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India-Mexico

Why in News

Recently, the 5th meeting of the **India-Mexico Bilateral High-Level Group (BHLG) on Trade, Investment and Cooperation** has been held through video conference.

- The 4th meeting of BHLG on Trade, Investment and Cooperation at the level of Commerce Secretary was held **in Mexico City in July 2016**.
- On **1st August 2020**, India and Mexico celebrated the **70th anniversary of the establishment of diplomatic relations** between them.

Key Points

- Both sides discussed a number of bilateral ongoing and outstanding issues, ranging from **Audio-visual Co-production, Bilateral Investment Treaty, market access for agricultural products, a cooperation framework on Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) measures, cooperation in the Intellectual Property Rights (IPR)**, and exploring ways to **promote tourism and people-to-people contact**.
- They also **agreed to expand and diversify** the bilateral trade relationship through enhanced cooperation in pharmaceuticals, medical equipment, healthcare, agro-products, fisheries, food processing and aerospace industry, etc.
- **Two Memorandum of Understandings (MoUs)** have been signed, to foster the cooperation in the domains of:
 - Electronics, Computer Software and Telecommunications and Information Technologies.
 - Foreign Trade, Investment and Technology.

India-Mexico Relations



- **Historical Ties:**

- Being **colonies in the past**, India and Mexico have **European connections of the colonial era**.
- **Mexico** was the **first Latin American country to recognise India** after Independence and establish diplomatic relations with India in 1950.
- **Mexican wheat varieties** used in Indo-Mexican hybrids were the **backbone of India's Green Revolution** in the 1960s.
- In the **Cold War** years, Mexico and India had worked together closely as members of the **United Nations (UN)**, both actively championing the interests of developing countries such as in the **Uruguay Round of Trade Negotiations** (under the **World Trade Organisation**).

Both countries are the **members of G-20**.

- **Political and Bilateral Cooperation:**

- Both countries **established a 'Privileged Partnership' in 2007**.
- In 2015, both countries **agreed to work for achieving a 'Strategic Partnership'**.
- The two countries have **several bilateral agreements and MoUs**, including for Investment Promotion and Protection, **Extradition**, Administrative Assistance in Customs Matters, Space Cooperation, etc.
- India gives **20 scholarships** to Mexico under the **Indian Technical and Economic Cooperation (ITEC) programme** and Mexican diplomats are also given training at **Forest Survey of India (FSI)**.

- **Economic and Commercial Relations:**

- Mexico is **currently India's largest trading partner in Latin America.**

In 2018-19, it accounted for almost a quarter of India's trade with the region. **India is currently Mexico's ninth-most important** global trading partner.

- The **last decade has seen a spurt in trade** between the two countries, which has grown from around USD 5 billion in 2015-16 to **USD 9.4 billion in 2018-19.**
- **India's Exports:** Vehicles and auto parts, organic chemicals, electrical machinery and electronic equipment, aluminium products, readymade garments, iron and steel products and gems and jewellery.
- **India's Imports:** Crude oil, electrical goods and machinery, organic chemicals, vehicles and auto parts and iron and steel.

- **Security:**

Both countries share a **common concern over growing traditional and non-traditional security challenges**, particularly the **rise of global terrorism.**

- **Cultural Ties:**

- The **Gurudev Tagore Indian Cultural Centre** has been functioning in Mexico since October 2010, teaching Yoga, classical dances, music, etc.
- An **agreement on cultural cooperation** has been in existence **since 1975** and cooperation activities are carried out through four-yearly '**Programmes of Cultural Cooperation**'.

- **Indian Community:**

- The Indian community in Mexico is estimated to be more than 7,000, comprising mostly software engineers of Indian IT companies, academics/professors, and private businessmen.
- **Tourism** between the two countries is **steadily increasing** and Mexicans have been extended the **online e-Tourist Visa facility.**
- **Indian nationals holding ordinary passports but having a valid visa for** the USA, the UK, Canada, Schengen area or Japan, and holders of permanent residence in the same countries or Member States of **Pacific Alliance** viz. Colombia, Chile and Peru **do not need a visa for short tourism or business visits** to Mexico.

- **Differences:**

- Mexico and India have had **different viewpoints on the issue of nuclear non-proliferation**. However, during Indian Prime Minister's 2016 visit, Mexico pledged support for India's bid to be part of the **Nuclear Suppliers Group** (NSG).
- Both countries have differences on the issue of **United Nations Security Council (UNSC) reforms**.

Mexico has been a member of the **United for Consensus (UfC) group/Coffee Club** that, unlike India and the other **Group of Four** (G-4) members (Japan, Germany and Brazil), opposes the expansion of permanent membership in the UNSC.

Way Forward

- India and Mexico have striking similarities in geo-climatic conditions, biodiversity, physiognomy and people, cultural and family values. Both are heirs to a great civilizational heritage and contacts between them indicatively go back centuries.
- Both India and Mexico are non-permanent members of the Security Council for the period 2021-2022, which is a good opportunity to set aside their differences on global governance issues and work closely on areas of mutual interest.

Source: PIB

Corporatization of Ordnance Factory Board

Why in News

The Centre's move to corporatize the **Ordnance Factory Board (OFB)** has been strongly opposed by the trade unions.

Key Points

- **OFB:**
 - It is an **umbrella body for the ordnance factories** and related institutions, and is currently a **subordinate office of the Ministry of Defence (MoD)**.
The **first Indian ordnance factory** was set up in the year **1712** by the Dutch Company as a GunPowder Factory, West Bengal.
 - It is a conglomerate of **41 factories, 9 training Institutes, 3 regional marketing centres** and **5 regional controllers of safety**.
 - **Headquarters:** Kolkata
 - **Significance:** A major chunk of the weapon, ammunition and supplies for not just armed forces but also paramilitary and police forces comes from the OFB-run factories.
 - **Production includes:** Civilian and military-grade arms and ammunition, explosives, propellants and chemicals for missile systems, military vehicles, armoured vehicles, optical devices, parachutes, support equipment, troop clothing and general store items.
- **Corporatization:**
 - In September 2020, an **Empowered Group of Ministers (EGoM)** for Corporatization was constituted under the chairmanship of the Defence Minister.
Aim: To oversee and guide the entire process, including transition support and redeployment plan of employees while safeguarding their wages and retirement benefits.
 - The corporatization will **result in the conversion of the OFB into (single or multiple) fully (100%) government-owned entities** under **the Companies Act, 2013** like other public sector undertakings.
- **Reasons for Corporatization:**
 - **A performance evaluation** by the **Comptroller and Auditor General (CAG)** in its report for 2019 on the OFB highlights a few of the lacunae, which ails this organisation.
 - **Overheads** (expenses not directly attributed to creating a product or service) constitute a staggering 33% of the overall allotted budget for the year.
The major contributors being supervision costs and indirect labour costs.
 - **Delayed Production:** The Ordnance factories achieved production targets for only 49% of the items.
More than half the inventory (52%) was **store-in-hand**, procured for manufacture but not used within the year by the factories.
 - The **Atmanirbhar Bharat initiative**, also calls for the Corporatisation of OFB for: **‘improving autonomy, accountability and efficiency in ordnance suppliers’**.

- **Apprehensions:**
 - One of the main apprehensions of the employees is that **corporatisation** (ownership and management lies with the government) **would eventually lead to privatisation** (transfer of ownership and management rights to the private player).
 - The new corporate entities would not be able to survive the unique market environment of defence products that has very **unstable demand and supply dynamics**.
 - Restructuring will result in greater autonomy and lesser government control over the corporation but there is a **fear of job loss**.

Way Forward

- The corporatisation of OFB is likely to transform ordnance factories into a modernised, state of the art facility with flexible and better decision making in its functioning.
- Currently the MoD has deferred the ongoing process till the talks with the unions protesting, reach to a meaningful conclusion. This is a welcome step.
- The broader consultation, on all the major concerns, is essential for sensitive issues like corporatization. Here, the need is to have a reflective road-map for the plan. This can help to ease the apprehensions regarding the corporatization.

Source: IE

Aquaponics Facility

Why in News

A **pilot ‘Aquaponics facility’** has been developed by the **Centre for Development of Advanced Computing (C-DAC)**, Mohali at Guru Angad Dev Veterinary University (GADVASU), Ludhiana.

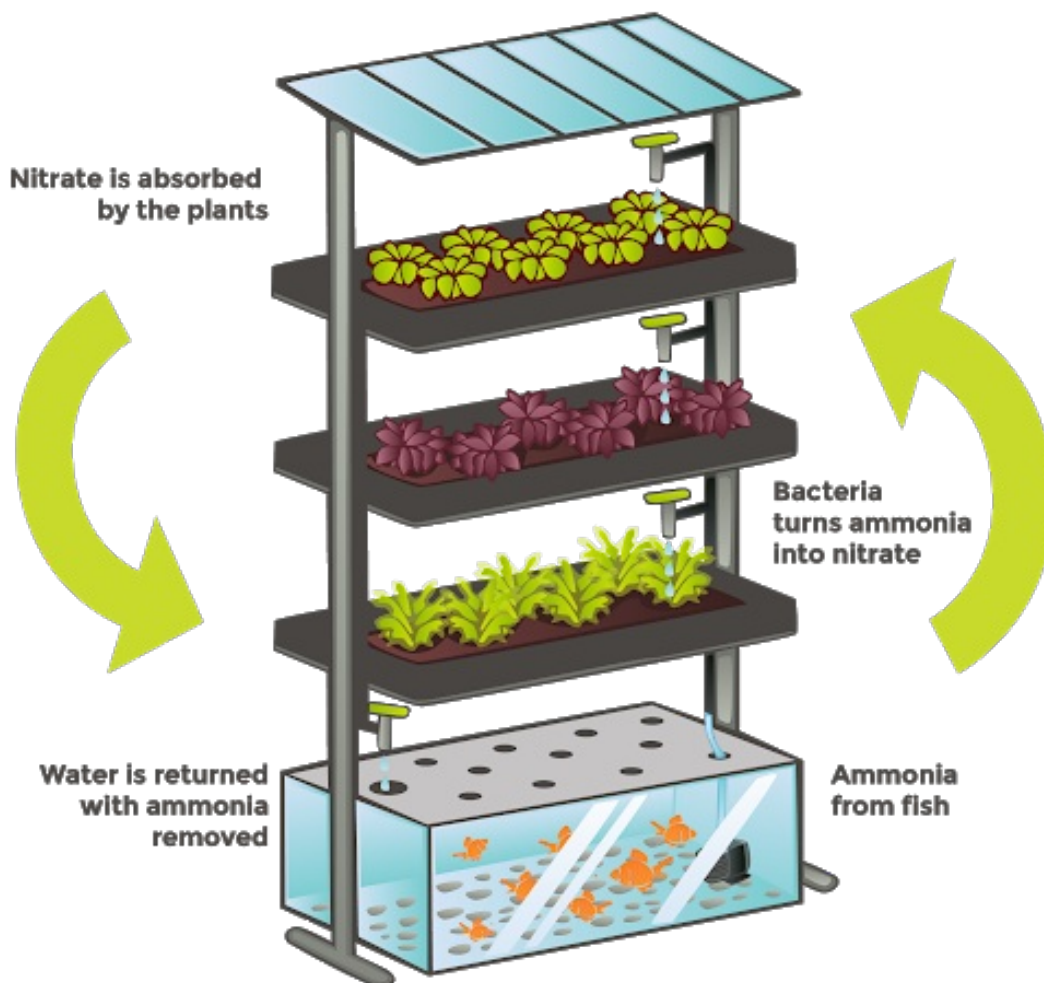
Key Points

- **State-of-the-art facility:** It is equipped with **advanced sensors** for **monitoring and automated controls** of the farming system.
 - The **supercomputing power being provided by C-DAC** in developing agriculture technology.
 - **Funding Support** was provided by **the Ministry of Electronics and Information Technology (Meity)**.

- **Other Features:**
 - The facility is **nearly 100% organic**.
 - Needs much less land for a given yield of crop.
 - Consumes 90% less water.
 - The fish and plants grown together are more nutritious.
- **Significance:**
 - **Demand** for fishes and crops (lettuce, spinach, capsicum, coriander, broccoli and some other leafy plants) is increasing rapidly in urban areas.
 - The **aspirational rural youth will be drawn into the mainstream** with help of this technology and agri-economy will get a boost.
 - This technique will help the farmer in **increasing the productivity** of his land.
 - Also augment farmer's **income** especially in non-coastal areas.

Aquaponics

AQUAPONIC SYSTEM



- Aquaponics is a system that **combines hydroponics, soil-less agriculture, and aquaculture** within a closed system.
 - **Hydroponics:** It is a method of **growing plants** in a **water-based, nutrient-rich solution**.
 - Hydroponics does not use soil, instead, the root system is supported using an inert medium such as clay pellets.
 - The basic premise behind hydroponics is to allow the plant's roots to come in direct contact with the nutrient solution, while also having access to oxygen, which is essential for proper growth.
 - **Aquaculture:** Breeding, raising, and harvesting fish, and aquatic plants.
- There are **three biological components** in the aquaponics process: fish, plants, and bacteria (for cycling of nutrients- ammonia to nitrate conversion).
- **Process:**
 - With aquaponics, the farmer combines the aquaculture with hydroponic vegetables – the **fish waste provides fertilizer** for growing plants.
 - The **plants absorb nutrients and filter the water**. This filtered water is used to **replenish the fish tank**. This is an **environment friendly technique**.
 - The result is value-added, local production of both fish and vegetables together, using the same water.
- **Benefits:**
 - Extremely **water efficient**.
 - **Does not require soil**.
 - **Does not use fertilizers** or chemical pesticides.
 - **Prevents aquaculture waste from polluting** nearby watersheds.
 - Higher **control on production** leading to lower losses.
 - Can be used on **non-arable lands** such as deserts, degraded soil or salty, sandy islands.
 - While the creation of an aquaponics system may require a large initial investment, once it has been built it only **incurs low recurring costs**.
 - In addition, aquaponics can offer **quality-of-life improvements** because the food is produced locally using comparatively simple harvest methods and culturally appropriate crops can be grown.

Centre for Development of Advanced Computing

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

- **Various activities of C-DAC in the area of agriculture:**
 - **Electronic Nose and Vision (ENOVISION) system** for measuring quality parameters of **tea and rice**.
 - This work is being **extended to other products** such as chilli, turmeric and to environmental engineering.
 - C-DAC has also developed **Wireless Data Logger** used for determining the fitness of perishable agricultural items.
 - **Ubiquitous Agriculture (u-Agri):** An **Internet of Things (IoT)** based system for acquiring micro-climate information from agricultural fields and providing personalized and localized advisories on Pest and Disease Forewarning and Irrigation Scheduling, to farmers.

Source: PIB

World Mental Health Day 2020

Why in News

World Mental Health Day is observed on **10th October every year**, with the overall objective of raising awareness of mental health issues around the world and mobilising efforts in support of mental health.

- **2020 Theme:** Mental Health for All, Greater Investment – Greater Access
- **The Big Event for Mental Health:** It is the **first ever global online advocacy event on mental health**, hosted by the **World Health Organisation (WHO)** on the day.

Key Points

- **Impact of Covid-19 on Mental Health:** Surveys have indicated that the **pandemic is increasing** mental health problems.
 - Half the respondents from seven countries in a survey by non-profit **International Society for the Red Cross and Red Crescent Movement** reported negative effects on mental health.
 - **Practo**, an integrated health care company, reported a **665% jump** in the number of mental health consultations.
 - **More than two-thirds** of the queries were from those **aged 21-40**.
 - **Anxiety, stress and panic attacks** were the most commonly discussed topics.
 - In the **United States**, **more than 90% of respondents** to a survey of Harvard Medical School reported **increased worry, frustration, boredom or anxiety**.
 - The **global economic cost of mental illness** is expected to be **more than USD 16 trillion** over the next 20 years, which is more than the cost of any other non-communicable disease.
 - **More Vulnerable:** People in **younger** age, **female** gender and those **with comorbidities** reported more psychological impact.
 - **Causes:**
 - **Related to Pandemic:** The pandemic has **increased isolation and loss of income** which are well known triggers of mental health conditions.
 - The disease itself has been reported to lead to neurological and mental complications such as delirium, agitation and stroke.
 - The **Covid-19** has **disrupted or halted mental health services** in 93% of the countries.
 - **Funding and aid:** Lack of funding for huge challenges posed by pandemic and mental health issues.
 - The **World Health Organisation (WHO)** pointed out that **countries are spending less than 2% of their health budget** on mental health.
 - Only around **1% of the international aid** available for health is earmarked for mental health.

- **Indian Scenario:**

- A report published in The Lancet Psychiatry in February 2020 indicates that in 2017, there were **197.3 million people** with mental disorders in India.
 - The top mental illnesses were **depressive disorder** (45.7 million) and **anxiety disorder** (44.9 million).
 - The contribution of mental disorders to the total DALYs in India increased from 2.5% in 1990 to **4.7%** in 2017.
 - Depressive disorder and anxiety disorder contributed the most to the total mental disorders DALYs.
 - **Disability-Adjusted Life Years (DALYs):** The burden of disability associated with a disease or disorder can be measured in units called disability-adjusted life years (DALYs).

DALYs represent the total number of years lost to illness, disability, or premature death within a given population.
- **Budgetary Spending:** The year 2020 began with a reduction of budget allocation for **mental health in India**.
 - India's healthcare budget in 2018 was Rs. 52,800 crore, of which Rs. 50 crore was for mental health and that was reduced to Rs 40 crore the following year.
 - India is **barely spending 0.5% of the health budget** on this sector.
- **Initiatives:** The **Mental Health Care Act (MHCA) 2017** came into force in 2018 to meet the requirements of the **United Nations Convention on the Rights of Persons with Disabilities** which India ratified in 2007.
 - **KIRAN:** The **Ministry of Social Justice and Empowerment** has launched a **24/7 toll-free helpline** to provide support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.
 - **Manodarpan Initiative:** It is an **initiative** of the **Ministry of Education** under **Atmanirbhar Bharat Abhiyan**.

It is aimed to provide psychosocial support to students, family members and teachers for their mental health and well-being during the times of Covid-19.

Mental Health Care Act, 2017

- **Right to make an Advance Directive**, wherein patients can state on how to be treated or not to be treated for the illness during a mental health situation.

- **Right to appoint a Nominated Representative:** A person shall have the right to appoint a nominated representative to take on his/her behalf, all health related decisions like:
 - Right to access mental health care,
 - Right to free & quality services,
 - Right to get free medicines,
 - Right to community living,
 - Right to protection from cruel, inhuman and degrading treatment,
 - Right to live in an environment, safe and hygienic, having basic amenities,
 - Right to legal aid, and
 - No Electroconvulsive Therapy (ECT) without anesthesia.
- This act brought changes in **Section 309 of the Indian Penal Code** (which criminalized attempted suicide). The attempt to commit suicide is punishable only as an exception.

Way Forward

- Increasing the number of psychologists and psychiatrists alone won't help. Stigma and awareness are two separate issues although interlinked. They need to be addressed in parallel in order to tackle the burden of mental illness.
- **Community Partnership:** By forming **self-help groups** of carers families along with **NGO's** which brings community participation and helps reduce the social stigma associated with mental illness.
- **Increase Resources:**
 - Increasing mental healthcare facilities and related infrastructure through more resource allocation in the budget.
 - Adequate Mental healthcare professional availability.
- **Empathetic Service delivery:** Delivery of services should be sensitive, compassionate and free from stigma and discrimination in public healthcare institutions.

Source: DTE

AMRUT Mission

Why in News

Uttarakhand and Himachal Pradesh have been appreciated for the progress made under AMRUT Mission (**Atal Mission for Rejuvenation and Urban Transformation**).

Both the states were also requested to initiate activities under the “**Catch the Rain**” campaign. The **objective** of this campaign is to **conserve/harvest every drop of water**.

This campaign **incorporates rainwater harvesting** in all the structures of the cities.

Key Points

- **About the AMRUT Mission:**

- **Launch:** June 2015

- **Concerned Ministry:** Housing and Urban Affairs

- **Purpose:**

- To ensure that **every household has access to a tap** with the assured supply of water and a **sewerage connection**.

- The **Priority zone of the Mission** is water supply followed by sewerage.

- To increase the amenity value of cities by developing greenery and well maintained open spaces (e.g. parks).

- To **reduce pollution** by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).

- **Components:**

- Capacity building, reform implementation, water supply, sewerage and septage management, storm water drainage, urban transport and development of green spaces and parks.

- The **reforms** aim at improving delivery of citizen services, bringing down the cost of delivery, improving financial health, augmenting resources and enhancing transparency. It also includes

- **replacement of street lights with LED lights.**

- **Central Sponsored Scheme:** Total outlay for AMRUT was Rs. 50,000 crores for five years from FY 2015-16 to FY 2019-20.

- Unable to meet set targets for urban renewal in 500 cities, the Centre has **extended the mission period of AMRUT upto 31st March, 2021.**

- **State Annual Action Plan (SAAP):**

- AMRUT has made states equal partners in planning and implementation of projects by approval of SAAP once a year by MoHUA and states have to give project sanctions and approval at their end, therefore actualisation of **cooperative federalism.**

- **Supervision:** An Apex Committee (AC), chaired by the Secretary, MoHUA and comprising representatives of related Ministries and organisations supervises the Mission.

- **Status of AMRUT Mission in Uttarakhand and Himachal Pradesh:**
 - Himachal Pradesh is ranked 15th and Uttarakhand 24th in AMRUT's National rankings (performance-based).
 - Odisha topped the rankings.
 - Both the States have implemented the **Online Building Permission System (OBPS)** in their Mission cities.
 - OBPS is a part of '**Ease of Doing Business**' and should be implemented in all the Urban Local Bodies (ULBs) apart from Mission cities.
 - The **Credit Rating work** has been completed in all Mission cities in the two States.
 - Credit rating is an assessment of an ULB's ability to pay its financial obligations.
 - Both the States were informed that the Ministry has developed a **common Dashboard** for all the Missions (e.g. **Pradhan Mantri Awas Yojana - Urban, Smart Cities Mission**) of the Ministry where information relating to all States/UT and cities would be available. The States/UT may use this facility for **monitoring the progress**.
 - States were requested to update the details of Missions regularly so that the progress would be updated in the portal/dashboard. This data is used for monitoring, reviewing and assessment of monthly rankings on the progress among the states.

Source: PIB

Gujarat's Disturbed Areas Act

Why in News

The **President has given his assent to a Bill passed by the Gujarat Assembly** in 2019, which made **some amendments** to the 'Gujarat Prohibition of Transfer of Immovable Property and Provisions of Tenants from Eviction from Premises in Disturbed Areas Act, 1991' - popularly known as the '**Disturbed Areas (DA) Act**'.

Key Points

- **About the Act:**

- The Act was **first introduced in Ahmedabad** in 1986.
 - At that time, due to large scale and continuous riots in Ahmedabad city, a number of areas started witnessing distress sale of properties mainly by people of a particular community.
 - To check that, the then Gujarat government had brought in an ordinance. Later, it was converted into the DA Act in 1991.
- Under the DA Act, a **District Collector can notify a particular area** of a city or town as a “**disturbed area**”. This notification is generally done **based on the history of communal riots in the area**.
- Following this notification, the **transfer of immovable property** in the disturbed area **can take place only after the Collector expressly signs off on an application** made by the buyer and the seller of the property.
 - In the application, the seller has to attach an **affidavit** stating that she/he has sold the property of her/his free volition, and that she/he has got a fair market price.
- **Violation of the Act’s provisions**, that is, if property in a notified disturbed area is transferred without the Collector’s permission, **invites imprisonment and a fine**.
- The state government claims it is **aiming to check communal polarisation of various parts** of the state through the Act.
- The DA Act is **applicable in** Ahmedabad, Vadodara, Surat, Himmatnagar, Godhra, Kapadvanj and Bharuch.

- **Reasons for Amendment:**

- There were reports of **anti-social elements selling and buying properties** after either threatening people or luring them with higher prices, in areas marked as “disturbed”.
- It was reported that at times, anti-social elements had **got transfers done even without the Collector’s prior permission** by getting the transfer deed registered under the provisions of the Registration Act, in which the Collector’s prior sanction under the DA Act was not required.
 - This had resulted in clustering or polarisation of localities.
- To plug such loopholes, and **to increase the punishment for the violation of the Act as deterrence**, the amendment Bill was presented and passed in the Gujarat Assembly in July 2019.

- **Amendments:**

- **More Powers to the Collector:** To ascertain if there is a likelihood of “polarisation” or “improper clustering” of persons belonging to a particular community, thus disturbing the demographic equilibrium in the area.
For probing these aspects, the **formation of a Special Investigation Team (SIT)** has also been envisaged.
- **Review Power to the State:** The state government is authorised to review a decision taken by the Collector.
- **Advisory Committee:** Enables the state government to form an advisory committee that will advise it on various aspects of the DA Act, including adding new areas to the ‘disturbed areas’ list.
- **Disturbed Area:** The government **can notify any area as a ‘disturbed area’ where it sees the possibility of a communal riot**, or where it sees the possibility of a particular community’s polarisation.
- **Strict Provisions:**
 - To check the registration of transfer of properties in disturbed areas without the Collector’s prior approval, the amended Act has a provision to **enlarge the scope of the term ‘transfer’**, and include transfer of right, title or interest in or over such property in disturbed areas by way of sale, gift, exchange, and lease.
 - The Act has **amended the Registration Act** under which no property in disturbed areas can be registered without prior sanction of the Collector.
 - **Redevelopment of the Property** is allowed only if it is for the owner’s purpose. But if the owner is planning to bring new people on the redeveloped property, she/he has to take the permission of the Collector.
- **Non-Applicability:** The provisions of the Act will not be applicable to the **government’s rehabilitation schemes** in a disturbed area, where it resettles displaced people.
- **Penal Provisions:** The amendment has **increased the punishment to imprisonment between three and five years**. The **fine** has also been **increased to Rs. 1 lakh, or 10% of the jantri rate** (ready reckoner of property prices in different parts of the state) of the property, **whichever is higher**.

The punishment for the violation of the Act was earlier imprisonment for six months and fine up to Rs.10,000.

Source: IE

C-DAC’s MoUs on Supercomputing

Why in News

Recently, the **Centre for Development of Advanced Computing** (C-DAC) under the **Ministry of Electronics and Information Technology** (Meity) has signed 13 MoUs with the **premier academic and research and development** (R&D) institutions of India.

Key Points

- **Aims behind the Move:**
 - To **establish supercomputing infrastructure** with assembly and manufacturing in India and **critical components** of the **National Supercomputing Mission**.
 - **Supercomputing** has **applications** in so many areas like computational biology and chemistry, molecular dynamics, national security, **big data** analytics, government information systems, and so on.
 - It becomes a powerful tool, paired with **artificial intelligence (AI) and machine learning (ML)**, enabling it to empower people and make India ready to tackle future challenges.
 - To develop **India's indigenous hardware** encompassing **exascale** chip design, design and manufacture of exascale server boards, exascale interconnects and storage including **silicon-photonics** at C-DAC to **achieve complete self-reliance** envisioned under the **Aatmanirbhar Bharat** Initiative.
 - **Exascale computing** refers to computing systems capable of calculating at least 10^{18} floating-point operations per second.
 - **Silicon photonics** is an evolving technology in which data is transferred among computer chips by optical rays. Optical rays can carry far more data in less time than electrical conductors.

- **National Supercomputing Mission:**

- It was **announced in 2015**, with an aim to connect national academic and R&D institutions with a grid of more than 70 high-performance computing facilities at an estimated cost of **Rs. 4,500 crores** over a **period of seven years**.
- It supports the government's vision of '**Digital India**' and '**Make in India**' initiatives.
- It is being implemented by the **Department of Science and Technology (DST)** and **Department of Electronics and Information Technology (DeitY)** through **C-DAC and Indian Institute of Science (IISc)**, Bangalore.
- **The Mission envisages:**
 - To improve the number of **supercomputers** owned by India.
 - To **build a strong base of 20,000 skilled persons** over a period of five years who will be equipped to handle the complexities of supercomputers.
 - To empower Indian national academic and R&D institutions to spread over the country by **installing a vast supercomputing grid** comprising more than 70 **high-performance computing (HPC)** facilities.

India's Top Five Supercomputers

Indian Institute of Tropical Meteorology India	Pratyush - Cray XC40, Xeon E5-2695v4 18C 2.1GHz, Aries interconnect Cray Inc.	4,006.2 TFlop/s
National Centre for Medium Range Weather Forecasting India	Mihir - Cray XC40, Xeon E5-2695v4 18C 2.1GHz, Aries interconnect Cray Inc.	2,808.7 TFlop/s
Software Company (M) India	InC1 - Lenovo C1040, Xeon E5-2673v4 20C 2.3GHz, 40G Ethernet Lenovo	1,413.1 TFlop/s
Supercomputer Education and Research Centre (SERC), Indian Institute of Science India	SERC - Cray XC40, Xeon E5-2680v3 12C 2.5GHz, Aries interconnect Cray Inc.	1,244.2 TFlop/s
Indian Institute of Tropical Meteorology India	iDataPlex DX360M4, Xeon E5-2670 8C 2.600GHz, Infiniband FDR IBM	790.7 TFlop/s

- **PARAM 8000**, considered to be **India's first supercomputer** was indigenously built in **1991** by C-DAC.
- **SUMMIT (USA)** is the **fastest supercomputer in the world** which can deliver upto 187,659.3 TFlop/s.

Source: PIB

Increase in Human-Leopard Conflict: Study

Why in News

A study conducted across Karnataka indicates that the **human-leopard policy guidelines** have had little impact on the ground and it has not led to decrease in human-leopard conflict.

The **guidelines for human-leopard conflict management** were brought out by the Government of India in April 2011 **to reduce conflict with leopards, discourage their translocation, and suggest improved ways of handling emergency conflict situations.**

Key Points

- **Findings of The Study:**
 - The number of leopards captured per month **increased more than threefold** (from 1.5 to 4.6) since 2011.
 - Similarly, there was a **threefold increase in the number of leopards translocated** per month (from 1 to 3.5).

Translocation is the managed movement of live indigenous plants or animals (taonga) from one location to another.
 - **Reasons for capture and translocation of leopards (in order of prominence)**
 - Livestock depredation (38.1%)
 - Leopards rescued from snares and wells (15.7%),
 - Anxiety caused owing to leopard sightings in human habitations (13.7%),
 - Leopards entering human dwellings (10.9%).
 - Human injuries (4.5%)
 - Human deaths (2%)

- **Other Related News**

- A recent study by **TRAFFIC** India on the seizure and mortality of ‘**common leopards**’ (*Panthera pardus fusca*) revealed that of the total of 747 leopard deaths between 2015-2019 in India, 596 were linked to illegal wildlife trade and activities related to poaching.
- The Government of India launched the **First National Protocol on Snow Leopard Population Assessment** in **2019**, to mark the occasion of **International Snow Leopard Day (23rd October)**.
- In **2014**, a **national census of leopards around tiger habitats** was carried out in India except for the northeast. 7,910 individuals were estimated in surveyed areas and a national total of **12,000-14,000 estimated**.



Common Leopard (*Panthera pardus*)

- **Habitat:** It occurs in a wide range in sub-Saharan Africa, in small parts of Western and Central Asia, on the Indian subcontinent to Southeast and East Asia.
The Indian leopard (*Panthera pardus fusca*) is a leopard widely distributed on the Indian subcontinent.
- **Threats:** Habitat loss and fragmentation, poaching for the illegal trade of skins and body parts, and persecution due to conflict situations

Source: TH

Mars Opposition

Why in News

Due to the ‘**opposition**’ effect, **Mars** will look much **brighter and bigger than usual** in October 2020.

Key Points

- **About Opposition:**

- Opposition, in astronomy, is the **circumstance** in which **two celestial bodies appear in opposite directions in the sky.**
- **Examples:**
 - The **Moon**, when **full**, is said to be in opposition to the Sun; the Earth is then approximately between them.
 - A **superior planet** (one with an **orbit farther from the Sun than Earth's**) is in opposition when Earth passes between it and the Sun.
 - The **opposition of a planet is a good time to observe it**, because the **planet is then typically at its nearest point to the Earth** for a given year and because it is close, the planet appears brighter in the sky.
 - The planets **Venus and Mercury**, whose orbits are smaller than Earth's, **can never be in opposition to the Sun.**

- **About Mars Opposition: Mars and the Sun are on directly opposite sides of Earth.**

- Timing:**

- About **every 26 months**, the Earth passes between the Sun and Mars, this is when the three are arranged in a straight line.
 - In **2020**, while **Mars' closest approach to Earth** was on **6th October**, the **opposition** happened on **13th October**.
 - **Mars's next close approach** will happen on **8th December, 2022**, when the planet will be 62.07 km away from the Earth.
 - Significantly, the **closest distance is relative** and hence can **vary**.
 - As per NASA, **Mars** made its **closest approach to Earth** in **2003** in nearly 60,000 years and it **won't be that close to the planet until 2287**.
 - This is because the **orbits of Earth and Mars are not perfectly circular** and their shapes can change slightly because of **gravitational tugging** (pulling) **by other planets**. For instance, Jupiter influences the orbit of Mars.

- **Significance:**

- **Mars will outshine Jupiter**, becoming the **third brightest object** (moon and Venus are first and second, respectively) in the night sky during the month of October.
- During Opposition, Mars **appears as a bright star to the unaided eye** and when viewed from a telescope, it grows dramatically in size. Using a telescope **shows more of the planet's details** such as dark and light regions, the solar ice caps and Mars' surface.



Source: IE
