not be considered for adoption** "except in case of special need children", "hard to place children" and in case of "relative adoption and adoption by step-parent".

Source: IE

World Sanskrit Day

Why in News

World Sanskrit Day (Viswa Samskrita Dinam) was celebrated on **22nd August 2021.**

- In India, Sanskrit is a **Classical** and an **Eighth Schedule** language.
- In 2020, the **Uttarakhand Government** decided to develop **'Sanskrit Grams'** across the state to teach use of Sanskrit regularly.

Key Points

- **About:**
  - It is **an annual event aimed to promote revival and maintenance of Sanskrit Language.**
  - It is **celebrated on Poornima day (Full Moon) of the Shraavana month** in the Hindu calendar.
  - The day essentially speaks of the **importance of learning and knowing it, despite it being not as widely spoken as in ancient times.**
  - The Day was **celebrated for the first time in the year 1969 after the Union ministry of education issued notifications** to state and central governments.
  - The **Sanskrit organisation Samskrita Bharati (NGO)** is involved in promoting the day.

- **Some Important Facts about Sanskrit Language:**
  - It is considered to be **one of the oldest languages in the world.** It is **an old Indo-Aryan language** in which the most ancient documents, **Vedas, are composed in what is called Vedic Sanskrit.**
  - Sanskrit used to be **a pan-Indian language in the Vedic period** and most languages in the country have branched out of Sanskrit.
    - It lost, somehow, to modern derivations and regional dialects.
  - Classical Sanskrit, a language close to late Vedic as then used in the northwest of the subcontinent, was elegantly **described in one of the finest grammars ever produced, the Aṣṭādhyāyī** ("Eight Chapters") **composed by Pāṇini** (c. 6th–5th century BCE).
  - Sanskrit has been written **both in Devanāgarī script and in various regional scripts,** such as **Śāradā from the north (Kashmir), Bāṅglā (Bengali)** in the east, **Gujarātī** in the west, and various **southern scripts, including the Grantha alphabet,** which was especially devised for Sanskrit texts.
  - It is considered **a scientific language and is believed to be the most computer-friendly language.**
    - In 1786, English Philologist William Jones suggested in his book **'The Sanscrit Language'** that Greek and Latin were related to Sanskrit.
  - The language, however, is **not entirely dead. A village in the Shimoga district of Karnataka, called Mattur,** is believed to have preserved the language.
  - The **only Sanskrit newspaper in the world is called 'Sudharma'.** The newspaper has been published since 1970 from Mysore in Karnataka and is also available online.
  - Some of the eminent **Sanskrit authors are Panini, Patanjali, Adi Shankaracharya, Ved Vyas, Kalidas etc.**
- **Important Authors and Works in Sanskrit:**
  - **Bhāsa** (for example, his Svapnavāsvavadatta - Vāsavadatta in a Dream), who is assigned widely varying dates but definitely worked prior to Kālidāsa, who mentions him.
  - **Kālidāsa,** dated anywhere from the 1st century BCE to the 4th century CE, whose works include **Śakuntalā, Vikramorvaśīya, Kumārasambhava and Raghuvaṃśa.**
  - **Śūdraka and his Mṛcchakatika** ("Little Clay Cart"), possibly dating to the 3rd century CE.
  - **Ashvaghosha's Buddhacarita** is one of the finest examples of Buddhist literature.
  - **Bhāravi and his Kirātārjunīya** ("Arjuna and the Kirāta"), from approximately the 7th century.
  - **Māgha,** whose **Śiśupālavadha** ("The Slaying of Śiśupāla") dates to the late 7th century.
  - The two epics **Rāmāyaṇa** ("Life of Rāma") and **Mahābhārata** ("Great Tale of the Bhāratas") were also composed in Sanskrit, and the former is esteemed as the first poetic work (ādikāvya) of India.

- **Promotion of Sanskrit by the Central Government:**
    - The **New Education Policy (NEP)** laid an ambitious path for "mainstreaming" the language. Sanskrit is to be offered in schools, including as one of the language options in the three-language formula, as well as in higher education.
        - NEP also stated that Sanskrit universities will be turned into multi-disciplinary institutions of higher learning.
    - The government has established the **Rashtriya Sanskrit Sansthan in Delhi as a nodal authority to promote Sanskrit.**
    - Providing **financial assistance** to Adarsh Sanskrit Mahavidyalaya/Shodha Sansthans.
    - Award of **merit scholarships** to students of Sanskrit Pathshala to College level.
    - **Financial assistance to NGOs/Higher Educational Institutions of Sanskrit** for various Research Projects/Programmes.
    - Retired eminent Sanskrit scholars are engaged under the **Shastra Chudamani scheme** for teaching.
    - Sanskrit is also **taught through Non-formal Sanskrit Education (NFSE)** programme, by setting up Non-Formal Sanskrit learning centres, in reputed institutions like Indian Institutes Technology, Ayurveda institutions, Modern Colleges and Universities.
    - **Presidential awards** for Sanskrit Language are awarded annually to 16 senior scholars and to 5 young scholars.
    - Financial Assistance for **Publication, Reprint of rare Sanskrit books.**
    - **Ashtaadashi** containing eighteen Projects for sustaining the growth of Sanskrit has been implemented.
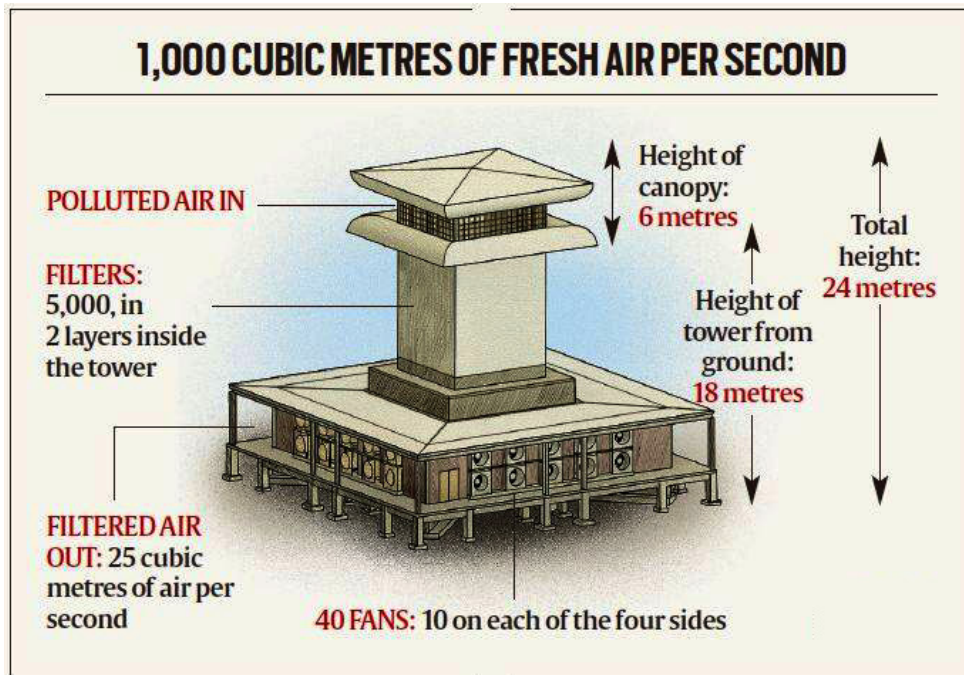
Source: PIB

Delhi's New Smog Tower

Why in News

Recently, the Chief Minister of Delhi inaugurated the **country's first 'smog tower' in Connaught Place.**

> It was inaugurated months before the **pollution level spikes in the national capital due to burning of crop waste (stubble burning) by farmers.**

1,000 CUBIC METRES OF FRESH AIR PER SECOND

POLLUTED AIR IN

FILTERS: 5,000, in 2 layers inside the tower

FILTERED AIR OUT: 25 cubic metres of air per second

Height of canopy: 6 metres

Height of tower from ground: 18 metres

Total height: 24 metres

40 FANS: 10 on each of the four sides

Key Points

- **Background:**
  - In 2019, the **Supreme Court** directed the **Central Pollution Control Board (CPCB)** and the Delhi government to come up with a plan to install smog towers to combat air pollution.
  - **IIT-Bombay then submitted a proposal** for the towers to the CPCB.
  - In January 2020, the **Supreme Court directed that two towers** should be installed by April as a **pilot project.**
  - The **smog tower at Connaught Place (CP) is the first of these towers.** The second tower, being constructed at Anand Vihar in east Delhi with CPCB as the nodal agency, is nearing completion.
- **About:**
  - Smog towers are structures **designed to work as large-scale air purifiers.**
  - They are usually fitted with **multiple layers of air filters,** which clean the air of pollutants as it passes through them.
  - **China** has the **world's largest smog tower.**
- **Working of the Tower:**
  It uses a **'downdraft air cleaning system' where** polluted air is sucked in at a height of 24 m, and filtered air is released at the bottom of the tower, at a height of about 10 m from the ground.
    - It is **different from the system used in China,** where a 60-metre smog tower uses an **'updraft' system — air is sucked in from near the ground,** and is **propelled upwards by heating and convection.** Filtered air is released at the top of the tower.

- **Developed by:**
    - **Tata Projects Limited (TPL)** built it with technical support from **IIT-Bombay and IIT-Delhi,** which will analyse its data.
    - **National Biofuel Coordination Committee (NBCC) India Ltd** is the project management consultant.
    - **Delhi Pollution Control Committee** was in charge of the Project.
- **Need:**
    - According to a report by CPCB, an increase of **258% to 335%** has been observed in the **concentration of PM10 in Delhi** since 2009.
    - But the **most prominent pollutant in Delhi and neighbouring areas** is **PM2.5**
        PM2.5 refers to **fine particles which penetrate deep into the body and fuel inflammation in the lungs and respiratory tract,** leading to risks of cardiovascular and respiratory problems, including a weak immune system.
    - **Delhi was the most polluted capital city** in the world in 2020 for the third consecutive year, according to a report by a **Swiss group (released in March 2021)** that ranked cities based on their air quality **measured in terms of the levels of ultrafine particulate matter (PM 2.5).**
- **Challenges:**
    - It may **provide immediate relief from air pollution in a small area** but they are a **costly quick-fix measure with no scientific evidence** to back their efficacy in the long term.
    - The tower **could have an impact on the air quality up to 1 km from the tower.** However, the **actual impact will be assessed by IIT-Bombay and IIT-Delhi** in a **two-year pilot study** that will also determine how the tower functions under different weather conditions, and how levels of PM2.5 vary with the flow of air.
- **Other Steps Taken to Tackle the Problem of Pollution in Delhi:**
    - **Subsidy to farmers** for buying **Turbo Happy Seeder (THS)** which is a machine mounted on a tractor that cuts and uproots the stubble, in order to reduce stubble burning.
    - The introduction of **BS-VI vehicles**, push for **electric vehicles (EVs)**, **Odd-Even** as an emergency measure and construction of the Eastern and Western Peripheral Expressways to reduce vehicular pollution.
    - Implementation of the **Graded Response Action Plan (GRAP).** It is a set of curbs triggered in phases as the air quality deteriorates, which is typical of the October-November period.
    - Use of **Green Crackers.**
    - Development of the **National Air Quality Index (AQI)** for public information under the aegis of the CPCB.

Way Forward

- Since there is **no scientific evidence that proves its efficiency,** governments should instead **address root causes and promote <u>renewable energy</u>** to tackle air pollution and **reduce emissions.**
- It will be **really unfortunate if other cities decide to follow suit and set up these expensive, ineffective towers.**

<u>Source: IE</u>

Earthquake Observatories

Why in News

Recently, the government has announced that **India is going to have 35 more earthquake observatories by the end of the 2021** and aims to add **100 more <u>earthquake</u> observatories by 2026.**

> The announcement came at the inaugural function of the Joint Scientific Assembly of the **International Association of Geomagnetism and Aeronomy (IAGA) – International Association of Seismology and Physics of the Earth Interior (IASPEI).**

Key Points

- **About Earthquake Observatories:**
  - **National Center for Seismology** (under the **Ministry of Earth Sciences**) is the **nodal agency** of the Government of India for monitoring of earthquake activity in the country.
  - Currently, India has **only 115 earthquake observatories.**
    > The most important aspect of the Earthquake Observatory is to be able to accurately predict the time of the earthquake.
- **Need for Earthquake Observatories:**
  - The occurrence of an earthquake is a natural process, beyond human power. Hence, **prevention** is the only way.
  - Further, the Indian subcontinent is considered as one of the **world's most disaster-prone areas** in terms of **earthquakes**, **<u>landslides</u>, <u>floods</u>, <u>cyclones</u>, and <u>tsunamis</u>.**

- **About IAGA and IASPEI:**
  - **International Association of Geomagnetism and Aeronomy (IAGA)** welcomes scientists to join in research of **magnetism and aeronomy of the Earth**, of other bodies of the solar system, and of the interplanetary medium and its interaction with these bodies.
  - **International Association of Seismology and Physics of the Earth Interior (IASPEI)** promotes the **study of earthquakes and other seismic sources**, the propagation of seismic waves, and the Earth's internal structure, properties, and processes.
  - These are **semi-autonomous associations under the International Union of Geodesy and Geophysics (IUGG).**
    - IUGG is a non-governmental, scientific organization, **established in 1919.**
    - It's Secretariat is in **Potsdam, Germany.**
    - IUGG is dedicated to the international promotion and coordination of scientific studies of **Earth (physical, chemical, and mathematical) and its environment in space.** These studies include:
      - The shape of the Earth,
      - Gravitational and magnetic fields,
      - Earth's internal structure, composition and tectonics,
      - Earthquakes and elastic wave propagation,
      - Generation of magmas, volcanism and rock formation,
      - Hydrological cycle including snow and ice,
      - All aspects of the oceans, the atmosphere, ionosphere, magnetosphere and solar-terrestrial relations,
      - Analogous problems associated with the Moon and other planets.
  - The **Joint Scientific Assembly of IAGA and IASPEI** will act as a catalyst in bringing on board a greater number of researchers and practitioners from the global community to work on issues related to rendering science to society.

- **Earthquakes in India:**
  - The earthquake is characterized by **severe shaking of the ground** and severe shaking of structures above the ground.
  - According to the **National Disaster Management Authority**, this happens due to the release of the transmitted pressure of moving lithospheric or crustal plates.
  - The Earth's crust is divided into **7 large plates, which are 50 miles thick.**
  - They move slowly and steadily over the **Earth's interior and many smaller plates.** Earthquakes are basically tectonic, that is, moving plates are mainly responsible for the shaking in the ground.
  - Major earthquakes occur around the Himalayas.
    - However, urbanization, widespread unscientific construction, and exploitation of natural resources have led to an increase in the number of earthquakes in the Indian subcontinent.
  - According to seismic zoning mapping, earthquake zones are divided on the basis of the **estimation of the intensity of the earthquake.**
    - India is divided into **4 zones: Zone 2, Zone 3, Zone 4, and Zone 5.**
    - While Zone 2 is the least dangerous, Zone 5 is the most dangerous.
    - Nearly, **59% of India's land area is under a moderate to severe seismic hazard warning**, which means that India is prone to earthquakes of magnitude 7 and above.
  - Some of the major earthquakes that occurred in the Indian Subcontinent are: Shillong (1897), Bihar-Nepal (1934), Assam (1950), Bhuj (2001), Kashmir (2005), Sikkim (2011) and Manipur (2016).

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)

Zone II — 40.93
Zone III — 30.79
Zone IV — 17.49
Zone V — 10.79

LEGEND
ZONE II
ZONE III
ZONE IV
ZONE V
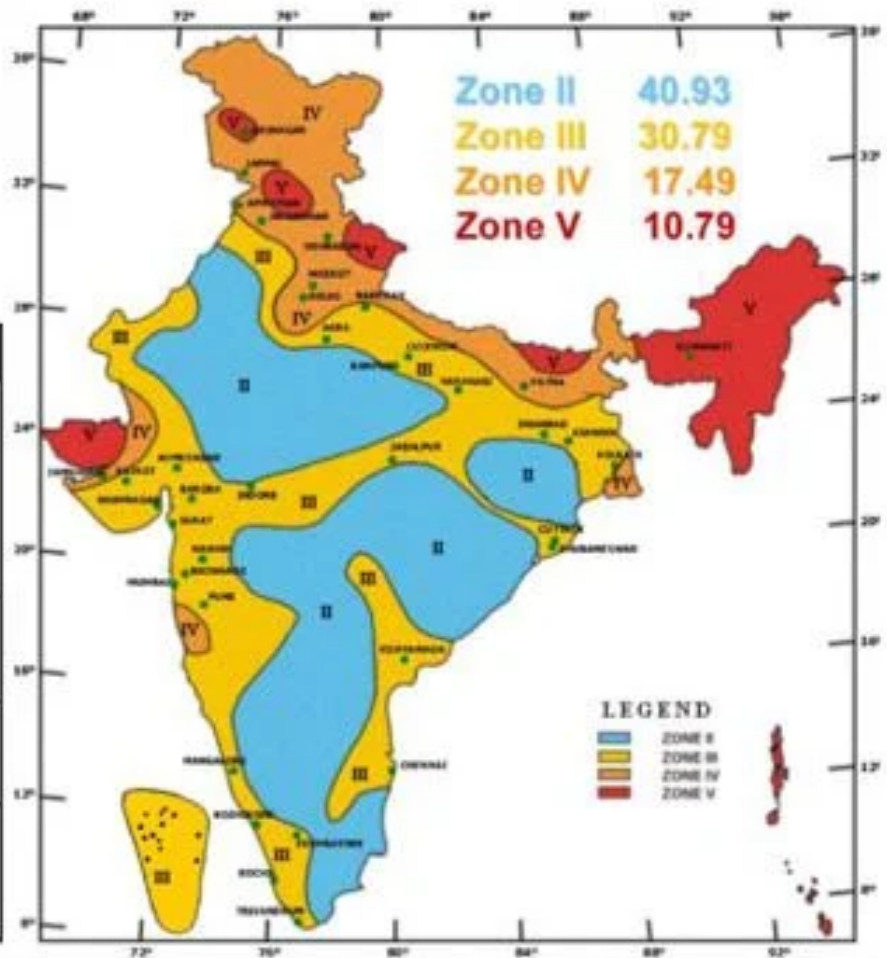
Source: PIB

Human Trials for New HIV Vaccine

Why in News

Moderna, the Massachusetts-based American biotechnology company, will begin **human trials for its novel mRNA vaccine (mRNA-1644) for HIV (Human Immunodeficiency Virus).**

- This is the **first trial for an mRNA vaccine for HIV** after the success of **mRNA vaccines with Covid-19.**
- According to the **World Health Organization**, there were around **37.7 million living with HIV as of 2020.**

Key Points

- **mRNA Vaccine vs Traditional Vaccines:**
  - Vaccines work by training the body to recognise and respond to the proteins produced by disease-causing organisms, such as a virus or bacteria.
  - **Traditional vaccines are made up of small or inactivated doses of the whole disease-causing organism, or the proteins that it produces,** which are introduced into the body to provoke the immune system into mounting a response.
  - **mRNA vaccines tricks the body into producing some of the viral proteins itself.**
    - They **work by using mRNA, or messenger RNA,** which is the molecule that essentially puts DNA instructions into action. Inside a cell, mRNA is used as a template to build a protein.
- **mRNA vaccine for HIV:**
  - The vaccine is expected to work similar to the **Covid-19 vaccine** — by getting the **body's cells to produce the HIV virus' spike protein** triggering an immune response.
  - The **larger purpose of stimulating the B cells** is to generate what are called **broadly neutralising antibodies (bnAbs),** which are specialised blood proteins that attach to the surface proteins of HIV and disable them by accessing key but hard-to-reach regions on the virus.
    - **B-cells** fight bacteria and viruses by making Y-shaped proteins called antibodies, which are specific to each pathogen and are able to lock onto the surface of an invading cell and mark it for destruction by other immune cells.
  - Over the last decade, there have been **advances in identifying new bnAbs from HIV-infected individuals** that were seen to target very specific sites in the outer envelope of the HIV.
  - **Lab-based analysis and tests on animals** have improved the understanding of how the knowledge of these sites can be used to make immunogens.
    - An **immunogen** refers to a molecule that is capable of eliciting an immune response by an organism's immune system, whereas an antigen refers to a molecule that is capable of binding to the product of that immune response.
    - So, **an immunogen is necessarily an antigen, but an antigen may not necessarily be an immunogen.**
- **Expected Benefits:**
  RNA-based immunogens are believed to be a promising alternative because they **do not involve the use of a live virus, can be made relatively easily, can be quickly deployed and safely administered.**

- **Challenges:**
    - **Issue of Reach:**
        - The experience with the **Moderna and Pfizer vaccines shows,** getting **essential jabs to the regions** where they are most needed is the biggest stumbling block.
            - Of the people living with HIV, **over two-thirds are in Africa.** Any success in containing the HIV pandemic would mean drastically cutting the rates of transmission there.
    - **Sensitive to Temperature:**
        - **m-RNA vaccines are sensitive to temperature in storage,** and is a challenge for developing countries.
    - **Mutation of HIV:**
        - **HIV has mutated into several variants** and is an insidious virus, and it will be many years before definitive proof of the success of the m-RNA approach can be established.

HIV (Human Immunodeficiency Virus)

- HIV **attacks CD4, a type of White Blood Cell (T cells)** in the body's immune system.
    - T cells are those cells that move around the body detecting anomalies and infections in cells.
- After entering the body, **HIV multiplies itself and destroys CD4 cells,** thus severely **damaging the human immune system.** Once this virus enters the body, it can never be removed.
- The CD4 count of a person infected with HIV reduces significantly. In a healthy body, CD4 count is between 500- 1600, but in an infected body, it can go as low as 200.
- Weak immune system makes a person prone to opportunistic infections and cancer. It becomes difficult for a person infected with this virus to recover from even a minor injury or sickness.
- By receiving treatment, severe forms of HIV can be prevented.
- **Related Initiatives: The HIV & AIDS Prevention and Control Act, 2017, Project Sunrise, 90-90-90, The Red Ribbon, Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM).**

Source: TH

Immune Cells in Sea Corals

Why in News

A new study has identified for the **first time that specialised immune cells (phagocytic cells) exist in certain varieties of sea corals and anemones.**

It will help in **better understanding how reef-building corals** and **other reef animals protect themselves from foreign invaders** like bacteria and viruses found in and around **coral reefs**.

Phagocytosis

- It is the process by which **certain living cells called phagocytes ingest or engulf other cells or particles.**
- The phagocyte may be a **free-living one-celled organism, such as an amoeba**, or one of the **body cells**, such as a **white blood cell.**
- In some forms of animal life, such as **amoebas and sponges, phagocytosis is a means of feeding.**
- In higher animals phagocytosis is chiefly a **defensive reaction against infection and invasion of the body by foreign substances (antigens).**
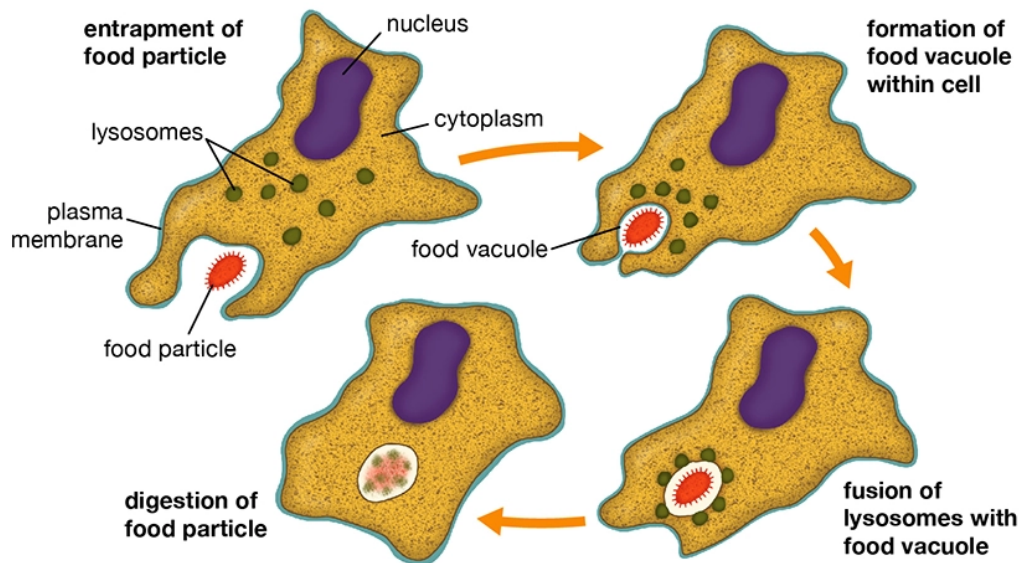
Sea anemones

- They are sometimes called the **'flowers of the sea'**, sea anemones are actually **beautiful animals,** they are a close **relative of coral and jellyfish**, and are the marine, predatory animals of the order Actiniaria.
- They are **found from the tidal zone of all oceans to depths of more than 10,000 metres.**

Key Points

- **Coral:**
  - Corals are made up of **genetically identical organisms called polyps.** These polyps have **microscopic algae called zooxanthellae** living within their tissues.
    - The corals and algae have a **mutualistic relationship.**
    - The coral **provides the zooxanthellae with the compounds** necessary for **photosynthesis**. In return, the **zooxanthellae supply the coral with organic products of photosynthesis**, like carbohydrates, which are utilized by the coral polyps for the synthesis of their calcium carbonate skeletons.
    - In addition to providing corals with essential nutrients, **zooxanthellae are responsible for the unique and beautiful colors of corals.**
  - They are also called the **"rainforests of the seas".**
  - There are two **types of corals:**
    - **Hard, shallow-water corals**—the kind that builds reefs.
    - **Soft corals and deepwater corals** that live in dark cold waters.
- **Benefits of Coral:**
  - **Habitat:**
    Corals are home to over **1 million diverse aquatic species**, including thousands of fish species.
  - **Income:**
    Coral reefs and related ecosystems have a **global estimated value of USD 2.7 trillion per year**, or 2.2% of all global **ecosystem service** values', this includes tourism and food.
  - **Coastal Protection:**
    Coral reefs r**educe shoreline erosion** by absorbing energy from the waves. They can protect **coastal housing, agricultural land, and beaches.**
  - **Medicine:**
    Reefs are **home to species** that have the **potential for treatments** for some of the **world's most prevalent and dangerous illnesses and diseases.**

- **Threats:**
  - **Overfishing & Destructive Fishing:**
    - Overfishing can affect the **reef's ecological balance and biodiversity.**
    - Fishing with **dynamite, cyanide, bottom trawling and Muro Ami** (banging on the reef with sticks) can **damage entire reefs** and is unsustainable.
 - **Recreational Activities:**
    Unregulated recreational activities and tourism cause damage to the very environment upon which the industries depend.
  - **Coastal Development:**
    Coastal areas have some of the fastest rates of growth in tropical countries. **Sensitive habitats are destroyed** or disturbed by the dredging of deep-water channels or marinas, and through the dumping of waste materials.
  - **Pollution:**
    Urban and industrial waste, sewage, agrochemicals, and oil pollution are poisoning reefs.
  - **Climate Change:**
    - **Coral Bleaching**: When water is too warm, corals will expel the algae (zooxanthellae) living in their tissues causing the coral to turn completely white. This is called coral bleaching.
    - **Ocean Acidification**: The rising acidity of the oceans threatens coral reefs by making it harder for corals to build their skeletons.
- **Initiatives to Protect Corals:**
  Indian:
    - India has included the studies on coral reefs under the **Coastal Zone Studies (CZS).**
    - In India, the **Zoological Survey of India (ZSI)**, with help from Gujarat's forest department, is attempting a process to restore coral reefs using **"biorock" or mineral accretion technology**.
    - **National Coastal Mission Programme**, to protect and sustain coral reefs in the country.

Major locations of corals in India

Coral reefs are present in the areas of **Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan.**
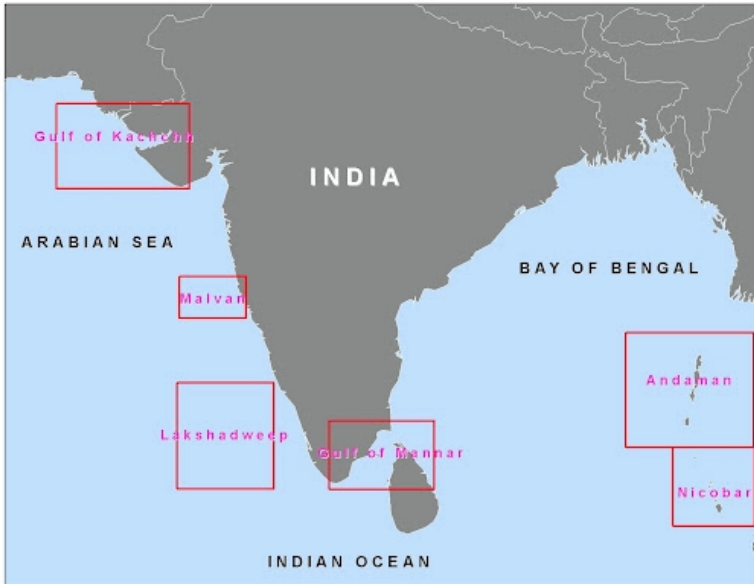
New Geospatial Planning Portal: Yuktdhara

Why in News

Recently, the **Ministry of Rural development** has launched **a new geospatial planning portal, 'Yuktdhara' to help in facilitating the new [MGNREGA](#)** (Mahatma Gandhi National Rural Employment Guarantee Act) **assets** with the use of remote sensing and **GIS (Geographic Information System)** based information.

It is a new portal **under 'Bhuvan'.**

Key Points

- **About:**
  - It is a culmination of joint efforts of the **Indian Space Research Organisation** (ISRO) and the **Ministry of Rural development** made towards realising a G2G (Government-to-Government) service for rural planning in support of decentralised decision making.
    - Previously launched, **ISRO's Geoportal Bhuvan** is presently **a de-facto geospatial platform** for several developmental planning activities across India.
  - It will **serve as a repository of assets (geotags) created under the various National Rural Development Programmes**, such as MGNREGA, , and **Rashtriya Krishi Vikas Yojana**, along with the field photographs.
  - It will integrate a wide variety of thematic layers, **multi-temporal high-resolution earth observation data with the analysis tool.**
  - Planners will be able to analyse previous assets under various schemes and facilitate the identification of new works using online tools. Prepared plans will be then evaluated by appropriate authorities under State Departments.
- **Bhuvan Portal:**
  - It is a type of web portal used to find and access geographic information (geospatial information) and associated geographic services (display, editing, analysis, etc.) via the Internet.
  - It shows the true borders of the country as per the information available from the Government of India.
  - By using **MapmyIndia** maps and applications instead of the foreign map apps, users can better protect their privacy.
  - It is well aligned with the government's Mission of **Atmanirbhar Bharat.**

Source: PIB

Corbett Tiger Reserve: Uttarakhand

Why in News

Recently, the Delhi High Court has asked the **National Tiger Conservation Authority (NTCA)** to consider as representation a petition to **stop the alleged illegal construction** of bridges and walls within tiger breeding habitat of the **Corbett Tiger Reserve**.

National Tiger Conservation Authority

- It is a **statutory body** under the Ministry of Environment, Forests and Climate Change.
- It was **established in 2005** following the **recommendations of the Tiger Task Force.**
- It was **constituted under enabling provisions of the Wildlife (Protection) Act, 1972**, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it.

Key Points

- **About:**
  - It is located in Nainital district of Uttarakhand. The **Project Tiger** was launched in 1973 in **Corbett National Park** (first National Park of India), which is **part of Corbett Tiger Reserve.**
    - The national park was **established in 1936 as Hailey National Park** to protect the endangered Bengal tiger.
    - It is **named after Jim Corbett** who played a key role in its establishment.
  - The **core area forms the Corbett National Park** while the buffer contains reserve forests as well as the **Sonanadi Wildlife Sanctuary.**
  - The entire area of the reserve is mountainous and **falls in the Shivalik and Outer Himalaya geological provinces.**
  - **Ramganga, Sonanadi, Mandal, Palain and Kosi** are the major rivers flowing through the Reserve.
- **Flora:**
  According to the **botanical survey of India**, Corbett has **600 species of plants - trees, shrubs, ferns, grass, climbers, herbs and bamboos**. Sal, Khair and Sissoo are the most visible trees found in Corbett.
- **Fauna:**
  Apart from tigers, Corbett also has leopards. Other mammals such as **jungle cats, barking deer, spotted deer, sambar deer, sloth** etc. are also found there.
- **Other Major Protected Areas of Uttarakhand:**
  - **Nanda Devi National Park.**
  - Valley of Flowers National Park.
    - Valley of Flowers National Park and Nanda Devi National Park together are a **UNESCO World Heritage Site**.
  - **Rajaji National Park.**
  - **Gangotri National Park.**
  - Govind National Park.

National Parks & Sanctuaries of Uttarakhand

India-Philippine Maritime Exercise

Why in News

Recently, the **Indian Navy carried out a Maritime Partnership Exercise with the Philippine Navy** in the West Philippine Sea.

Earlier **Indo-UK Naval Exercise, 'Konkan 2021'** was held **in the English Channel.**

Key Points

- It will **strengthen bilateral collaboration in the maritime domain** towards a collective aim of **ensuring a stable, peaceful and prosperous Indo-Pacific.**
- This is **in a series of exercises that India is conducting with littoral nations that share their maritime boundaries with China** as part of its deployment.
- **Indian naval ships INS Ranvijay and INS Kora are currently deployed to the Western Pacific** with an aim to strengthen maritime security collaboration with partner nations.
  - The **Quad countries - India, the US, Australia and Japan -** will conduct the **next edition of the Malabar naval exercise off the coast of Guam** in the face of China's growing military muscle-flexing in the Indo-Pacific.
  - China claims sovereignty over all of the **South China Sea** (arm of the Western Pacific Ocean) a huge source of hydrocarbons. However, several **ASEAN Association of Southeast Asian Nations)** member countries, including Vietnam, the Philippines and Brunei, have counterclaims.

Source: IE