

MONTHLY

EPIC!

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PREPARATION

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The Sixth edition

Dear Forumites,

The sixth edition of EPIC! Magazine, comes at a crucial time for mains preparation. As the mains exams are fast approaching, this magazine provides the perfect value addition required to get the extra marks required to improve your chances for clearing mains. EPIC! Magazine provides issue-based analysis of mains related topics. Also, the magazine covers in-depth analysis to equip the aspirants to deal with unanticipated aspects of the exam.

Apart from this Factly will provide relevant prelims oriented facts vital for 2021 aspirants. Add new content everyday so that, your knowledge becomes dynamic, relevant and reproducible for the examination.

EPIC! series of current affairs magazine provides a segregated yet complete monthly coverage of current affairs for civil services preparations. Aggregating the various view points from our 9PM and 7PM initiatives, this edition contains interesting analysis of issues like urban poverty, air pollution, institutions and their performance, deepening India-USA relations and many more.

You can contribute to the topics you would like us to cover or provide your feedback by writing to us at feedback@forumias.academy.

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SHOWCASE ARTICLE

Exploring India-USA ties

Syllabus: International Relations

In News: India has recently hosted the third edition of 2+2 ministerial dialogue with the US.**Significance of the 3rd 2+2 dialogue:**

- **Strengthening bilateral relations:**

This meeting demonstrated the strength of the bilateral relationship even during these unprecedented times. The USA reiterated its support to India in defending its territorial sovereignty in the background of the ongoing standoff between India-China.

- **Common vision for a free and open Indo-Pacific region:**

- The United States and India share a similar vision of the Indo-Pacific based on a shared commitment to a rules-based order that respects the sovereignty of all countries and ensures freedom of navigation and overflight.
- Both countries released a **joint Statement on shared Indo-USA goals in the Asia-Pacific region** and emphasised that the Code of Conduct in the South China Sea should not prejudice the legitimate rights and interests of any nation in accordance with international law.
- **Defence cooperation:** Conclusion of the **Basic Exchange and Cooperation Agreement**, which is the last of four defence “enabling” agreements and together facilitate **closer military cooperation and interoperability**.
- **Shared interests:**
 - It reflects alignment on security issues of mutual concern, and a recognition that only by working together and with like-minded partners India can address the formidable challenges.
 - Present visit of Mark Pompeo in the backdrop of recent tensions with China is very important for India on 3 fronts: the LAC, in the maritime sphere, and in the South Asian Association for Regional Cooperation (SAARC).

WHAT IS 2+2 DIALOGUE?

- It is an official format of dialogue where **participants are the defence and foreign ministers or secretaries** with their counterparts from both participating countries.
- The **goal of 2+2 Ministerial** is to facilitate the highest-level dialogue on the bilateral, regional, and global issues between countries.
- India holds such talks at the **foreign secretary and defence secretary level** with Australia but with Japan and the US, these talks were held at the ministerial level.
- **1st India-US 2+2 dialogue** was held in New Delhi in September 2018.
- In December 2019, the United States hosted the second 2+2 Ministerial Dialogue in Washington.
- 2+2 serves as the premier dialogue mechanism between the United States and India, there are more than thirty bilateral dialogues and working groups.

- **Other major agreements:** India USA signed Memorandum of Understanding (MoU) on Technical Cooperation in Earth Observations and Earth Sciences, agreement to extend the duration of the MoU on the Global Centre for Nuclear Energy Partnership, agreement on the electronic exchange of customs data, letter of intent regarding cooperation in traditional Indian medicines and Discussed the status of Afghanistan.

BECA

- **The Basic Exchange and Cooperation Agreement** pertains to geospatial intelligence, and sharing information on maps and satellite images for defence.
- The geospatial maps and charts to be shared, will be acquired from multiple sources like satellites, unmanned aerial vehicles (UAVs), reconnaissance aircraft, aerostats, among others.
- Signing BECA (Basic Exchange and Cooperation Agreement) will allow India to **use the US's advanced geospatial intelligence** and enhance the accuracy of automated systems and weapons like missiles and armed drones.

LEMOA:

- The **Logistics Exchange Memorandum of Agreement** was signed between India and the US in August 2016.
- It allows the military of each country to **replenish from the other's bases: access supplies and services from the other country's land facilities, air bases, and ports, which can then be reimbursed.**
- This is extremely useful for **Navy-to-Navy cooperation since** the US and India are cooperating closely in the Indo-Pacific.

COMCASA

- The Communications Compatibility and Security Agreement was signed in September 2018.
- It allows the US to provide India with its encrypted communications equipment and systems so that Indian and US military commanders, aircraft and ships can communicate through secure networks in peace and war.
- It is like WhatsApp for the two militaries, which is safe and provides real-time communication.
- COMCASA paved the way for transfer of communication security equipment from the US to India to facilitate "interoperability" between their forces and potentially with other militaries that use US-origin systems for secure data links.

Different dimensions of India-US relations

India US Defence relations

- **Defence Technology and Trade Initiative (DTTI):** India and the United States have launched a Defence Technology and Trade Initiative (DTTI) aimed at simplifying technology transfer policies and exploring possibilities of co-development co-production to invest the defence relationship with strategic value.
- **Defence strategic partnership:** USA has elevated US-India defence relationship to a "Major Defence Partnership" in 2016 was a milestone that set our bilateral defence

cooperation on a new trajectory. On the defence fronts, India-US relations are far better compared to the trade-related relations.

- **Cooperation in Indo-Pacific:** The 2018 USA's **National Defense Strategy** identified the "re-emergence of long-term, strategic competition" as the central challenge to prosperity and security, and called for expanding alliances and partnerships in the Indo-Pacific region.
- **Bilateral exercises:** Several bilateral exercises are conducted by India and U.S. The American and Indian militaries have participated in bilateral exercises like Yudh Abhyas, Cope India, Malabar and Vajra Prahar. India conducts more military exercises with U.S than any other country. In 2019, the first-ever India-US tri-service military exercise (called "Tiger Triumph") was held. Malabar exercises are being held between India, US and Japan to improve coordination between their maritime fleets. Australia has also been included recently.
- **Defence trade:** As of 2009-2013, U.S is second largest defence supplier (7.4%). The US has tried to clear all roadblocks in the way of India for making any defence related purchase e.g; India is "the first non-treaty partner to be offered an MTCR Category-1 Unmanned Aerial System" from US. India has procured over \$18 billion worth of defence items from the US, half of this in the last five years.

Strategic ties:

- **USA's New Security strategy (NSS):** It promotes a deeper partnership with India and asks Pakistan to crack down on "transnational terrorists" operating from its soil. The document explicitly includes India in its definition of the Indo-Pacific.
- **Mutual interests:** The United States and India have shared interests in promoting global security, stability, and economic prosperity through trade, investment, and connectivity.

Cooperation at multilateral level:

- **International cooperation:** India and the United States cooperate closely at multilateral organizations, including the United Nations, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization. In 2019, the United States joined India's Coalition for Disaster Resilient Infrastructure to expand cooperation on sustainable infrastructure in the Indo-Pacific region.
- **QUAD grouping:** The Quadrilateral Security Dialogue has its roots in the Core Group of four senior diplomats representing the USA, Japan, and Australia with a shared objective to ensure and support a free, open, and prosperous Indo-Pacific region.
- **Five eye grouping:** India's first-ever participation, in a meeting of the exclusive Five Eyes grouping that facilitates intelligence-sharing among the US, Canada, UK, Australia and New Zealand.
- **Malabar exercise:** It is an annual trilateral naval exercise between the navies of India, Japan, and the US which is held alternately in the Indian and Pacific Oceans.

India-US Trade relations:

- **Enhanced trade:** India's trade relations with the US has been a mixed bag of issues and achievements. From 1999 to 2018, trade in goods and services between the two countries surged from \$16 billion to \$142 billion. In 2019, overall U.S.-India bilateral trade in goods and services reached \$149 billion.
- **Growth in bilateral trade:** In 2018, the Indian manufacturing trade in the US reached US\$50.1 billion for the first time, surging by approximately US\$6 billion over the 2017 figures. Bilateral trade in goods and services grew by more than 10% per annum over the past two years to reach \$142 billion in 2018.
- **Arm supplies:** The US has become India's second-largest arms supplier. India-US defence trade. From nearly zero in 2008, it has increased to over US\$15 billion in 2018. India is poised to order a record 2,300 new planes, possibly from US manufacturers such as Boeing, over the next 20 years.
- **Energy supplies:** India's import of US crude rose threefold in early 2019.

Counter-terrorism

- **Cooperation in counter-terrorism:** There has been considerable progress in cooperation in counter-terrorism with intelligence sharing, information exchange, operational cooperation, counter-terrorism technology, and equipment.
- **India-US Counter-Terrorism Cooperation Initiative:** It was signed in 2010 to expand collaboration on counter-terrorism, information sharing and capacity building.
- **Global cooperation:** Both Support UN Comprehensive Convention on International Terrorism to advance and strengthen the framework for global cooperation and reinforce the message that no cause or grievance justifies terrorism.
- **Bilateral cooperation:** Both India & U.S have denounced any use of terrorist proxies in the region, and in this context, they called on Pakistan to ensure that the territory under its control is not used to launch terrorist attacks on other countries.

Energy and Climate Change

- **U.S.-India Energy Dialogue:** The U.S.-India Energy Dialogue was launched in May 2005 to promote trade and investment in the energy sector
- **Six working groups:** oil & gas, coal, power and energy efficiency, new technologies & renewable energy, civil nuclear co-operation and sustainable development
- **Promoting clean energy:** Memorandum of Understanding (MoU) between the Government of India and the Government of the United States of America to enhance cooperation on Energy Security, Clean Energy and Climate Change was signed in 2016.
- **Energy exports:** The **bilateral Strategic Energy Partnership** was launched in April 2018. In 2018 India purchased 48.2 million barrels of U.S. crude oil, a significant increase from 9.6 million in 2017. With India's energy demand expected to grow at 4.2% per year over the next 25 years, it has contracted 9 million metric tonnes per annum (mmtpa) of LNG from the US, making it the sixth-largest buyer of US LNG.
- **PACE (Partnership to Advance Clean Energy):** As a priority initiative under the PACE (Partnership to Advance Clean Energy), the U.S. Department of Energy (DOE) and the Government of India have established the Joint Clean Energy Research and Development

Center (JCERDC) designed to promote clean energy innovations by teams of scientists from India and the United States, with a total joint committed funding from both Governments of US\$ 50 million.

People to people relations

- **Presence of diaspora:** The strong people-to-people ties between our countries, reflected in a **four million-strong Indian American diaspora**, are a tremendous source of strength for the partnership.
- **Increasing number of Indian students:** The total number of Indian students in the United States has more than doubled over the last decade, from 81,000 in 2008 to a record high of 202,000 in 2019.

Issues in India-USA ties:

Trade-related issues

- **Trade deficit:** the US is one of the countries, with which India enjoys a trade surplus. Although the trade surplus is reducing with time, it is still at \$23.3 billion. It is one of the concerns of US officials.
- **Tariff barriers:** US officials have been critical of India's Tariff and non-tariff barriers. In the past, USA's President has called India's tariffs "unacceptable," and has described India as the "king" of tariffs. Whereas in 2018 the US levied across-the-board import tariffs of 25 per cent and 10 per cent, on steel and Aluminium, respectively. India increased tariff on Agri products from the US in retaliation.
- **Non-tariff Barriers:** India has been putting many Non-tariff restrictions on the US products e.g. India's restrictions on US daily products due to 'blood-meal', a protein-rich dietary supplement for cattle that utilises blood from slaughtered animals.
- **Withdrawal of GSP:** Following a public review process, the Trump administration removed India from the GSP program on the pretext that India is prohibiting the "equitable and reasonable" access to its markets.

Visa related:

- **'America First':** there have been continuous efforts to cut down the outside workforce.
 - Repeated restrictions on visas are one of such examples, recently, US state department has decided not to issue temporary business visas for H- 1B speciality occupations which allowed several companies to send their technology professionals for a short stay to complete jobs on-site in the US, a move which could affect hundreds of Indians.

Intellectual property rights (IPR) related issues:

- **Intellectual property rights (IPR):** Intellectual property rights in India have been a chief U.S. concern. As per "Special 301 report" of US, India continues to be on the 'Priority Watch List' of the United States Trade Representative (USTR) for lack of adequate intellectual property (IP) rights protection and enforcement and copyright policies that do not properly incentivize the creation and commercialization of content.

- **Data localisation requirement:** India's requirement for Fintech companies to store and process data in local servers also became a cause of concern among US companies.

Other major irritants:

- **India-Russia relations:** India's decision to buy the Russian made S-400 Triumph missile defense system despite threats of American sanctions through the Countering America's Adversaries through Sanctions Act (CAATSA) is a case, where Washington's priorities clash with India's interests.
- **India-Iran relations:** Iran is one of the largest suppliers of crude oil to India — about 15 per cent of our crude supply came from Iran. Iran is important for energy security of India. But US CAATSA and the U.S. attempted to undercut India's strategic ties with Iran are going to posing serious challenges for Indian foreign policy.
- **Recent conflict:** In wake of the COVID-19 pandemic, President Donald Trump on April 7th, 2020, spoke of "retaliation" if India turned down his request to lift the hold on US orders of an antimalarial drug, hydroxychloroquine which he has touted as a "game-changer" in the fight against the coronavirus despite its untested efficacy.
- **Tariff related issues:** the USA wants these to reduce and want India to have a more predictable regime. Although the USA and India's trade grew by 10 % per annum for the past 2 years it has much more potential.
- **USA and Pakistan relation:** the USA has nuanced its position on Pakistan in the last few months. USA- Pakistan and Taliban deal will be some of the criteria for India to test the USA.

Way forward

- **New trade deal:** It will make it a lot easier to deal with Trump's administration on a range of issues including terrorism, Kashmir, and the unfolding crisis in Afghanistan.
- **Strengthen technological cooperation:** The government could press for more **cooperation on 5G technology** sharing or assurance that its S-400 missile system purchase from Russia will receive an exemption from the U.S.'s Countering America's Adversaries through Sanctions Act (CAATSA) sanctions.
- **Protect bilateralism:** India needs to make sure that India-U.S. bilateralism survives the ill effects of unilateralism without compromising India's friendly position.
- **Protect common interests:** India and the U.S. should strengthen the relationship on **global and regional levels** and look for issues of **common interest** which can provide enormous opportunities for both countries to work closely in reshaping the global political order.
- **Strategic autonomy:** In international politics, there are **no permanent friends and no permanent enemies**, only permanent interests in such a scenario India must continue to pursue its foreign policy of strategic hedging.
- **Rule based order:** India needs to fully engage with the US and other partners in the Indo-Pacific region, in order to **preserve the freedom of navigation and the rules-based order**.

GENERAL STUDIES 1

Urban Poverty: a new form of vulnerability

Syllabus: Poverty and Developmental issues

In News: India needs policy intervention to uplift its urban poor.

What are the factors responsible for shifting locus of poverty from rural to urban India?

- **Asymmetric development:** The green revolution exacerbated the disparities regionally and between large and small farmers. Unwillingness and inability to redistribute land further created an asymmetry in demography.
 - The overall growth of agriculture and industry have not been adequate leading to widening of gap between poor and rich.
 - The benefits of economic growth have not trickled down to the poor.
- **Push- pull factors:** In India, the causes of urban poverty can be a result of push-pull factors, such as:
 - **Push:** Lack of social infrastructure (health and education facilities) in rural areas.
 - **Pull:** Scope of better income and good standard of living force inhabitants of rural regions to seek out work in urban areas.
- **Lack of skills:** Most of the poor are not able to participate in the emerging employment opportunities in different sectors of the urban economy as they do not have the necessary knowledge and skills to do so.
- **Inflation:** A steep rise in the price of food grains and other essential goods further intensifies the hardship and deprivation of lower-income groups.
- **Unequal distribution:** The unequal distribution of income and assets has also led to the persistence of poverty in urban India.

What are the problems faced by urban poor?

- **Lack policy support** of the kind provided in the West.
 - During its urbanization, the lives of slum residents in India have been full of instability and unpredictability.
- **They have disposable livelihoods**, as they usually make a living when well-off city residents need their services.
 - The recent pandemic has further led to a steep fall in the incomes of slum dwellers.
- **Multiple informalities:** Informality of various kinds fill the lives of slum residents with risk and uncertainty.
 - Only tiny share of slum residents has formal jobs with written contracts.
 - More than 70% have homes without titles, and 40% lack identity papers needed to access entitlements.
- **Persistent poverty:** The pandemic pushed many slum families into persistent poverty.

- For example, residents from 35 out of 40 settlements in Patna continued to cut back on food or other essentials, while residents from 30 settlements needed to borrow money to meet essential needs.
- **Social injustice:** At personal level, poor are more vulnerable to social prejudices and injustice in their day-to-day work.
 - The poor are victims of all types of injustice and violence.
 - Particularly, low caste people and minority, especially women, children, the elderly, disabled and destitute have no access to social justice
- **Few good jobs:** The urban labour forces are growing but regular factory jobs are not growing alongside leading to a huge scarcity.
- **Poor skill development:** They lack skills required for employment and with poor skills they struggle to get jobs.
- **Scarcity of housing and spaces:** There is scarcity of proper houses in urban areas for poor as a result they end up living in places which lack basic amenities.
- **Lack of health facilities:** Unhealthy lifestyle leads to higher prevalence of non-communicable diseases including diabetes, hypertension, and cancers, outbreaks of seasonal diseases, accidents and injuries, and diseases resulting from air pollution.
 - Further, the healthcare service delivery system in towns fail to provide facilities to poor.

Fight against Poverty in India

- In 1877, Dadabhai Naoroji presented the first estimates of poverty in his paper 'Poverty in India'. It was subsequently published in his book **Poverty and Un-British Rule in India** in 1899.
- During freedom struggle the idea of poverty got reflected in Mahatma Gandhi's references to Antyodaya and later in the **National Planning Committee** reports of 1938.
- Many stalwarts, mainly **Babasaheb Ambedkar supported the idea of economic emancipation** as a precondition for a vibrant democracy.
- The constitution-makers were conscious that the task of a free India was to ensure freedom from exploitation, poverty, and inequality. Thus, the **Directive Principles of State Policy** lays out that it is the responsibility of the state in providing adequate means of livelihood and better provisions for ensuring equality in assets, opportunity, and access for all citizens.
- During the late Sixties and early Seventies, with the call of "Garibi Hatao" by Indira Gandhi, poverty became an **issue of political mobilisation** and a priority for economic policy-making. It gave impetus for the initiation of poverty alleviation programmes of the central government as well as the states.

Government Initiatives:

- **The Pradhan Mantri Awas Yojana (Urban) Programme** launched by the MoHUPA, in Mission mode envisions provision of Housing for All by 2022. The Mission seeks to address the housing requirement of urban poor including slum dwellers.

- MoHUPA is implementing a Centrally Sponsored Scheme **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)** for reducing the poverty and vulnerability of urban poor households since 2013. The Mission covers all the statutory towns, to be decided by the State as per local need and capability.
- **The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014** aims to protect the rights of urban street vendors and to regulate street vending activities. So far 33 States/UTs have notified the scheme. Meghalaya has its own Street Vendors Act.
- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Atal Pension Yojana (APY)** seek to bring unorganised sector workers and poor across the country (including rural areas) under the safety net of insurance and pension.
- **Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM):** A pension scheme for unorganised workers was launched.
- **Rurban Mission to bridge rural-urban divide:** Aimed at strengthening rural areas by provisioning of economic, social and physical infrastructure facilities. Taking also into view, the advantages of clusters, both from an economic view point as well as to optimize benefits of infrastructure provision, the Mission aims at development of 300 Rurban clusters, in the next 5 years.
- **Prime Minister Garib Kalyan Yojana (PMGKY):** It allows individuals to deposit money that has not been taxed. Under the scheme, 50% of the untaxed amount must be paid.
- **PM SVANidhi scheme:** it was launched for Street Vendors by not only extending loans to them, but also for their holistic development and economic upliftment.
 - The scheme intends to facilitate collateral free working capital loans of up to INR10,000/- of one-year tenure, to approximately 50 lakh street vendors, to help resume their businesses in the urban areas, including surrounding peri-urban/rural areas.

What are the steps to be taken?

- **Need for policies:** Three kinds of policies are necessary:
 - **The conditions of employment** must progressively be made more secure, with workplace protection, old-age support, and health care benefits.
 - **The process of slum notification needs to be accelerated**, so the threat of demolition passes, even if individual titles are not given immediately.
 - **Interventions are required in education and skills training**, and to make entrepreneurship more rewarding.

Such efforts are being made on a small scale by organizations promoting social mobility, including Prerana in Bengaluru, Udaan Foundation in Mumbai, and CSRL in various cities.

- **Affordable and reliable health care:** It is necessary to reduce high out-of-pocket expenditures.

- The government seems to be pursuing this through Ayushman Bharat.
- Learning from COVID pandemic should be incorporated to focus on social determinants of healthcare by creating a robust, equitable, inclusive, and sustainable infrastructure.
- **Decentralise urban growth:** Urban planning should be decentralised by focusing on smaller cities and towns. This will lessen the burden of migrant population on megacities and enhance the liveability within the city.
- **Build a credible Database:** A credible database of the urban poor and migrants and mapping their skills at the district level will help in proper targeting of the schemes.
 - The national migrant database, announced by the National Disaster Management Authority is a step in this direction.
- **Focus on urban areas:** Around 12 crores of this lockdown-induced newly poor are in urban areas. Thus, a 'direct' employment program implemented through municipal corporations could be introduced to guarantee 20 days of work in urban areas. This will also stop the reverse migration from urban to rural areas.
- **Wage subsidy:** To encourage a revival of small and medium enterprises (SMEs) in the most prominent clusters, wage subsidy can be provided in the employer-contractor facilitation programs.
- **Reform the Urban Governance:** Rebuild urban governance model on the following pillars:
 - Convergence and accountability;
 - urban populace specific schemes;
 - wider public participation; and
 - use of the latest technologies.
- **Urban NREGA:** Under the scheme, states should be empowered to take more capital focused expenditure that has a large multiplier effect with encouragement on creation of more public goods like roads, bridges, schools, and hospitals.
- **UBI- universal basic income:** Universal Basic Income (UBI) is a model for providing a sum of money to all citizens of a country or other geographic area with a given sum of money, regardless of their income, employment status.
 - The purpose of the UBI is to prevent or reduce poverty and increase equality among citizens.

Way Forward

- In post corona India, we need policy measures to alter the course of economic progress and reorient development programs for benefit of all stakeholders including the labor class.
- Freedom to participate meaningfully in the democratic process, free from discrimination based on caste, class, religion, and regional considerations along with equality of access to education, employment, nutrition, health, and a decent quality of life, all these are important for the success in poverty alleviation.
- It is necessary to raise slum residents' prospects for good jobs and upward mobility.

- Policy interventions that help reduce the ill effects of informality are necessary.

Conundrum of fake news

Syllabus: Population and Associated Issues, Poverty and Developmental issues, Urbanization, their problems and their remedies

In News: Recently, misinformation circulated on social media through mass-forwarding messages fuelled public fears around corona virus.

What is fake news?

- **Fake news** is defined as “information that is likely to be perceived as news, which has been deliberately fabricated and is disseminated with the intention to deceive others into believing falsehoods or doubting verifiable facts.”
- **Misinformation** is “false information that is spread, regardless of intent to mislead.”
- **Disinformation** means “false information, as about a country’s military strength or plans, disseminated by a government or intelligence agency in a hostile act of tactical political subversion.”
- **Eighty-six per cent of Internet users** have been duped by fake news, most of it spread on Facebook, according to a global survey conducted on behalf of the Centre for International Governance Innovation (CIGI).

India launches Whatsapp chat bot

- The Indian government has launched Whats App Chat bot to curb fake news being spread about COVID-19 virus.
- The WhatsApp chat bot, ‘MyGov Corona Helpdesk’, can be accessed by sending a text to +91 90131 51515.
- The chat bot is backed by verified data from the Ministry of Health, and is updated on a real-time basis.
- The chat bot has been developed for the government, free of cost by Jio Haptik.
- A Chat bot uses the technology of Artificial Intelligence. It is a computer program designed to simulate human conversations.

Causes of fake news culture:

- **No specific law:** Indian cyber laws have no direct provision governing rumours on social and electronic media.
 - There are statutory and self-regulatory bodies to act against dissemination of misinformation.
- **Tracing origin difficult:** It is difficult due to sheer vastness of the internet (over 35 crore users in India) and social media users (an estimated over 20 crore WhatsApp users alone) which makes tracing the origin almost impossible.
 - **Privacy vs Traceability:** The social media platforms express their inability to trace the origin of messages citing privacy of consumers.

- **Flaws of intermediaries:** There are many social media platforms which are identified as 'intermediaries' under the Information Technology (IT) Act, 2008 which have inherent flaws which could not identify fake news on its own.
- **Inadequate enforcement:** The enforcement of limited laws is not adequate.
 - Social media operators should take a more responsible role.
 - They need to be made to take more proactive steps and not wait for the law enforcement or judicial references to remove fake content off their platforms or block those senders.
- **Erosion of media ethics:** Media is viewed by many as a non-credible source of news due to alleged complicit and motivated reporting. Thus, many a times the media becomes the source of fake news.
- **Confirmation Bias:** It is a perception that involves advocating information that confirms previously existing beliefs or biases without a fact check.
 - People do not care about finding the 'truth' behind a news item and instead look for evidence to support their preferred narrative.
- **Abundance of information:** WHO acknowledges the rise of an 'infodemic' which is a phenomenon that leads to an over-abundance of "information in which all information is not right."

Impact of fake news:

- **Affects democracy:** Fake news provides people with erroneous information which leads to affecting consumer thinking as it leads to interfering in state functioning. For example, allegations on Facebook in US elections in 2016.
- **Political:** Fake news is a threat to democracy. Easy access to enormous amounts of data, made it possible for political parties to profile individual voters and flood them with news, fake and real, that influence their voting behaviour. Political parties try to get political benefits by polarising the voter's mind.
- **Economic:** Fake news has been used to deceive illiterate people financially. Example- Bitcoin benefits, Chit fund schemes introduced the concept of online fraud through spam emails.
 - Hoaxes of GPS (Global Positioning System) chips in the Rs 2,000 note after the demonetisation initiative of the government through both media and WhatsApp messages led to widespread confusion among holders of the new note.
- **Society:** Fake news can be used to create a communal environment. It influences the minds of common people and use social weaknesses to increase intolerance in the country.
 - Example: Spreading fake photos to bring about communal clashes in the country. It can also result in deaths. For example, rumours about child-lifters and cattle thieves led to mob attacks and deaths across India.
- **Security:** Media companies in greed of getting TRPs (Television Rating Point) and more viewership promote sensational news and false headlines.

- E.g. circulation of false videos in Kashmir valley showing shocking attacks on the Army and inhumane repression of the civilians.
- **International:** The false portrayal of Kashmir as a place of human right abuse by international media has created a false image of the nation.
- **People's faith:** Fake news has reduced people's belief in social, print, and electronic media. In its purest form, fake news is completely made up, manipulated to resemble credible journalism, and attract maximum attention and, with it, advertising revenue.

Legal Remedies available to tackle fake news:

- **Section 505(1) of Indian Penal Code, 1860:** The punishment for making, publishing, or circulating any statement, rumor or report which may cause fear or alarm to the public, or to any section of the public.
 - Punishment: Imprisonment which may extend to 3 years or fine or both.
- **Section 66D of Information Technology Act:** Whoever, by means for any communication device or computer resource cheats by personating.
 - Punishment: imprisonment of either description for a term which may extend to three years and shall also be liable to fine which may extend to one lakh rupees.
- **Section 54 of the Disaster Management Act, 2005:** Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic.
 - Punishment: Imprisonment which may extend to one year or with fine.
- **Complaints can be lodged with the News Broadcasters Association (NBA):** which represents the private television news and current affairs broadcasters. The NBA (News Broadcasters Association) is the credible voice of news broadcasters to the government. It is self-regulatory in nature and probes complaints against news broadcasters in a fair manner.
- **Indian Broadcast Foundation (IBF):** It was created in 1999 to investigate the complaints against contents aired by 24x7 channels. Complaints against any broadcaster can be filed in English or Hindi to IBF (Indian Broadcast Foundation) online or offline for promoting smoking, abuse, or any violent action.
- **Broadcasting Content Complaint Council (BCCC):** A complaint relating to objectionable TV content or fake news can be filed to the BCCC if a broadcaster incites communal hatred, encourages violence against women or child abuse, airs contents having gory scenes of violence, promotes superstition or consumption of drugs and other contraband substances.
- **The Press Council of India:** It is a statutory body. It receives complaints of violation of the journalistic ethics or professional misconduct by an editor or journalist.

Way Forward

- India must use provisions in the IT Act, Penal Code, and the Disaster Management Act to tackle misinformation and initiate an intense awareness campaign on false news and privacy violations.
- Following institutional measures could be established to tackle fake news:
 - **Cyber ombudsman:** Cyber ombudsman to deal with the credibility of news sources should be appointed to ensure right facts are reported.
 - **Create independent agency:** To verify the data being circulated in social and other media. The agency should be tasked with presenting real facts.
 - **Internal mechanism:** It should be mandatory for Print and Electronic media to have internal mechanism for verifying incidents, facts and figures.
- Tackling fake news requires a determined effort and coordination between multiple stakeholders such as governments, the media, fact-checkers, NGOs, and the civil society.
- Rebuttal is a form of fact-checking wherein the fake news is debunked by pointing out errors like mismatch, malicious editing, and misattribution.
- **Social media and technology companies should design dedicated policies.** Policies through which they take action against individuals/groups posting such content intended to cheat the public.
- **There is need for a centralised government portal** with a toll-free number where people can inquire about the messages and file complaints, like they do in the case of cybercrimes.

Global laws on Fake News: Different countries tackle the fake news differently.

- **European Union:** The Council of the European Union passed directives in 2019 to change copyright laws and hold online platforms responsible for infringements by its users. The law applies to social media, internet service providers and search engines.
- **Germany:** Germany's NetzDG applies to companies with more than two million registered users in the country. The law requires companies to review complaints about content and remove anything illegal within 24 hours. It puts heavy fines in case of failure to comply.
- **France:** It has two anti-fake news laws which allow candidates and political parties to seek court injunctions to prevent the publication of false information and give the French broadcasting authority to take any network spreading misinformation off the air.
- **China:** It blocks most social media sites and internet services like Twitter, Google and WhatsApp. It has thousands of cyber police personnel to monitor social media and screen the politically sensitive matter.

Bringing Women in Science

Syllabus: Role of Women and Women's Organization

In News: Rigorous efforts are required to make the workplace inclusive for women scientists in India.

The status of women scientists in India

- **The Department of Science and Technology** is making up a policy where the proportion of women employed will be considered in ranking a scientific institution.
- **National Task Force for Women in Science:** According to their data, Indian scientific institutions collectively employ only 15 per cent women even as women form 37 per cent of PhD holders and accounted for 40 per cent of university enrolment in science subjects in 2001.
- 12 years later the **Indian National Science Academy** had only 5 per cent elected women colleagues in their ranks.

Women in STEM:

- UNESCO data from 2014-16 shows that **only around 30% of female students select STEM (Science, Technology, Engineering and Mathematics)**-related fields in higher education.
- **Female enrolment** is particularly low in information technology (3%), natural science, mathematics, and statistics (5%) and engineering and allied streams (8%).
- According to the NITI Aayog report in 2015-16, 9.3% of female students in Undergraduate (UG) courses were enrolled in engineering, compared to 15.6% across genders. Conversely, 4.3% of female students were enrolled in medical science, compared to 3.3% across genders.
- Only 13.9% of women work as a researcher in India. At master's and doctoral levels, female enrolment remained lower than overall enrolment.
- The NITI Aayog report has also found that in over 620 institutes and universities, including IITs, NITs, ISRO, and DRDO, the presence of women was 20.0% among Scientific and Administrative Staff, 28.7% among Post-Doctoral Fellows, and 33.5% among PhD scholars.

The reasons for drop in number of women in science

- **Care work:** Juggling professional and domestic responsibilities are one of many reasons.
 - Acting as help at the home, caring for young children or ageing parents often makes the woman scientist focus less on publication of scientific papers.
 - Reports have suggested that women spend around five hours a day on unpaid care work compared to a mere half an hour for men.
- **Societal pressure:** The large drop in the number of women between the doctoral and professional stages appears to be in part due to social pressure on women to have a family which is seen as incompatible with a professional career.
- **Deep rooted patriarchy:** There are also patriarchal attitudes in hiring practices as well, with administrators deciding that women 'should' be opting for family over a career.

- **Inequality at Work:** According to the Centre for Monitoring Indian Economy (CMIE), a sizable percentage of all the jobs lost last year were held by women. Out of the 11 million jobs lost in 2018, women accounted for 8.8 million.
- **Wage issue:** Indian women receive 34% fewer wages than men for equivalent work and are primarily engaged in low-paying, informal sector work.

Changes to be done to rectify the inequalities during the initial stages of a scientific career:

- **Making creche facilities mandatory at workplaces:** The creche should be sustainable and affordable for all as it will provide employment opportunities to more women.
- **Safe travel:** Prioritising young families for on-campus housing by revamping the current seniority-based system and providing workplace transport facility.
- **Change in approach to conferences:** Supporting and rewarding organisers who ensure greater participation of women will ensure higher participation and present networking opportunities.
- **Childcare leaves to both parents:** The childcare leave, if extended to either parent, will prevent women from bearing the brunt of career setbacks.
- **Creating inclusive spaces:** The best research institutions create spaces for mixing and mingling, ironing out stereotypes and perceptions of being the “other” group.
- **Providing flexibility:** The flexibility to switch career paths and the opportunity to make a permanent move could prevent stagnation. It would create a much-needed change between academic institutes-government and private centres of learning, research institutes and even the industry.

Government Initiatives

- **Prime Minister Research Fellows (PMRF):** It is a public-private partnership (PPP) between Science & Engineering Research Board (SERB) and Confederation of Indian Industry (CII) which aims to improve the quality of research by attracting the best talents across the country and reduce brain drain.
- **Impactful Policy Research in Social Sciences (IMPRESS):** It aims to identify and fund research proposals in social sciences with maximum impact on the governance and society.
- **Scheme for Promotion of Academic and Research Collaboration (SPARC):** It aims to boost joint research with global universities from 28 countries and get international expertise to solve major national problems, train Indian students in the best laboratories, deepen academic engagement and improve the international ranking of Indian Institutes.
- **Impacting Research Innovation and Technology (IMPRINT):** It is a national initiative of Ministry of Human Resource Development (MHRD) which aims to address engineering challenges in 10 technology domains relevant to India through an inclusive and sustainable mode.
- **Atal Innovation Mission:** It is a flagship initiative set up by the NITI Aayog to promote innovation and entrepreneurship across the length and breadth of the country, based on

a detailed study and deliberations on innovation and entrepreneurial needs of India in the years ahead.

- **STARS Scheme (Scheme for Translational and Advanced Research in Science):** Under this, 500 science projects would be funded.
- **GATI Scheme:** The Gender Advancement for Transforming Institutions (GATI) will develop a comprehensive Charter and a framework for assessing Gender Equality in STEM.
- **Vigyan Jyoti Scheme:** Vigyan Jyoti Scheme is launched by the Department of Science & Technology (DST). It is intended to create a level-playing field for the meritorious girls in high school to pursue Science, Technology, Engineering, and Mathematics (STEM) in their higher education. It also offers exposure for girl students from the rural background to help to plan their journey from school to a job of their choice in the field of science.
- **KIRAN (Knowledge Involvement in Research Advancement through Nurturing) Scheme:** An umbrella of women specific programmes such as CURIE (Consolidation of University Research for Innovation and Excellence in Women Universities) to develop state-of-the-art infrastructure in women universities in order to attract, train and retain promising girls students in S&T domain.
- **Mobility Scheme:** It will address relocation issue (marriage, transfer of husband to any other location within the country, attending ailing parents, and accompanying children studying in different city) of women scientists working in regular position in Government Organizations.
- **Indo-U.S. Fellowship for Women in STEMM (Science, Technology, Engineering, Mathematics and Medicine):** It will provide opportunities to Indian Women Scientists, Engineers & Technologists to undertake international collaborative research in premier institutions in U.S.A, to enhance their research capacities and capabilities.
- **UDAAN:** launched by Ministry of Human Resource Development to address the lower enrolment ratio of girl students in science and engineering colleges. The aim of UDAAN is to enrich and enhance teaching and learning of Science and Mathematics at Senior Secondary level by providing free and online resources to every girl, with a focus on special incentives and support to 1000 selected disadvantaged girls per year.
- **Biotechnology Career Advancement and Re-orientation Programme (BioCARE):** An initiative of Department of Biotechnology, it mainly focuses on Career Development of employed/ unemployed women Scientists up to 55 years of age.

The purpose is to build capacities for women Scientists employed fulltime in Universities and small research laboratories or unemployed women Scientists' after a career break so as to help them undertake independent R&D projects.

Constraints faced by women

- **Social conditioning:**
 - The gender bias against women.
 - When it comes to peer recognition, women are at loss as they muster less support.
 - Women in high positions rarely groom other women.
- **Role of caregivers:**
 - Traditionally, women have donned the role of caregivers for centuries and this often gets reinforced through laws and institutions in our society. This leads to dual responsibilities.
 - This sets women back at the early stages of their careers.
 - Even in later stages, circumstances force women to seek early retirement.
- **Marginalization:**
 - Systemic gender discrimination and biased career review processes.
 - Women are marginalized even at faculty positions and in field of science and technology
- **Work environment:**
 - Lack of support for gender diversity in work environment.
 - For the same position and recognition, women have to work harder. It deters women from pursuing this field, causing a major leak at the post-doctoral level.

SPECIAL FOCUS: WOMEN AND POLITICS

Are women in India under represented?

- **Female representation in India:** The current government at the Centre is not far from the typical gender composition in Indian central and State governments. Female members make up only about 10% of the total ministerial strength.
 - The underrepresentation of female Ministers in India is also reflected in the fact that only one state (West Bengal) has a female Chief Minister.
- **The Economic survey for 2017-18** tabled in Parliament said factors such as domestic responsibilities, prevailing cultural attitudes regarding roles of women in society and lack of support from family were among main reasons that prevented them from entering politics.
 - **Other countries:** The survey said there are developing countries like Rwanda which has more than 60% women representatives in parliament in 2017.
 - Women's presence in parliament is highest in Nordic countries (42.5%), followed by America (22%), Europe (19.5%), Asia (18%), Sub-Saharan Africa (18%), the Pacific (15%) and lastly in Arab states (9.4%).

- **The underrepresentation of women in Indian legislatures:** The 2019 election sent the largest number of women to the Lok Sabha. Despite this, women constitute just over 14% of the total strength of the Lok Sabha.
- **India ranks 143 out of 192 countries** for which data are reported by the Inter-Parliamentary Union.

The status of women reservation bill in India

- The Bill was first presented to the Lok Sabha by the H.D. Deve Gowda government in 1996 and male members from several parties opposed the Bill on various grounds.
- Afterwards, various governments have reintroduced the Bill in successive Parliaments, but without any success.

The steps needed to reduce prejudice

- **One-third of party nominations for women:** This will surely result in increasing numbers of women in legislatures and subsequently in cabinets.
- **Increasing female representation in policy making:** This will go a long way in improving perceptions about female effectiveness in leadership roles.

Constitutional provisions for women in Political Participation:

The Constitution of India guaranteed justice-social, economic and political, liberty of thought, and equality to all citizens. Constitution provided for equality of women and called State to take measures to neutralize the socio-economic, educational and political disadvantage faced by women.

Article 14: It guarantees equality before law and equal protection of law within the territory of India.

Article 15: It prohibits discrimination on the basis of religion, race, caste, sex, place of birth. According to article 15(3), State can make special provisions for the benefit of women and children.

Article 16: Equality of opportunity for all citizens in matters relating to employment. No citizen can be denied employment on grounds of religion, race, caste, sex, descent, place of birth, residence or any of them.

Article 39: Article 39(a) provides for an adequate means of livelihood for all citizens. Article 39 (b) has provisions for equal pay for equal work for both men and women. Article 39 (c) has provisions for securing the health and strength of workers, men and women, and not to abuse the tender age of children.

Article 42: It guarantees just and humane conditions of work and maternity relief. Article 42 is in accordance with Article 23 and 25 of Universal Declaration of Human Rights.

Article 325 and 326: They guarantee political equality, equal right to participate in political activity and right to vote, respectively.

Article 243 (D): It provides for the political reservation to women in every panchayat elections. It has extended this reservation to elected office as well.

The way forward

- **The new policy must be sensitive to ground level realities.** Committees and organisations must be sensitised and implementation ensured through periodic evaluations of outcomes.
- Making the data regarding publicly funded projects widely available will allow analysis of factors beyond equality in numbers.
- **The goal should be ensuring equality without compromising quality of research.**
- **Women's leadership and communication skills** need to be enhanced by increasing female literacy especially in rural areas. They should be empowered to break socio-cultural barriers and improve their status in the society.
- **In the political sphere, dual member constituencies** may be considered, where some constituencies shall have two candidates, one being a woman.

GENERAL STUDIES-2**State of Indian Institutions**

Syllabus: Separation of Powers between various organs Dispute Redressal Mechanisms and Institutions.

In News: Recent actions of NCPCR suggest a serious parting from its primary duty to ensure the well-being of all children.

Role of institutions in democracy:

- **Social and economic progress:** The legislature, the army, the judiciary, and the media are important structures of the nation. The first sets the rules, the second defends the state, the third determines what is right and what is wrong, and the fourth blows the whistle when things go wrong.
- **Increase democratic participation:** for example, Panchayati Raj Institutions increase cooperation among people, democratic participation, and decentralization.
- **For efficient planning:** for example, The NITI Aayog is a policy think tank of the Government of India, established with the aim to achieve sustainable development goals with cooperative federalism using a bottom-up approach.
- **To ensure good governance:** The basic objective of the Right to Information Act 2005 (RTI Act) is to empower the citizens, to seek information from Public Authorities. Thereby it promotes transparency and accountability in the working of the Government, and makes Indian democracy work for the people in real sense.
- **To Represent people:** Institutions are not made only of bricks and mortar. They become meaningful if they represent the collective will of the people, drawn from values that underpin the idea of that nation. For example, Parliament.
- **To eradicate corruption:** The Directorate General of Income Tax Investigation, Central Vigilance Commission and Central Bureau of Investigation all deal with anti-corruption initiatives.

- **Ensuring accountability:** for example, Lokpal and Lokayuktas aims to prevent and control corruption at the central level and state level that would receive complaints relating to corruption against most categories of public servants and ensure that these are properly investigated and, where warranted, effectively prosecuted.

Issues in today's institutions:

- **Lack of integrity:** Institutions are strengthened or weakened depending on how the individuals temporarily in charge of the institutions acts. Lack of integrity in an official, therefore renders the institution dysfunctional.
- **Political interference:** Involvement of vested political interests in the functioning of the institutions compromises the mandate of institutions.
 - For instance, increase in post-retirement appointments for judges to government positions acts as a powerful incentive for them to decide cases in favour of the State.
- **No performance linkage:** The issue of ensuring public accountability is further more complex as there has been no emphasis on linking performance management with public accountability.
- **Delays:** More than 2.2 lakh RTI cases are pending at the Central and State Information Commissions, which are the final courts of appeal under the RTI law.
- **Decline of Representative Democracy:** As per Anti-defection law, the legislators have to vote as per party whip. Due to this, legislators are compelled to vote on party lines irrespective of their local or regional interest.
 - Further, India has first past the post electoral system, which means that candidates winning the highest number of votes gets elected. This leads to neglect of representation of voters who voted for another candidate.
- **Excessive Bureaucratisation:** Public sector industries in India are plagued with inefficiencies due to excessive bureaucratisation.
 - Their chairman-cum-managing directors are bureaucrats who may not have domain knowledge or technical service people bereft of business acumen.
 - For example, oil PSEs have been allowed to make a profit as they can dictate oil pricing, this allows them to have profits but there have been no innovations in the oil marketing sector.
- **Vacancy:** Vacancies in the higher judiciary threaten every aspect of the justice delivery system and it is the courts, and the government, that always take the blame for any shortfall in justice.
- **Rampant politicization of the bureaucracy:** Frequent transfers, arbitrary promotions and appointments made by political bosses are the norm in the bureaucracy today.
- **Lack of capacity:** In spite of growing population, the absolute size of the elite Indian Administrative Service (IAS) dropped by 10%; by 2010, the total strength of the IAS and the Indian Police Service (IPS) was less than 11,000 while the vacancy rate stood at 28%.

Performances of various institutions:

- **Election Commission of India:** ECI conducts free and fair elections for the largest democracy of the world. For example, elections in Bihar during pandemic.
- **Central Armed Police Forces (CAPF):** When disaster strikes our country in any manner, be it natural or man-made, the government summons the Central Armed Police Forces (CAPFs) to carry out the task of overcoming the disaster, by not only carrying out rescue and relief operations, but also mitigating the pains and problems arising out of the disaster.
- **National Highway authority of India (NHAI):** NHAI has accomplished construction of 3,979 km of national highways in the financial Year 2019-20. This is the highest ever highway construction achieved in a financial year by NHAI.
- **Unique Identification Authority of India (UIDAI):** The Aadhaar, which was introduced in 2009, has crossed a new milestone achieved by crossing of the 125-crore mark. "This means that over 1.25 billion residents of India have the 12-digit unique identity.
- **ISRO:** The Indian Space Research Organization (ISRO) is one of the largest and most successful space agencies in the world. For example, It has successfully launched Chandrayaan-2 and tested a critical technology for human spaceflight.

Institutions in News

NCPCR

- The Supreme Court has sought a response from the National Commission for Protection of Child Rights (NCPCR), to its request to eight States for immediate repatriation of children living in care homes with their families.
- The court is suo motu monitoring the condition and welfare of children placed in care homes across the country during the pandemic.
- As per amicus curiae, the NCPCR direction violated the Juvenile Justice Act of 2015 since the pandemic would make a child more vulnerable to domestic abuse.
- The National Commission for Protection of Child Rights (NCPCR) is the top body for upholding, monitoring and facilitating child rights in the country.

Directions by NCPCR: The NCPCR directed District Magistrates in eight States to ensure that all children within CCIs be de-institutionalised, repatriated and rehabilitated within a specified period.

Emerging issues:

- An instructed repatriation without an adequate case-by-case assessment plan within a short period of time would likely place the children again at grave risk of abuse, exploitation and neglect.
- **Selective Raids:** Disturbing report of raids being undertaken by the NCPCR in select NGO-run CCIs, in order to establish whether foreign funds have been misused in any manner.
- Monitoring of the FCRA regulations is outside of the mandate of the NCPCR.
- **Communal overtones:** An enquiry led by the Chairperson enquired into whether the previously homeless children in the CCIs belonged to a particular community (Rohingya), even as the institutions are known to be secular.
- **Increase in problems due to pandemic:** Existing issues of child malnutrition, child labour, child abuse, child marriage and mental illness have increased.

CAG: In its audit report on the accounts of the Union Government, the Comptroller and Auditor General of India (CAG) has pointed out grave lapses in the accounting of revenue from the GST compensation cess.

Key findings of the CAG report related to cess:

- Retained in the Consolidated Fund of India - The GST Compensation Cess with ₹47,272 crore, was not remitted to its rightful account over the first two years of GST.
- Union Finance Ministry quietly retained over 40% of all cess collections in 2018-19 in the Consolidated Fund of India (CFI).
- **Short transfer to the Public Account** - As many as 35 different cesses, levies and charges yielded ₹2.75-lakh crore in the year, but just around ₹1.64-lakh crore was remitted to the specific reserve funds for which these cesses were levied.
- **Crude Oil Cess** - Over 10 years, not a single penny of the ₹1.25-lakh crore of cess collected on crude oil was transferred to an oil industry development body it was meant to finance.
- **Central Road and Infrastructure Fund** - Part of the hefty cess collected as additional excise duties on petrol and diesel, to finance roads and infrastructure, was similarly retained in the CFI.
- **A new 4% Health and Education Cess on income tax** was partly deployed towards education, but no fund was created for health. Same with a Social Welfare surcharge levied on customs.

- **National Human Rights Commission (NHRC):** NHRC disposed of more than 17 lakh cases, and paid more than Rs 1 billion to victims of human rights violations, carried out over 750 spot enquiries of human rights violations, apart from conducting over 200 conferences to spread awareness of human rights across the country.

Way forward:

- **Ensure autonomy:** provide greater autonomy to remaining public enterprises through the strengthening of the Memorandum of Understanding (MOU) system and by providing greater professional expertise in the boards of these enterprises.
- **Social audit:** It is an accountability tool that measures, evaluates, identifies gaps in service delivery.
- **Public accountability:** the need for the institutions of the state to be accountable for its actions stems out of a social contract that citizen's share with the state
- **Maintain institutional checks and balances** and internal oversight.
- **Public awareness:** citizens must be able to draw on external accountability mechanisms to express their preferences and hold the state politicians and senior levels of the administrative bureaucracy accountable.
- **Independent media:** The fourth wing of the democracy can then serve as an important and impartial check on the powers of the legislature, executive and the judiciary.

India's formal institutions are important for the well-being of its democracy and they should be more substantive in essence than procedural.

Addressing India's Nutritional Challenges

Syllabus: Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

In News: Innovative ideas by working together, learning, and contributing together are needed to fight Covid-19 and transform the agri-food system.

State of food system in India

- **Definition of food system:** It is a framework that includes every aspect of feeding and nourishing people: from growing, harvesting, and processing to packaging, transporting, marketing and consuming food.
- **Food insecurity:** As per State of Food Security and Nutrition in the World (SOFI) report, prevalence of food insecurity increased by 3.8 percentage points in India between 2014 and 2019.
 - By 2019, 6.2 crore more people were living with food insecurity than the number in 2014.
- **Role of food system:** A food system must supply enough nutritious food for all without compromising feeding future generations and would be called sustainable food system.
- **Public distribution system:** Central and State governments were able to distribute around 23 million tonnes from India's large domestic food grain reserves in three months of the pandemic through the Public Distribution System. It helped in supplying much-needed emergency assistance to families around the country.

- **The government successfully mobilised food rations for 820 million people from April to November 2020**, including finding alternate solutions to supply food rations to 90 million school children.
- **Pradhan mantri Garib kalyan yojna:** The scheme provides an opportunity to declare unaccounted wealth and black money in a confidential manner and avoid prosecution after paying a fine of 50% on the undisclosed income.
 - An additional 25% of the undisclosed income is invested in the scheme which can be refunded after four years, without any interest.
- **Agriculture grew at 3.4% during the first quarter this fiscal year** and the area cultivated this *kharif* exceeded 110 million hectares.

What are the issues faced by India?

- **Nutrition issues:** The Comprehensive National Nutrition Survey 2016-18 revealed that over 40 million children are chronically malnourished, and more than half of Indian women aged 15-49 years are anaemic.
 - In the 2020 Global Hunger Index, India ranks 94th out of the 107 countries with sufficient data to calculate 2020 GHI scores. With a score of 27.2, India has a level of hunger that is serious.
- **Inequality:** There are high rates of stunting among children in the poorest wealth quintile, like Scheduled Tribes (43.6%) and Scheduled Castes (42.5%), and children born to mothers with no education (51%).
- **Lack of availability of data:** India has not released the latest National Sample Survey Office (NSSO) consumption expenditure survey data for 2017-18.
 - While the per capita dietary energy supply in India increased by 3.8% between 2011-13 and 2015-17, the consumption survey data that became available through a media leak showed that the average consumption expenditure (covering food and other expenses) fell by 3.7% between 2011-12 and 2017-18.
- **Climate change:** Climate change continues to be a real and potent threat to agro-biodiversity, which will impact everything from productivity to livelihoods across food and farm systems.
- **Intensified food production systems with excessive use of chemicals:** Unsustainable farming practices cause soil degradation, fast depletion of groundwater table and rapid loss of agro-biodiversity.
- **In India, more than 86% farmers have less than two hectares of land** contributing around 60% of the total food grain production and over half the country's fruits and vegetables.

Three pillars of food security:

- **Availability:** Food availability relates to the supply of food through production, distribution, and exchange.

- Food production is determined by a variety of factors including land ownership and use; soil management; crop selection, breeding, and management; livestock breeding and management; and harvesting.
- **Accessibility:** Food access refers to the affordability and allocation of food, as well as catering to the preferences of individuals and households.
- **Utilisation:** It refers to the metabolism of food by individuals. Once food is obtained by a household, a variety of factors affect the quantity and quality of food that reaches members of the household.

FOCUS: National Food Security Act, 2013:

- National Food Security Act, 2013 (NFSA) is the landmark law came in the wake of fighting the hunger and malnutrition in affordable price and to live with dignity.
- The National Food Security Act, 2013 is an act of the Parliament which aims to provide subsidized food grains to approximately two third of India's 1.2 billion people.
- The Act was signed into law on 12 September 2013, retroactive to 5 July 2013.

Key features of the National Food Security Act:

- Under the provision of the bill, beneficiaries of the Public Distribution System are entitled to 5 kg per person per month of cereals at **Rs 3, 2, and 1 for Rice, wheat and coarse grains respectively.**
- Coverage and entitlement under **Targeted Public Distribution System (TPDS)** : Upto 75% of the rural population and 50% of the urban population will be covered under TPDS.
- **Nutritional Support to women and children:** Pregnant women and lactating mothers and children in the age group of 6 months to 14 years will be entitled to meals as per prescribed nutritional norms under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes. Higher nutritional norms have been prescribed for malnourished children upto 6 years of age.
- **Maternity Benefit:** Pregnant women and lactating mothers will also be entitled to receive maternity benefit of not less than Rs. 6,000.
- **Women Empowerment:** Eldest woman of the household of age 18 years or above to be the head of the household for the purpose of issuing of ration cards.
- **Grievance Redressal Mechanism:** Grievance redressal mechanism at the District and State levels.
- **Transparency and Accountability:** Provisions have been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees in order to ensure transparency and accountability.
- **Food Security Allowance:** Provision for food security allowance to entitled beneficiaries in case of non-supply of entitled food grains or meals.
- **Penalty:** Provision for penalty on public servant or authority, to be imposed by the State Food Commission, in case of failure to comply with the relief recommended by the District Grievance Redressal Officer

Major Concerns of Indian food system:**1. Distortion of agricultural patterns**

- a. Small farmers who grow grains for personal consumption may shift to other crops to make more money and buy subsidised grain. This can affect food grain output.

2. India could become massively dependent on imports

- a. India's commodity imports tend to move global prices. Should India be forced to buy grain from international market because of the food security law, it would have to pay heavy prices.

3. One-third population may have to pay steep prices

- a. The government will need to procure food grains in massive quantities to meet the demands of the law. This would require sharp increase in minimum support prices to incentivise farmers. As a result, there could be lower supply in open market.

4. Food subsidy bill will rise sharply

- a. The cost at which the Food Ministry will make additional grain available is an issue to be considered. A wide coverage and throwaway issue price for food grains under the scheme will increase food subsidy sharply.
- b. It may squeeze out private traders from the grain market, giving state agencies such as the Food Corporation of India total dominance in the trade.
- c. It may put a huge subsidy burden on the government, which can derail the fiscal situation.

5. Overall inflation will rise

- a. If a major rice-consuming State such as Tamil Nadu enters the open market, looking to obtain rice in huge quantities, the price of the commodity will naturally increase.
- b. Higher MSP (Minimum Support Price) for cereals and demand for other food items because of lower household spending on cereals will push up food inflation and the overall inflation.

6. Overall corruption and malpractices may rise

- a. There may be many leakages and malpractices.
- b. Irregular supply of ration is a bigger issue than getting ration at subsidised rates. The accessibility and quantity of wheat or rice made available to the poor is always at the discretion of the ration shopkeeper. The government must take steps to curb hoarding of food grains.
- c. Responsibility and accountability should be enforced, without any leniency of any type.

Ways to increase resilience across our food systems

- **New channels:** There is a need to find innovative marketing channels (like e-commerce) and increase efficiency to reduce losses.

- **Improving quality:** Improving the quality of products available and storage facilities, which are critical to flows of healthy foods and income to those who produce them.
- **Access to finance and innovations:** Inclusive access to finance to strengthen and expand rural supply chains is also crucial. Small land holders need access to financial resources, technology, and innovation to ensure that the produced food reaches from farm to fork.
- **FAO's initiative:** The Food and Agriculture Organisation of the United Nations has recently launched a new comprehensive COVID-19 Response and Recovery Programme to provide an active and coordinated global response.
- It is aimed at ensuring access to nutritious food for everyone by mobilising all forms of resources and partnerships at the country, regional and global level.

What are the steps taken to counter the challenges?

- **The FAO, IFAD (International Fund for Agricultural Development) and the WFP (World Food Programme) worked in close coordination to support the Government of India's Empowered Group** to facilitate supply chain and logistics management, so necessary items such as food and medicines were available.
 - The agencies provided daily updates on the real-time situation on the ground, checking challenges/red flags, dynamic subjective data and good practices from their sources in the field.
- **The Integrated Child Development Services** provides cooked meals and take-home rations to 100 million children under the age of six, as well as to pregnant and lactating mothers.
- **The mid-day meal programme** in schools take care of the nutritional requirement of the school going children.
- **India is dealing innovatively with climate change.**
 - For example, through the development of drought and flood tolerant seed varieties, weather-based agricultural advisories, promotion of millets, and small-scale irrigation.
- **POSHAN abhiyan:** It is India's flagship programme to improve nutritional outcomes for children, pregnant women, and lactating mothers.
- **Innovative Strategies adopted by different states:**
 - **Uttar Pradesh:** The state introduced an Information, Education and Communication (IEC) activity. Under it, officials installed a wall art with messages of nutrition, early care for the mother and the child and WASH, in crowded public areas such as railway stations.
 - **Uttarakhand:** The state introduced an initiative under which one can adopt a Severe Acute Malnutrition (SAM) Child.
 - **Odisha:** The state institutionalized community-level monitoring of services under ICDS by introducing Jaanch Committee & Mothers Committee at the village level.

- **International Best Practice:**

- **Brazil– Fome Zero (Zero hunger) strategy:** Brazil had started the Zero Hunger strategy in 2003 Under this strategy various initiatives such as food banks, cash transfer to poor families, national school feeding program etc. have been taken.
- **Recent initiative of biofortification:** An agriculture-based approach to the development and dissemination of micronutrient-rich crops, offers a viable option to mitigate malnutrition and hidden hunger.

Way forward

- **Converging Nutrition and Health:**

- There should be integration of nutrition services with health service delivery. Innovative approach like SNEHA (Synergistic Nutrition Education and Health Action) could be adopted.
- It is important to include nutrition-related health products like therapeutic foods and innovative technological solutions like digital nutrition counselling especially to harder-to-reach communities.

- **Adequate Investment to improve nutrition outcomes:** There should be an increase in domestic financing to respond to the needs of communities most affected by malnutrition.

- **Addressing Overnutrition:**

- Innovative policy interventions like 'Fat Tax' (Kerala) can be deliberated upon to reduce intake of high calorie drinks and foods.
- Consumer awareness regarding consequences of unhealthy diet practices must be made more visible through effective mobilization of communities, celebrities, media and NGO's.

- **Improving access to water and sanitation facilities:** Access to sanitation and hygiene including menstrual hygiene should be strengthened.

Everybody has a role to play in transforming our food systems so they can withstand increasing volatility and climate shocks, deliver affordable and sustainable healthy diets for all, and provide decent livelihoods for food chain workers.

Swamitva scheme

Syllabus: Devolution of Powers and Finances up to Local Levels and Challenges Therein

In News: Recently PM on Panchayati Raj Day (April 24) has launched the physical distribution of property Cards under the SVAMITVA Scheme.

About SVAMITVA Scheme:

Aims of scheme:

- The acronym SVAMITVA stands for Survey of Villages and Mapping with Improved Technology in Village Areas.
- It is a Central Sector Scheme aimed at “providing ‘record of rights’ to village household owners possessing houses in inhabited rural areas in villages and issuance of property cards to the property owners.”

- The scheme aim is to cover all 6.62 lakh villages in the country by the end of fiscal year 2023-24.

The scheme seeks to achieve the following objectives: -

- To bring financial stability to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
- Creation of accurate land records for rural planning.
- Determination of property tax, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.
- Creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.
- To support in preparation of better-quality Gram Panchayat Development Plan (GPDP) by making use of GIS maps.
- To reduce property related disputes and legal cases.

Panchayati Raj day

24th April, 1993 marks a defining moment in the history of decentralization of power to the grassroots, with the institutionalization of Panchayati Raj, through the Constitution (73rd Amendment) Act, 1992 which came into force with effect from that day.

Ministry of Panchayati Raj commemorates 24th April of every year as the National Panchayati Raj Day as the 73rd Constitutional Amendment came into force on this date.

Salient features of the scheme:

- The mapping will be done across the country in a phase-wise manner over a period of four years - from 2020 to 2024.
- The mapping and survey will be conducted in collaboration with the Survey of India, State Revenue Department and State Panchayati Raj Department under the Ministry of Panchayati Raj.
- The drones will draw the digital map of every property falling in the geographical limit of each Indian village.
- Property Cards will be prepared and given to the respective owners.
- The Panchayati Raj Ministry's scheme aims at a pan-India cadastral survey facilitated by drones, followed by the issuance of property cards to those living in abadi areas (inhabited rural land).

Performance of the scheme:

- The scheme is being implemented as a pilot project in about 1 lakh villages across 8 states – Maharashtra, Karnataka, Haryana, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Punjab and Rajasthan.
- With the launch, around one lakh property holders downloaded their property cards through the SMS link delivered on their mobile phones.
- Till now drone survey and chunna marking are completed in 114158 villages and property card have been released for the same.

Significance of the scheme:

- The land records would help people to **leverage property as an asset** to avail loans and also aid in the overall rural planning processes.
- It will help in **determination of property tax**, which would accrue to the Gram Panchayats directly in states where they are empowered to collect such taxes.
- The cards will help **increase liquidity of land parcels** in the market and increase the financial credit availability to the village.
- The scheme will also pave the way for **creation of accurate land records** for rural planning. All the property records and maps will be available at Gram Panchayat, which will help in taxation of villages, construction permits, elimination of encroachments, etc.
- It will enable the government to effectively plan for the infrastructural programs in villages.
- The scheme will **help in streamlining planning and revenue collection** in rural areas and ensuring clarity on property rights.
- The scheme will **enable creation of better-quality Gram Panchayat Development Plans (GPDPs)**, using the maps created under this programme.
- Proper property records lead to confidence among owners and opens up new avenues for investment.

Way ahead:

- **Protect the most vulnerable people:** Land often has deep roots in social power structures, including caste and gender biases. Dalits, women, tenant farmers and tribal communities are often excluded from accessing land, even though they may legitimately have a claim. It would be important to build safeguards in the implementation process to ensure legitimate claims of the most vulnerable people are not crowded out by louder, or powerful voices.
- **Public awareness:** Awareness drives to familiarize people with digital land records, how to interpret and access them, also need to be built into the program to avoid information asymmetry and ensure access across user groups.
- **Establish a grievance redressal system:** it needs to effectively address people's concerns in a transparent and fair manner that will aid in smooth implementation of the program. For example, Odisha's Kalia and Mo Sarkaar programmes.
- **Engage the community from the start:** Land and boundaries can be a charged topic which discourages any policy reform. However, by involving the community, it is possible to create greater acceptance of the process and reduce potential for disputes.

Though Swamitva scheme is a step forward towards establishing clear land ownership in the country, however, the policies focusing on land reforms must aim at conclusive titles to address the ground challenges.

Policy Focus: Agenda of Cleaning Ganga

Syllabus: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Introduction: Namami Gange programme is an integrated mission for conservation of Ganga and its tributaries. It is implemented by National Mission for Clean Ganga.

Status and Causes of Pollution in River

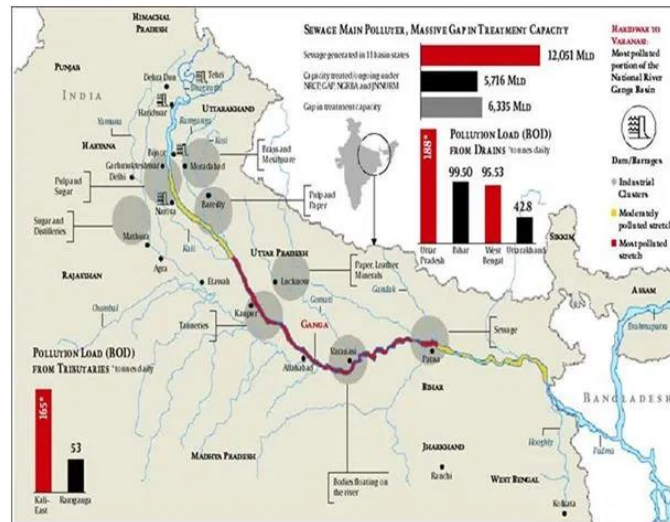
Ganga:

Status:

- Approximately 12,000 million litres a day (MLD) of sewage is generated in the Ganga basin, for which there is currently a treatment capacity of just 4,000 MLD.
- Uttar Pradesh has the highest pollution load followed by Bihar, West Bengal and Uttarakhand.

Causes:

- Urban Sewage:** Untreated sewage from Tier I and Tier II towns like Kanpur, Allahabad, and Varanasi flow directly to the river.
- Rural Sewage:** About 1,650 gram panchayats lie directly on the banks of the Ganga. The sewage they generate is entirely untreated. Open defecation is also rampant.
- Polluting Industries:** There are 764 grossly polluting industries on the banks of the Ganga, mostly in Uttar Pradesh. These include tanneries, paper and pulp industries, sugar mills, dyeing factories, distilleries, and cement plants. Effluents from all these flows untreated into the river.
- Pollution due to irrigation/agricultural waste:** Excess use of pesticides, fertilizers, chemicals increases the pollution in agriculture waste and subsequently increases the pollution in river water
- Religious Issues:**
 - Due to the religious reasons, dead bodies are cremated on the river bank especially in Varanasi, Garhmukteshwar & Haridwar, and the ashes and remains are dumped in the river. It is a huge source of pollution in the river
 - While worshipping the Ganges, flowers and other material used for worship should not throw in the Ganges.
- Human habits:** An analysis of the Ganges water in 2006 showed significant associations between water-borne/enteric disease occurrence and the use of the river for bathing, laundry, washing, eating, cleaning utensils, and brushing teeth.



Vision of Namami Ganga Programme

The vision is to restore the wholesomeness of the river by ensuring Aviral and Nirmal Dhara, and maintaining its geo-hydrological and ecological integrity. It is sought to be implemented by **Integrated River Basin Management (IRBM) approach**.

Approach

Integrated River Basin Management (IRBM) approach is followed with multi-sectoral and multiagency interventions such as:

- **Nirmal Ganga:** Pollution abatement,
- **Aviral Ganga:** Improving ecology and flow,
- **Jan Ganga:** Strengthen people-river connect and
- **Gyan Ganga:** Facilitate diversified research, scientific mapping, studies, and evidence-based policy formulation.

1. NIRMAL GANGA: Pollution Abatement

- a. **Wastewater treatment:** Wastewater is one of the most underexploited resources. It is a valuable resource from which energy, water, Organics phosphates, nitrogen, and other resources can be extracted.
- b. **Faecal Sludge Management:** Faecal sludge and Septage treatment is good option in developing a mix of solutions with centralized and decentralized STPs.
- c. **Industrial Pollution:** To control the industrial pollution in Ganga, all the grossly polluting industries were identified and annual inspection were undertaken by independent expert institutions.
- d. **Solid Waste Management:** The mission has directed its focus on solid waste on ghats and in vicinity of the river with regular cleaning of river banks, installing screens/filter to trap solid waste, ban on single-use plastics and periodical third-party inspections.
- e. **Sewerage Infrastructure:** The goal of achieving Nirmal Dhara is impossible without building sufficient infrastructure to prevent untreated waste water entering the river.
- f. **Achievements:**
 - i. More than 80 major drains falling into Ganga have been **intercepted and diverted to STPs** - new and old.
 - ii. NMCG is actively pursuing the development of a **model policy framework for re-use of treated waste water**.
 - iii. In Mathura, 29 MLD **treated waste water** has been tied up for use in Mathura refinery.
 - iv. The **circular economy principles** can help turning sanitation a sustainable option.
 - v. **Common Effluent Treatment Plants** has been established.

- vi. **Industry specific charters** were developed to promote greener technology, reduce effluent generation, and reuse/recycle which led to improvement in several industries.
- vii. NMCG facilitated construction of around 11 lakh household toilets in 4465 identified **Ganga bank villages**.
- viii. Central Pollution Control Board **monitors water quality** of River Ganga through 97 manual stations. The important parameter of Dissolved Oxygen (DO) to be more than 5 mg/litre is now met throughout the river length. There is **improvement in meeting Biological Oxygen demand (BOD)** to be less than 3mg/litre at several stations.

2. AVIRAL GANGA: Ecology and Flow

- a. **Afforestation**- Planting trees is essential for groundwater recharge and maintaining the health of ecosystem.
- b. **Sustainable Agriculture**: NMCG promotes this through organic farming, eco agriculture and medicinal plantation.
- c. **Small river rejuvenation**
- d. **Wetland Conservation**- Mission is working for their protection and conservation and integrating to basin level.
 - i. Wetlands are important for Nirmalta, Aviralta and for economy, ecotourism, ground water recharge and supporting biodiversity.
- e. **Achievements**:
 - i. For the first time, **ecological flow** was notified for River Ganga in October 2018, formally establishing the right of river over its own water.
 - ii. For the first time, mission got a **scientific plan for afforestation** along entire length of Ganga developed by Forest Research Institute.
 - iii. A comprehensive project is under implementation with Wildlife Institute of India to **map biodiversity hotspot** for the entire length of Ganga and scientific improvement of habitat, species.
 - iv. NMCG (National Mission for Clean Ganga) spearheaded campaign for conservation of Gangetic Dolphin, the National Aquatic Animal leading to announcement of **Project Dolphin**.
 - v. **Organic farming corridor** along Ganga has been proposed.
 - vi. **Development of herbal corridor** along Ganga is also being considered.
 - vii. A GIS (Geographic Information System) based district wise **inventory of small rivers** is being created along with district level interventions with convergence with MGNREGA. Small rivers rejuvenation is key to Aviral and Nirmal Ganga.

3. JAN GANGA: People river connect

The people river connect needs to be established so that they feel the need to join these efforts.

Achievements:

- i. **Ghat and Crematoria:** Ghats and Crematoria have already been constructed with River Front development, making them important public space.
- ii. **Jan Bhagidari:** Community and stakeholder groups have been developed such as Ganga Vichar Manch, Ganga Praharis etc.
- iii. **Ganga Amantran Abhiyan:** This was largest social outreach program through adventure sports connecting people from Deoprayag to Ganga Sagar last year through 35-daylong rafting expedition.
- iv. NMCG regularly conducts several activities to **connect youth and others such as 'Great Ganga Run.'**
- v. **Ganga Quest:** During lockdown, an innovative online national quiz was conducted on Ganga to connect school/college students
- vi. **Clean Ganga Fund** is another innovative step to create an avenue for people and corporates to donate and take up specific projects.

4. GYAN GANGA: Research, Policy and Knowledge Management

- a. Mission has given priority to evidence-based policy decisions and to get authentic data and information backed by scientific research.
- b. **Achievements:**
 - i. **LIDAR (Light Detection and Ranging) Mapping:** It will provide data on drainage, flood plains etc. This will enable better project formulation, monitoring, regulation, and conservation.
 - ii. **Microbial Diversity Mapping:** to understand the Special Property of Ganga River and impact of human intervention on microbial diversity.
 - iii. **Cultural mapping** of entire length of Ganga for natural, built, and intangible heritage, has the potential for protection of rich heritage and development of tourism and traditional livelihood opportunities.
 - iv. **Arth Ganga:** Namami Gange is now leading to the development of Arth Ganga model linking economic development of Ganga Basin with ecological improvement and Ganga Rejuvenation.
 - v. **Spring Rejuvenation:** Namami Gange is leading spring rejuvenation projects to assess the impact of land use-land cover change or impact of precipitation variability and mapping of sources of springs for taking up their rejuvenation.

Issues with Namami Gange Programme:

- **Unused funds:** According to CAG (Comptroller and Auditor General) report the Government had only used \$260 million of the \$1.05 billion earmarked for the flagship programme between April 2015 and March 2017
- **Pollution has rarely been an electoral issue:** Elected leaders have few incentives to take on either the big polluters (which include the government's own companies and power stations) or the small-scale firms in industrial clusters that serve as vote-banks.

- **Absent water:** There is the diminished flow of water in India's rivers. Along the Ganga, for example, so much water is diverted for irrigation and hydro-power that the flow of the river is reduced to a trickle, particularly in the hot summer months.
- **Lack of civil society or citizen participation:** The CAG report highlights that there is almost no mention of civil society or citizen participation, particularly for monitoring and sustainability of the operations
- **Hydroelectric projects:** According to a report published by Wildlife Institute of India in May 2018, 16 existing, 14 ongoing and 14 proposed hydroelectric projects on the Bhagirathi and Alaknanda river basins have turned the upper stretch of the Ganga "ecological deserts".
- **Sludge control:**
 - A staggering 99.93 per cent villages lying on the banks of Ganga, also known as Ganga Grams, have been declared open defecation free (ODF) by the government under the Swachh Bharat Mission (SBM).
 - However, the CAG report said the state government was to verify the ODF status through its own teams or through a third party. Moreover, more than 1000 villages of UP and Bihar did not get it done.
- **Sewage treatment:** Sewage treatment plants (STPs) have been at the centre of Ganga pollution abatement but the implementation of projects is way behind the targets.
 - As per Namami Gange targets, STPs with over 2,000 million litres a day (MLD) capacity had to be rehabilitated of which only 328 MLD have been done.
 - As far as sewage infrastructure projects are concerned, 68 projects were sanctioned after the Namami Gange was approved by the cabinet and only six were completed.
 - Reasons cited:
 - land acquisition and other related activities,
 - Biological oxygen demand (BOD) and Total Suspended Solids (TSS) levels of the effluent is higher than the norms because industrial waste and chemicals are illegally mixed with the influents in a plant not meant to treat industrial pollutants.
 - STPs are not able to get the total amount of influents, primarily due to lack of sewerage network in the city.

Conclusion

The nature has capacity to rejuvenate itself if human interventions are controlled and the same was witnessed during the national lockdown period. People's participation is key to transformation.

Ganga Rejuvenation is critical for implementation of 2030 agenda of SDGs. Namami Gange has developed a framework for river rejuvenation which is now being followed for several rivers beyond Ganga basin

Indian PSUs

Syllabus: Indian Economy and issues relating to planning, mobilization, of resources, growth, development, and employment.

In News- To decentralize decision-making and facilitate more informed investment decisions, the Centre has restructured the board of Steel Authority of India (SAIL).

The public sector

- Public Sector Undertakings are a major part of the Indian economy that comprises public services and enterprises and it provides services that benefit the entire society.
- The rationale behind the establishment of PSU's was Industrialisation and the establishment of Capital Goods Industries and Basic Industries.
- The organizations that are not a part of the public sector are termed as private sector that works to raise profit for the organization

The public sector can be classified into:-

1. **Departmental Undertaking** – Directly managed by concerned ministry or department. (e.g. Railways, Posts, etc.)
2. **Non-Departmental Undertaking** – PSU (e.g. HPCL, IOCL, etc.)
3. **Financial Institution** (e.g. SBI, UTI, LIC, etc.)

Objectives of Setting up Public Sector Unit (PSU)

- To create an industrial base in the country
- To generate a better quality of employment
- To develop basic infrastructure in the country
- To provide resources to the government
- To promote exports and reduce imports
- To reduce inequalities and accelerate the economic growth and development of a country.

CPSEs: Central public sector enterprises (CPSEs) are those companies in which the direct holding of the Central Government or other CPSEs is 51% or more.

- CPSEs have always played a crucial role in executing the socio-economic development agenda of the government as an extension of the government apparatus.
- During the recent lockdown period, CPSEs ensured that essential services such as power, fuel and food-grain supply remain uninterrupted.
- They are carrying out capital expenditure works/infrastructure development activities of approximately ₹2 lakh crore in the sectors of petroleum, power, defence, mining, logistics, etc.
- CPSEs not only act as a catalyst for other economic activities but would also provide informal employment during the construction phase.

Role of Public Sector

1. **Public sector & capital formation** – This sector has been a major reason for the generation of capital in the Indian economy. A large amount of the capital comes from the Public sector Units in India
2. **Creation of Employment opportunities** – Public sector has brought about a major change in the employment sector in the country. They provide a lot of opportunities under various domains and thus helps in uplifting the Indian economy and society.
3. **Development of Different Regions** – The establishment of major factories and plants has boosted the socio-economic development of different regions across the country. Inhabitants of the region are impacted positively concerning the availability of facilities like electricity, water supply, township, etc.
4. **Upliftment of Research and Development** – Public sector units have been investing a lot to introduce advanced technology, automated equipment, and instruments. This investment would result in the overall cost of production.

Public Sector Undertakings (PSU) – Problems

1. **Excessive overhead cost:** A lot of projects in the PSU domain have often been in the news for not maintaining their promised deadlines. The jump in the date often comes with an added cost and the government has been consistently allocating funds to these PSUs with each budget.
 - a. The difference in the construction and completion is often attributed to the poor and inadequate project planning.
 - b. For e.g., a leading fertilizer project took about seven years to conclude despite a deadline of three years. As a result, the cost involved also went up from Rs27cr at first to approximately Rs40cr by the time it was completed.
2. **Lack of Autonomy & Accountability:** PSUs often find themselves amid political crossfires and therefore end up being more profitable to the people in power than to the ordinary investors.
 - a. Having a company's base in a particular state or union territory is often influenced by the local political sentiment rather than the need/resource availability in and around that locality.
 - b. This again leads to the rise in cost and lower or delayed return on investment in the long run.
3. **Over-capitalization of PSUs:** The input-output ratio in a lot of public sector companies is not maintained at the optimum levels. This is due to inadequate planning, excess machinery supply, expensive contracts, and compulsion to purchase imported equipment on the non-competitive basis from tied aids.
4. **Inefficient management:** Not having the freedom to exercise their executive powers discourages a lot of efficient managers from taking up high positions in PSUs. Those present are also unable to define the roles and responsibilities for their subordinates, leading to a slower and relaxed state of affairs within the organization.

5. **Under Utilization of capacity:** Many public sector enterprises work below their optimal capacity in spite of high costs allocated by the government. This could be a result of lack of market research, lack of promotion of vacancies, slow work environments, and so on.

Industrial Reforms over the years

POLICY	FOCUS OF THE POLICY
Industry Policy Resolution, 1948	Its focus was that the state must play an active role in the development of industries with government stressing on the socialistic pattern of society.
Industry Policy Resolution, 1956	It emphasized the need to expand the public sector (in line with the Mahalanobis Strategy of 2nd Five Year Plan). It encouraged the separation of ownership and management in private industries and prevent the rise of private monopolies. It also focused on building up a large and growing cooperative sector.
Industrial Licensing Policy, 1970	It sought to eliminate excessive concentration of economic power by modification in the licensing policy regarding large industrial houses and through enactment of the Monopolies and Restrictive Trade Practices Act, 1970.
New Industrial Policy, 1991	<ul style="list-style-type: none"> Industrial de-licensing. Deregulation of the industrial sector. Dereservation and reforms of Public Sector Enterprises. Abolition of MRTP Act. Foreign Investment Policy

Granting autonomy to PSUs:

- Criteria for grant of Maharatna status:** Shall be given to CPSEs:
 - Having Navratna status.
 - Listed on Indian stock exchange with minimum prescribed public shareholding under SEBI regulations.
 - Average annual turnover of more than Rs. 25,000 crore, during the last 3 years.
 - Average annual net worth of more than Rs. 15,000 crore, during the last 3 years.
 - Average annual net profit after tax of more than Rs. 5,000 crore, during the last 3 years.
 - Should have significant global presence/international operations.
- Criteria for grant of Navratna status:** The Miniratna Category – I and Schedule ‘A’ CPSEs, which have obtained ‘excellent’ or ‘very good’ rating under the Memorandum of Understanding system in three of the last five years, and have composite score of 60 or above in the six selected performance parameters, namely,
 - net profit to net worth.
 - manpower cost to total cost of production/services.
 - profit before depreciation, interest and taxes to capital employed.
 - profit before interest and taxes to turnover.
 - earning per share.

- f. inter-sectoral performance.
3. **Criteria for grant of Miniratna status:** The CPSEs which have made profits in the last three years continuously and have positive net worth are eligible to be considered for grant of Miniratna status.

Steps to be taken

- **Privatization of SAIL to boost the business**
 - The Appointments Committee of the Cabinet (ACC) has approved the restructuring of the Board of Steel Authority of India Limited (SAIL).
 - Decentralization- This move will facilitate greater decentralization and nimble decision making with the directors-in-charge of plants as direct ACC appointees with their views having weight in the central corporate governance structure.
 - This will also facilitate speedy modernization and expansion programme of SAIL.
 - This decentralization will also ensure there is greater transparency.
 - Attract investment- The government's exit will attract private investment and contribute to the exchequer, enabling higher public investment.
- **Switching to privatization**
 - **Efficiency-** One of the strongest arguments in favour of privatization aired by its supporters is the dismal performance of the PSEs and, thus, its inefficiency can be removed if these enterprises are privatized.
 - Government jobs are often taken for granted and have no difference between a performer and a non-performer when considering productivity.
 - Privatization will usher in an improvement in efficiency and as improved performance is concerned with 'profit-oriented' decision-making strategy.
 - **Lack of political interference-** Indian PSEs are subject to too much governmental and political interference thereby making them operationally inefficient.
 - Private sector is free from such unavoidable interference. They are motivated by political pressures rather than sound economic and business sense.
 - A most vital component in enhancing the performance of a PSU is reduced intervention by political powers and preventing misuse of infrastructure by all.

Way forward

- Privatization has become a popular measure for solving the organizational problems of governments by reducing the role of the state and encouraging the growth of the private sector enterprises.

- Privatization should be in a unique form in accordance with the priorities of our mixed economy and as well as by considering operational aspects of the PSUs.

Integrating silos in commerce ecosystem

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

In News: A Commerce Ministry for the 21st century with specialised departments for trade policy, negotiations and industrial development are of vital importance.

Commerce ecosystem in India:

Doing business in India:

- **India's rank:** India has made a remarkable jump in the World Bank's Ease of Doing Business Report 2020. It is ranked 63rd among 190 countries improving by 14 ranks from its rank of 77 in 2019.
- **Starting a Business-** India made starting a business easier by fully integrating multiple application forms into a general incorporation form,
- **Dealing with Construction Permits-** For example, building a warehouse cost around 4% of the warehouse value as compared to 5.7% in the previous year,
- **Trading across Borders-** With a single electronic platform improved electronic submission methods for documents and upgrades to port infrastructure, import and export process became easier, and
- **Resolving Insolvency-** Recovery rate under resolving insolvency has improved significantly from 26.5% to 71.6%. Also, the time taken for resolving insolvency has also come down significantly from 4.3 years to 1.6 years.

Innovating in India:

- India became the first developing country to launch the Global Innovation Index (GII) in association with World Intellectual Property Organisation (WIPO) and Confederation of India (CII).
- In the past 4 years India's rank in the GII has improved from the 81st rank in 2015 to the present 52nd rank in GII 2019 report.

Exporting from India:

- **Export Credit Guarantee Corporation Ltd (ECGC)** is wholly owned by the Ministry of Commerce and Industry. The Government of India had initially set up the Export Risks Insurance Corporation in 1957.
 - After the introduction of insurance covers to banks during the period 1962-64, the name was changed to Export Credit & Guarantee Corporation Ltd in 1964. It was changed to ECGC Ltd in August 2014.
 - Its **objective** was to promote exports from the country by providing credit risk insurance and related services for exports.

- **Origin Management System:** It gives a single access point for all exporters, for all Free Trade Agreements (FTAs), Preferential Trade Agreements (PTAs) and for all agencies. India has 15 FTAs/PTAs and 7 lakh 'Certificates of Origin' are issued annually.
- **'NIRVIK' scheme:** Export Credit Guarantee Corporation (ECGC) has introduced a new Export Credit Insurance Scheme (ECIS) called 'NIRVIK' for exporters in which increased insurance cover for export credit has been extended by banks from existing average of 60% to 90% for both Principal and Interest.
- **Agriculture Export Policy:** The Agriculture Export Policy has been approved to establish linkage between Farmers Producer Organisation (FPO) and the exporters, a portal has been created by Agricultural & Processed Food Products Export Development Authority (APEDA)

Logistics ecosystem:

- National Logistics Policy, 2019 is being prepared with the aim to bring down the total logistics cost from 14% to 9% of the country's GDP.
- The policy aims to boost business competitiveness, drive economic growth and make India a global logistics hub.
- As per the **Economic Survey 2017-18**, the Indian logistics sector provides livelihood to more than 22 million people and improving the sector will facilitate 10 % decrease in indirect logistics cost leading to the growth of 5 to 8% in exports.

Investment ecosystem:

- **Promoting Foreign Direct Investment:** 100% FDI has been allowed under the automatic route for coal mining activities including associated processing infrastructure. India currently allows 100% FDI through the automatic route in construction-development projects.
- **Increasing inflow:** FDI equity inflow received during FY21 (April to August, 2020) is \$27.1 billion. **India** received the highest ever **Foreign Direct Investment (FDI)** for the first five months of a financial year during April-August 2020.

Startup ecosystem:

- The recent economic survey pointed out an increase in startups in India. However, many are opting to register overseas due to complicated compliance norms and loss-inflicting laws.
- **Startup India** is the Indian Government's flagship initiative that aims to build a strong ecosystem to promote innovation and startups in the country.
- According to the **Economic Survey 2020**, as many as 27,084 startups were recognised across 551 districts as on January 8, 2020.
- Tier I cities contributed about 55% of the startups while 45% of the firms operated from Tier II and Tier III cities. Maharashtra, Karnataka and Delhi are the top three performers in terms of the state-wise distribution of recognised startups in the country.
- Economic Survey states the steps required to set up a company in India has reduced from 13 to 10 over the past decade. The time taken to incorporate business takes 18 days (down from a month in 2009).

E-commerce ecosystem:

- Propelled by rising smartphone penetration, the launch of 4G networks and increasing consumer wealth, the Indian e-commerce market is expected to grow to US\$ 200 billion by 2026 from US\$ 38.5 billion in 2017.
- In February 2019, a draft National E-Commerce policy has been prepared and placed in the public domain, which addresses six broad issues of the e-commerce ecosystem viz. e-commerce marketplaces; regulatory issues; infrastructure development; data; stimulating domestic digital economy and export promotion through e-commerce.
- FDI guidelines for e-commerce by DIPP: In order to increase the participation of foreign players in the e-commerce field, the Government has increased the limit of foreign direct investment (FDI) in the e-commerce marketplace model for up to 100% (in B2B models).

MSME ecosystem:

- The Micro, Small and Medium Enterprises (MSMEs) are literally the backbone of all Indian sectors and often engaged in manufacturing and export activities — two key drivers of the Indian economy.
- MSMEs contributes to over 30 per cent of India's GDP.
- They contribute to almost **half of exports** from the country. Additionally, more than **11 crore** people are employed in the MSME sector.
- CHAMPIONS (Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength) has also been launched by the Ministry of MSME to resolve the problems of MSMEs including those of finance, raw materials, labor, regulatory permissions etc particularly in the Covid created difficult situation;

Need of reforms:

- **High cost of logistics:** India spends around 14-15% of its GDP on logistics and transportation which is a very high amount which not used efficiently, can create serious asymmetries. World Bank study in Latin America proved that reducing the logistics costs share in the final price of goods by 14% can enhance demand by around 8-18% and increase employment by 2.5%– 16% in that sector.
- **Poor infrastructure:** Road sector is fraught with issues like heavy load on National highways (2% of total road network carries 40% of the load), Poor road quality, delays in expressway building, High level of fragmentation in trucking industry among others.
- **Export preparedness:** As per Economic Survey 2017-18, 70 per cent of India's export has been dominated by five states — Maharashtra, Gujarat, Karnataka, Tamil Nadu and Telangana. Some of the drawbacks obstructing export preparedness in many states are poor trade support, gaps in export infrastructure, basic trade support, lack of access to financial facility and low export credit.
- **Lack of R & D:** Regional disparities in terms of R&D infrastructure are high. India's cost competitiveness may not be sufficient to establish itself in the global economy. India faces stiff competition from South-East Asian and other South Asian countries.

- **Slow growth in manufacturing:** Against India's target of share of manufacturing in Gross Domestic Product (GDP) to 25% by 2022, China's share stood at 15% in 2018, only half of China's figure. According to a recent **IHS Markit India** monthly survey, Manufacturing **Purchasing Managers' Index (PMI)** fell to 27.4 in April, 2020 from 51.8 in March, 2020.
- **Economic Slowdown:** The viability of a business depends on the vitality of the economy in which it is embedded.
- **Regulatory uncertainty:** The structural reasons for slow growth of business comprises of regulatory framework which includes a plethora of overlapping laws and compliance requirements in setting-up and running a business. For example, frequent change in e-commerce policy.
- **Subjective interpretation of the law:** Tax laws are prone to the subjective interpretation of tax officers which causes undue hardships to taxpayers and leaves scope for "tax terrorism".

Reforms suggested:

How the commerce ministry can be revamped to serve the needs of 21st century?

- The Ministry of Commerce and Industry is tasked with navigating the **complex web of issues** to support India's industrial development and competitiveness, and its engagement with the global economy.
- This task requires **institutional depth and high levels of capability and domain expertise**.

Competent trade negotiators

- The first suggestion is **to create a specialised department** focussed only on trade policy and negotiations headed by a Secretary.
- This department would be responsible for all negotiations for the WTO, FTAs, and other trade and investment related agreements.
- Senior officers including Joint and Additional Secretaries should have contracts of minimum five years, and should be individuals with major trade policy related experience because longer tenures would ensure institutional memory.

Competitiveness & value-chains

- Create a single department responsible for the country's industrial development and competitiveness.
- This would require bringing together of the mandates of the Director-General of Foreign Trade (DGFT), the Department for Promotion of Industry and Internal Trade (DPIIT).
- Special Economic Zones (SEZs) and Export Promotion Councils (EPCs) would also be under this department's realm.
- It would lead to streamlining of the overall policy making and involvements required to address issues of industrial development, sectoral strategies and incentives, and export promotion.

Export discounts, trade promotion

- Export incentives should be replaced by schemes that reward firms for new product development, expanding into new markets, for job creation, or for significant achievements in value-addition.
- The digital information available with GSTN, Customs ICEGATE, the RBI, Unique LIN linked to EPFO and ESIC, and the JAM trinity has made this very easy.
- Dynamic MSMEs would be the biggest beneficiaries of trade facilitation schemes.
- EPCs should be made responsible for systemically collecting data and commercial intelligence in their sector, mapping global market opportunities and potential sources of competition.
- An anonymous committee drawn from industry members in EPCs should be made responsible for an independent inspection.
- EPCs should be made responsible for actual buyer-seller matching, and successful conclusion of deals achieved due to their efforts. They should be formally certified by beneficiary member firms.
- A grievance redress mechanism for members who have not received sufficient level of support from their EPCs should be set up, headed by the Secretary of the department.

Logistics Division

- Another suggestion is that the Logistics Division should become a full-fledged department headed by a Secretary.
- It should also be made responsible for Trade Facilitation along with providing holistic institutional basis to coordinate logistics infrastructure development, master-planning, and policy development.
- The Logistics Division should become the secretariat for the National Trade Facilitation Committee (NTFC), and be made responsible for framing the National Trade Facilitation Action Plan (NTFAP) and its implementation.

Way forward:

- In order to impart Customs related domain expertise, officers from Customs could be supported to the Logistics Division to support the NTFC related activities.
- Reforms must be made to the current restrictive legislative structure and regulatory norms in a way that allows the startups to flourish.
- Improvement of R&D infrastructure across the country.
- FDI policy requires a review to ensure that it facilitates greater technology transfer, leverages strategic linkages and innovation.
- **State-specific industrialisation strategies** need to be devised and implemented in a mission mode with active hand-holding by the Central government.
- Taxation laws should be made simpler and tax administration should be impersonal. Direct Tax Code (DTC) will be the right step in this direction.

NGOs: Face of India's Development Industry

Syllabus: Development Processes and the Development Industry – the Role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.

In News: A strong programme for capacity building of NGO workers engaged in educational sector has become an urgent need.

Characteristics of NGOs

- NGOs (Non-Governmental Organizations) are voluntary organizations, that work toward a social cause and aim to ensure social justice. They have assumed a significant space in civil society.
- NGOs with the support given by the government have been accelerating its development activities by taking up specific issues like poverty alleviation, casteism and discrimination, women rights, child labour, rural development, environmental issues etc.
- In the last two decades the role of NGOs have become significant in the social sector development-education, health etc.
- They are meant to be independent, democratic, non-sectarian people's organization working for the empowerment of economic and/or socially marginalized groups.

Types of NGOs

In the 1980s, three different forms of NGO/voluntary movement emerged in India:

- **Traditional Development NGOs:** These NGOs directly engage with the public at large, go to the villages, tribal areas and carry out grass root development work related to education, health, sanitation, rural development etc. Ex: treatment centre for leprosy patients run by Baba Amte in central India.
- **Activist NGOs:** They see activism as their primary means of reaching their goals, because they do not believe they could get the authorities to move in any other way. Perhaps the best-known example of an NGO in this category is the Narmada Bachao Andolan (Save Narmada Campaign), an organization that opposed the construction of a series of large dams in a large river valley of central India.
- **Research NGOs:** They carry out intensive and in-depth analysis of topic/issue and lobby with the government, industry, or other agencies to influence public policy. Ex: Centre for Science and Environment which engages in environment related works.
- However, this classification is not strict and rigid. These NGOs keep taking multiple works that can be categorized in one category or other.

Role of NGOs in Development:

1. **Social development:** NGOs have played an immense role in bringing social change and development. NGOs ensure development which essentially involves the equal participation of the people. They play a significant role in educating and motivating people to fight for their rights.
2. **Women empowerment:** More and more women are working for their rights and involving themselves actively in the social sphere. Important in this process has been the

role of NGOs. Sewa, Sathin, Eklavya, Disha etc. are some of the thousands of NGOs known for their role in development by creating awareness among people and interventions regarding women.

3. **Environmental awareness:** Human life is facing a threat due to environmental pollution and the depletion of natural resources. Here, the role of NGOs work is noticeable and praiseworthy. Thousands of voluntary organisations work to awaken people and governments against environmental degradation and depletion of resources e.g. Vanashakti NGO.
4. **Rehabilitation:** The projects like the construction of dams, road highways and railways have often led to displacement of some sections of people, particularly in rural areas without being properly compensated. The NGOs have a key role to play towards the cause of people's resettlement and are also performing commendable jobs in this direction.
5. **Protecting dignity:** NGOs are also rendering great service in restoring dignity of the deprived and discriminated sections. For example, protecting dignity of women by protecting women suffering from gender discrimination, racial and religious discriminations.
6. **Human rights protection:** The contribution of NGOs to human rights and public awareness is significant in India. The recognition of the rights of homosexuals and transgender people, for instance, would have been unimaginable without the sustained effort of civil society organisations.
7. **Elementary education in India:** NGO'S are intensively engaged in the task of improving elementary education.
 - a. There are more than 12 lakh NGO workers engaged in direct teaching in classrooms, demonstrating various activities and methods to teachers, conducting teacher workshops and so on.
 - b. NGO workers are supposed to be more effective than regular employees in the government system.
 - c. Therefore, these workers must have some idea of what education quality happen to be and are required to adequately prepare for this difficult task.

Legislations and constitutional provisions regarding NGOs:

Foreign Contribution (Regulation) Act (FCRA), 2010	The act ensures that the recipients of foreign contributions adhere to the stated purpose for which such contribution has been obtained.
Foreign Exchange Management Act, 1999	It aims to facilitate external trade and payments and promote the orderly development and maintenance of foreign exchange market in India.

Constitutional Provisions for NGOs in India

- Article 19(1)(c) on the right to form associations
- Article 43 which highlights the State's having an endeavour to promote cooperatives in rural areas
- Concurrent List in Entry 28 mentions Charities and charitable institutions, charitable and religious endowments, and religious institutions.

Issues that remained despite these legislations that impact efficiencies of NGOs:

1. **Difficulties to get funds:** Most NGOs have experienced difficulties in getting enough, and continuous funding to do their work. Getting donors is a challenging task, and sometimes dealing with some specific donor's funding conditions can be an enormous challenge for NGOs.
2. **Over-regulations:** Government regulations are misused to curb voice and work of NGOs that impact vote bank of politicians. Politicians threaten NGOs of removing funds or removing their certification. Over-regulation of NGOs hinder their work and efficiency.
3. **Cultural hurdles:** NGOs are often seen as encroaching on centuries-old tradition and culture of the people, and lead to mass protest at times. Ban of Jallikattu after a Public interest litigation filed by PETA is one such example.
4. **Lack of proper networking:** For some NGOs, it is difficult to develop networks. Having a poor network leads to lack of communication. Poor networks lead to loss of opportunity to work with community and their participation and impact NGOs effectiveness.
5. **Lack of governance:** Many NGOs do not have a Board for governance. One of the main reasons for that is the difficulty to attract board members without paying them or providing them some benefits. Often lack of board leads to poor direction and inefficiencies in NGO working.
6. **Quality of education-** The quality of education or school in today's society is based on a high score in the board examinations rather than actual meaningful learning.
7. **Carelessness-** NGOs do not seem to be paying adequate attention to the programmes such as capacity building of their workers nor do universities and teacher education colleges seem to be offering any short term and/or distance learning courses for this sector.
8. **Accreditation challenges:** Accreditation remains a big challenge as it is difficult to distinguish whether an organization wants to work for the cause or has been set up only for the purpose of receiving government grants.
9. **Misappropriation of funds:** Many NGOs don't have sophisticated finance and legal teams, nor do they have the funds to conduct audits.
10. **Undemocratic functioning:** CBI records filed in the Supreme Court show that only 10% of the total registered NGOs under the Societies Registration Act file annual financial statements.

Amendments to the Foreign Currency Regulation Act (FCRA), 2010:

- New regulations put onerous conditions on NGOs, educational and research institutions that have partnerships, including of a financial nature, with foreign entities.
- **Aadhaar for registration:** The Bill makes **Aadhaar number mandatory** for all office bearers, directors or key functionaries of a person receiving foreign contribution, as an identification document.
- **Prohibition to accept foreign contribution:** The Bill **bars public servants** from receiving foreign contributions.

The steps to be taken

1. **Monitoring:** There should be better coordination between Ministries of Home Affairs and Finance in terms of monitoring and regulating illicit and unaccounted funds. NGOs are vehicles of development especially in rural areas.
2. **Participation:** Citizens today are keen to play an active role in processes that shape their lives. It is important that their participation in democracy go beyond the voting and should include promotion of social justice, gender equity, inclusion etc. while working with NGOs.
3. **Improving governance:** Having a Board for governing NGO is one of the best ways to achieve good levels of governance. Capacity building and training can help to provide crucial new skills. NGOs can more readily train staff and cultivate the necessary skills within the organisation to address challenges going forward.
4. **Funding:** Maintaining a good relationship with partners will be helpful in growing as an organisation. NGOs with assets can use any surplus to help generate income. Renting out buildings, offering training, providing consultancy, creating and selling products and trading on their name.
5. **Cultural awareness:** NGO should try to know local cultures and should work in harmony with the communities. They must make people aware of any discriminatory community practices and work with them, rather than going against the people.

Way forward:

- A National Accreditation Council consisting of academicians, activist, retired bureaucrats should be made to ensure compliance by NGOs.
- There should be better coordination between Ministries of Home Affairs and Finance in terms of monitoring and regulating illicit and unaccounted funds.

UN @ 75

Syllabus: Important International Institutions, agencies, and fora - their Structure, Mandate.

In News: October 24 marks the diamond jubilee of the United Nations.

UN in today's world:

- **Rise of New Cold War:** Conflict between the US on the one hand and China and Russia on the other has become a new reality in West-East Conflict.

- **Divided West:** Despite the enduring post-War alliances, there is a growing divergence between US and its European partners on many global issues. For example, The European Union remains committed to implementing the Iran nuclear deal whereas the US has withdrawn from the Joint Comprehensive Plan of Action.
- **Rise of Aggressive china:** The UN has been unable to respond effectively to the once-in-a-century global crisis triggered by the coronavirus. At the UN Security Council, China blocked a serious discussion on the origin and sources of the crisis. While the US walked out of the World Health Organisation on allegation of supporting China.
- **Provide humanitarian aid:** UN provides humanitarian relief operations in areas that are beyond the capacity of the national authority alone. The Office for the Coordination of Humanitarian Affairs (OCHA) is vested with the responsibility to coordinate responses to emergencies.
- **Upholds International Law.** This has been an essential part of the working of the UN organization. The UN Charter is an instrument of International Law and all the member states are bound by it.
- **Promoting sustainable development:** Sustainable development ensures improvement in the quality of life of people. The main focus of the UN is to bring social, economic and environmental development in the world.
- **Role of UN agencies:** The UN specialized agencies like the Food and Agriculture Organization (FAO), UNICEF (United Nations Children's Fund), World Health Organization, etc have done noteworthy work in the growth and development of the developed and developing countries.
 - For instance, Impact made by UNDP (United Nations Development Group)
 - 31 million people have better access to services to tackle poverty
 - 20 million people have gained access to financial services
 - There has been a cut 256 million tonnes of carbon emission

How has International Politics affected UN functioning over the years?

- UN was meant, by design, to be a concert of great powers who had a permanent seat in the Security Council. Cooperation among the great powers was the precondition for its success in the security arena. However, **In 2000s**, Russia and China began to resist US dominance.
- **During the Cold War**, Washington and Moscow were at each other's throats and the UNSC was deadlocked.
- **During the brief unipolar moment of the 1990s**, post-Soviet Russia was willing to acquiesce to the sweeping US agenda for global security. China was feeling its way around multilateral institutions and avoided any challenge to the US and West.
- **Political Fragmentation:** The conflict between the US on the one hand and China and Russia on the other has become full-blown. To make matters more complicated, the West itself is divided.

Successes of UN:

- **During cold war years:** The UN had little room to implement noble visions of peace, development, and human rights.
- **Post-Cold War years:** Regarded as the golden age of the UN. It was actively involved in peacekeeping missions, nation-building interventions, and promotion of universal human rights.
- **Wide representation:** at the time of its formation, the UN consisted of only 51 member states, independence movements and de-colonisation in the subsequent years led to an expansion of its membership. At present, 193 countries are members of the UN.
- **Resolving global issues:** It has also expanded its scope to resolve over many global issues such as health, environment, women empowerment, among others. In 1950, the UN created the High Commissioner for Refugees to take care of the millions who had been displaced due to World War II. It continues to be on the frontlines of crises faced by refugees from countries across the world. In 2002, the UN established the UN criminal court to try those who have committed war crimes, genocide, and other atrocities.

Failures of UN:

- **Inefficient to fulfil objectives:** The performance of the Security Council in maintaining international peace and security has been poor.
 - It failed in its actions in Somalia, Bosnia, and Rwanda.
 - In 2011, the UN peacekeeping mission in South Sudan was unsuccessful in eliminating the bloodshed caused in the civil war that broke out in 2013.
- **Rwandan genocide:** In 1994, for instance, the organisation failed to stop the Rwandan genocide.
- **New Cold War years:** It represents present increase in geopolitical tensions between U.S and China. This period again witnessed incredibly low activities of UN like the cold war period.
- **Not Inclusive:** The institution has been designed to privilege the most powerful states of the post-World War II dispensation by granting them veto power and permanent seats in the Security Council (UNSC).
- **Failed to control the Pandemic:** The UN failed to cooperate against the immediate global threat of the pandemic due to rivalry between members.

- **Misconduct:** In 2005, UN peacekeeping missions were accused of sexual misconduct in the Republic of Congo, and similar allegations have also come from Cambodia and Haiti.

United Nations:

- The name “United Nations,” coined by United States President **Franklin D. Roosevelt** was first used in the Declaration by United Nations of 1 January 1942, during the Second World War, when representatives of 26 nations pledged their Governments to continue fighting together against the Axis Powers.
- The United Nations is an **international organization founded in 1945**.
- It is currently made up of 193 Member States.
- The mission and work of the United Nations are guided by the purposes and principles contained in its founding Charter.
- The main organs of the UN are the **General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the International Court of Justice, and the UN Secretariat**.
- 2020 marks the 75th anniversary of the United Nations.

The UN performs five main functions

- **Maintaining peace and security:** The UN was founded with the mission of maintenance of peace and security does so by preventing conflicts in the first place.
- **Protection of Human Rights:** Protecting human rights has been the key purpose of UN, the Preamble and Article 1(3) of the UN Charter provides that the UN shall protect the human rights of all.
- **Provide humanitarian aid:** UN provides humanitarian relief operations in areas that are beyond the capacity of the national authority alone. The Office for the Coordination of Humanitarian Affairs (OCHA) is vested with the responsibility to coordinate responses to emergencies.
- **Upholds International Law.** This has been an essential part of the working of the UN organization. The UN Charter is an instrument of International Law and all the member states are bound by it.
- **Promoting sustainable development:** Sustainable development ensures improvement in the quality of life of people. The focus of the UN is to bring social, economic, and environmental development in the world.

Need for UN reforms

- **Inequality:** The **membership of the Security Council has changed little** since its inception in 1945, even though the number of UN member states has almost quadrupled.
 - The UNSC (United Nation Security Council) does not include a permanent member from the African, Australian, and South American continents, the G-4 group of Brazil, India, Germany, and Japan.
- **Undemocratic representation:** The regions like far East Asia, South America, Africa have no representation in the permanent membership of the council.
- **Exclusiveness:** The **differences between permanent and non-permanent seats** produce a highly unequal and inefficient Security Council.

- The five permanent members (P5) – Britain, France, United States, Russia and China – possess permanent seats and have the **privilege of the veto** whilst the status of non-permanent members is low.
- **Stalled Intergovernmental Negotiations (IGN):** The UN's reform process, held through IGN has not made progress over decades, despite commitments.
 - Intergovernmental Negotiations framework (**IGN**) is a group within the **United Nations** that looks into UNSC reforms but it has made no progress since 2009 when it was formed. The group's conversation is considered 'informal' in nature.
- **Losing relevance:** The global body has been losing relevance as the permanent members of its Security Council; the Big Five did exercise disproportionate influence in world affairs by virtue of their nuclear arsenals.
- **Contemporary geopolitical realities:** the emergence of several other nations playing a significant role including India. However, the basic matrix of power within the UN's apex decision-making unit has remained stuck in time.
- **Reduced credibility:** Unilateral military actions by major world powers seem to have gained a measure of legitimacy, and the very idea of the Council working out solutions to international problems has turned anachronistic.
- **Emergence of new world order:** Rise of forum like G4 (India, Brazil, Germany, and Japan) as important economies and emerging world powers are pushing after quick UN Security Council reforms.
- **Misuse of veto power:**
 - **Rule of the few over the many:** It gives privilege to the most powerful states of the post-World War II by granting them great command over international politics via the undemocratic instruments of veto power.
 - **Failed in its objectives:** Competitive vetoing by P-5 countries has prevented the UNSC from fulfilling its collective security mandate. For example, failure to cooperate against the immediate global threat of the pandemic.

India and its demand for UN reforms:

- India is fastest growing trillion-dollar economy in the world.
 - Recently India became the fifth largest economy, overtaking the United Kingdom by 2019 as per the IMF projections.
 - Also India is the largest democracy with a billion-plus people.
- India is a founding member of the UN, and it has been the temporary member of the UNSC for 7 terms.
- India provides large numbers of soldiers to the UN for peace-keeping missions.
 - India has made the largest troop contributions to the **United Nations Peacekeeping Mission** (UNPKO). Today, India has over 5000 peacekeepers deployed in the field.
- India's success in space technology is another landmark point for its candidature.

- India enjoys the backing of major powers including four permanent members other than China and those of African Union, Latin America, middle eastern countries and other LDCs (less developed countries) from various parts of the globe.

Steps taken by India:

- India had launched a campaign brochure which highlighted its demand for transparency in mandates for UN peacekeeping missions and push for the India-led Comprehensive Convention on International Terrorism, and called for joint efforts for UN reform and expansion of the Security Council.
- India is a part of G-4, a group of 4 nations (India, Brazil, Germany and Japan) to lobby for permanent positions on the UNSC or at least to make the council more representative. G-4 wants to expand the permanent seats in the UNSC to 10 to include 6 new members G-4 nations apart from one seat to Africa and one seat to Arabs.

Way forward:

- Transparency in the working of diplomats is a useful adaptation for pathway to progress.
- Reform of the Security Council includes looking into membership categories, adding more permanent members- presently five countries are permanent members and the council's working methods.
- Text-based negotiations should be initiated immediately. It is the process used to translate words into action in the United Nations.
- Enhancing regional representation in the Security Council by ensuring that the concerns and aspirations of unrepresented or underrepresented regions are taken into consideration.

India's Foreign Policy: Changing Perspectives

Syllabus: Effect of Policies and Politics of Developed and Developing Countries on India's interests.

In News: The engagement of India and China in the West Asia region is a good example of their evolving strategic autonomy.

Demonstration of India's strategic autonomy in distinct phases:

- **Bipolar (1947 to 1991):** Era of Cold War where world was divided in two camps one headed by USA and other headed by erstwhile USSR.
 - During this phase India adhered to the principle of Non-Alignment.
 - India's objectives were to resist the constraining of choices and dilution of its sovereignty as it rebuilt its economy and consolidated its integrity.
- **Unipolar (1991 to 2008):** With disintegration of USSR, USA became the sole super power.
 - In this phase India reached out to engage with US, Israel and ASEAN countries more intensively.
- **Multipolar:** At present times where there are big powers and several middle powers.
 - In this phase of transitional geopolitics, India's policy of Non-Alignment has turned into Multi Alignment.

Difference between non alignment and strategic autonomy:**Non-alignment:**

- Non-alignment has been regarded as the most important feature of India's foreign policy.
- Non-alignment aimed to **maintain national independence** in foreign affairs by not joining any military alliance formed by the USA and the Soviet Union in the aftermath of the Second World War.
- Non-alignment was **neither neutrality nor non-involvement nor isolationism**.
- It was a **dynamic concept** which meant not committing to any military bloc but taking an independent stand on international issues according to the merits of each case.
- Former PM Nehru took the initiative to convene the **Asian Relations Conference** in New Delhi in 1947. Later on, a Conference, of 29 countries of Asia and Africa was held in Bandung (Indonesia) in 1955.

Strategic Autonomy in Emerging Multipolar World

- Strategic autonomy is the **ability of a state to pursue its own national interest** and preferred foreign policy without being constrained by other states.
- India has pursued the policy of strategic autonomy ever since independence during bipolar cold war (1947-1991), unipolar times (1991-2008) and multipolar times (2008-present).
- This strategic autonomy is not an isolation nor an alliance.
- It has to be recalibrated as per security environment to ensure India's sovereignty and territorial integrity is maintained.

Flexibility in maintaining autonomy

- Strategic autonomy has often been adjusted in India's history as per the changing milieu.
- In moments of crisis, India has **reinterpreted freedom and shown flexibility for survival**.
- **China war, 1962:** Then Indian PM Jawaharlal Nehru, had to appeal to the **U.S. for emergency military aid** to stave off the Chinese from "taking over the whole of Eastern India."
- **Build-up to the 1971 war with Pakistan:** Then Indian PM Indira Gandhi had to enter a **Treaty of Peace, Friendship and Cooperation with the Soviet Union** to ward off both China and the U.S.
- **Kargil war, 1999:** India had welcomed a **direct intervention by the U.S.** to force Pakistan to back down

India's Present policy:

- **USA's Resolution to declare Jerusalem as Israel's capital:** India voted against USA rather than abstaining from voting despite USA's pressure tactics. It is in line with India's non-alignment policy and **support for Palestinian cause**.
- **Balancing Power:** It also represents India's shift from a balancing power to a leading power on international stage. For example, India supported Mauritius's claim on sovereignty over Chagos archipelago and second was India getting a seat in ICJ despite

US objections. By supporting Palestine India stayed with major groupings like SCO, BRICS and major European countries.

- **Multi-alignment approach:**
 - India has moved from a P2 (US and China) mindset to a P5+2 approach to positioning itself as a power. e.g.: membership of ASEAN, SCO, Quad.
 - India's preference towards a 'free, open and inclusive Indo-Pacific' refers to a multipolar regional order within which Delhi can maintain its strategic autonomy, project its own leadership.
 - The strategic autonomy manifested in the form of Russia-India- China (RIC) meeting or Japan- America -India (JAI) meeting is a new feather in India's independent foreign policy conduct
- **De-hyphenation policy of India:** In 2015 India abstained at the UN Human Rights Commission (UNHRC) on a resolution welcoming the report of a Commission of Inquiry against Israel's alleged human rights violations. It was the first time India refused to vote against Israel.
- **Issue-based cooperation:**
 - In the Middle East, India has reached out to Saudi Arabia, Israel, and Iran. India was invited to the inaugural address the Organisation of Islamic Cooperation (OIC) for the first time in its 50 years of existence.
 - Recently India overlooked USA and decided to go ahead with the S-400 deal with Russia, which is one of the most effective missile systems
 - Intensified cooperation with middle powers like UK, EU, Japan and ASEAN countries to accomplish collective goals.
 - India pulled out of the Regional Comprehensive Economic Partnership and concluded that a China-led economic order in Asia will permanently ruin India's economic prospects.
- **Use of Hard power and Expanding military cooperation:**
 - India's responded strongly to the terror strikes in Pulwama and Balakot airstrikes.
 - India invited Australia to join Malabar naval exercise along with US & Japan. (Exercise Malabar is a trilateral naval exercise involving the United States, Japan and India as permanent partners).
 - India has also signed military logistics support agreements with partner countries such as USA, France, Singapore, Australia, South Korea.
- **Engagements in multiple forums:** engagement with (IBSA, BASIC, BRICS, QUAD, AIIB, G4, G20 etc) for varying economic, political and security purposes have made the Non-Aligned Movement "largely incidental" to India's pursuit of its national interest since the end of the Cold War.

Need of strategic autonomy in present context:

- **Rise of China at global stage-**
 - **Trade war:** This has resulted in a trade and strategic war between China and the US, without caring for the real interests of the people and environment, which will tend to have disastrous consequences for most of the world and global population.
 - **Assertive China:** Security threat like doklam standoff, clashes in Galwan valley across LAC, China Pakistan nexus (China Pakistan Economic Corridor-CPEC).
 - Recently, the tension at the Western Sector of the India-China border claimed lives from both sides and exposed the unresolved conflicts between the two neighbouring Asian giants.
- **Changed geopolitical equations:** India is at an inflection point with regard to strategic autonomy.
- **Shifting balance of Power:** It led to increasing arms race and to rising uncertainty. For example “America First” attitude of United States, Arms race, US-China trade war, militarisation of South China Sea threatening freedom of navigation, USA-Iran rivalry etc.
- **Dependence on developed countries for economic growth:** India needs technology, capital, markets, skills, defence equipment, international networking, and global cooperation to resolve global issues.
- **New cold war:**
 - The New Cold War scenario has created a threat environment in which China and the U.S. are now beginning to confront many areas like Trade war and South China sea.
 - Also, fears that proximity to the U.S. will lead to loss of India's strategic autonomy are overblown because independent India has never been subordinated to a foreign hegemon.
- **Global need-**
 - The world needs today are international relations based on the principles of mutual respect, concern and cooperation and population involvement.
 - To come together to build public health and education infrastructure.

Way forward:

- **Diversification is the need for self-reliance:**
 - Remaining an independent power centre as complete dependence on US will impact ties with Russia, Iran as well as defense indigenization.
 - Intensified cooperation with middle powers like UK, EU, Japan and ASEAN countries to accomplish collective goals.
 - Strategic relationships with multilateral institutions and multiple partners including developing countries, least developed countries.
- **Modernise defence sector:** India is dependent on many foreign players (like U.S, Russia etc.) for its defence requirement. That is why, defense indigenisation assumes more significance, especially in the context of counterbalancing China.

- **A multi vector foreign policy approach:** Need to maintain good relations with all strategic countries is the need of the day for India. Its potential has to be maximized by multi alignment rather than isolation or alliance.
- **Non-Alignment 2.0:** A foreign and strategic policy for India in the 21st century, which identifies the basic principles and drivers that would make the country a leading player on the world stage while preserving its strategic autonomy and value system.

GENERAL STUDIES 3

Gig Labour: a new workforce

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

In News: Government to ensure Labour Benefits for the Gig Economy Workers.

What is Gig Economy?

- A gig economy is a **free market system** in which temporary positions are common and organizations contract with independent workers for short-term engagements.
- It is characterized by **short-term contracts or freelance work** as opposed to permanent jobs.
- Gig economy allows the service adopter **to cut overhead costs**, and the gig worker to get paid for a specific task performed instead of receiving a fixed salary.
- Thus, gig economy can be defined as **a shift from a full time 9-to-5 job to an on-demand, freelance and task-based economy**.
- A gig economy **encompasses all platforms** that hire independent contractors, consultants, and workers in different sectors, such as information technology, content creation etc.

State of Gig economy in India

- **Global Gig Economy Index report** has ranked India among the top 10 countries. The report says there has been an increase in freelancers in India from 11% in 2018 to 52% in 2019.
 - An estimated **56% of new employment** in India is being generated by the gig economy companies across both the blue-collar and white-collar workforce.
 - In India, there are about **3 million gig workers** that include temporary workers including independent contractors, online platform workers, contract firm workers, and on-call workers.
- The gig economy **is expanding** from less skilled services (For example– domestic chores at BookMyChotu in India) to more skilled jobs (For example– Guru in India).
- After retirement, many people are getting engaged themselves in contractual jobs as it provides them flexibility

- The **new labour codes** passed by Parliament recently acknowledged platform and gig workers as new occupational categories in the making.
- In India **70 percent corporates** have used gig workers at least once for major organisational issues in 2018, according to a report.
- A report 'The Future of Work is Anywhere - Gig Workforce' by Noble House has revealed that men and women both have an **almost 50:50 split in the gig economy** against the traditional workforce where the ratio is about 70:30.
- Human resources firm **TeamLease estimates that 13 lakh Indians joined the gig economy** in the last half of 2018-19, registering a 30% growth compared to the first half of the fiscal year.
- The rise in Gig economy in India can be attributed to the **three key megatrends (EY Report)** that are driven by:
 - Demographic change such as rising middle-class,
 - high proportion of young population,
 - Increasing urbanization.

Challenges of gig economy

- **Lack of Social protection measures:** Gig Workers do not have access to welfare benefits like pension, gratuity etc for the workers whereas in traditional jobs, the employers contribute towards employee benefits such as EPF, health insurance, medical insurance, pension etc.
- **Issue of payment:** There is hardly any transparency in the amount and mode of payment received. Many centralized online marketplaces like Fivver, Upwork and Freelancer.com charge fees from the freelancers to the tune of 5% to 10%.
- **Lack of labour rights:** Less paid leaves, difficulty in forming unions guaranteed by article 19 of the Indian constitution etc.
- **Lack of access to financial services:** Banks and other financial service providers resist extending lines of credit when steady income is not assured in situations where teamwork is essential and gig worker teams will likely produce tardy, inconsistent and poor output.
- **Digital divide:** The gig economy is not accessible for people in many rural areas where internet connectivity is unavailable.
- **Lack of support:** Gig workers need to constantly update their knowledge and skillset to remain relevant in their business at their own cost
- **Increasing informal workers:** Gig economy in India is an extension of India's informal labour, which has been prevalent for a long time and has remained unregulated.
- **Less bargaining power:** A worker need to be highly skilled enough. Unless a person is extremely talented, his bargaining power will necessarily be limited.

Recent steps taken by government:

- **Code on Social Security:** Ministry of Labour and Employment has been working on a 'Code on Social Security, 2019'. The code has provisions to ensure labour benefits for gig-economy workers.
 - Code on Social Security, 2019 provides that central or state government may notify specific schemes for gig workers to provide various benefits, such as life and disability cover. Such schemes may be financed through a combination of contributions from the employer, employee, and the appropriate government.
- **State level initiatives:** Karnataka drafted a bill to ensure basic facilities for labour employed in the gig economy sector, such as cab aggregators and delivery partners

Way Forward:

- **Upskilling or reskilling:** The current model of formal learning up to the age of 20 - 25 years and then working and experiential learning for the rest of our lives need to be reevaluated. : Government in collaboration with educational institutions and industry must generate pool of well-trained workers
- **Social protection:** Gig Workers and contractual workers must be given protection through minimum wages, maternity benefits and other welfare provisions just like regular workers. For example, The Karnataka government has considered introducing a new labour legislation focused on the gig economy.
- **Dispute redressal mechanism:** Introduce tripartite system with labour unions, managements and the government to resolve disputes in gig economy.
- **Legal framework:** Required changes in the law to redefine what a "worker" means. Amendments in labour laws to reflect the changing nature of gig economy.
- **Support from Industry:** Companies can introduce peer-to-peer mentoring and establish sharing platforms, both offline and online, to enable workers to connect with each other.
- **Engagement with other countries:** India can engage with the European Union and the United States, where discussion on protections in a gig economy is already underway.
- **Prepare a national database:** National database of job seekers and job creators can connect firms with qualified candidates. The government could play the role of a facilitator, in partnership with the private sector.

In the new era of fourth industrial revolution, Gig economy has the potential to bring huge amount of benefits for developing countries like India. Challenges can be converted into opportunities with the help of collaborations between Government, workers and educational institutions.

The unsweet reality of Sugar Industry

Syllabus: Food Processing and Related Industries in India- Scope' and Significance, Location, Upstream and Downstream Requirements, Supply Chain Management.

In News: Recently, Cabinet Sub-Committee visited Thandava and Etikoppaka Cooperative Sugar Factories in the district and consulted the farmers on the steps needed to improve their functioning.

Sugarcane crop:

- Sugarcane is grown as a Kharif Crop.
- It needs hot and humid climate with an average temperature of 21°C to 27°C.
- It requires rainfall in the range of 75-150 cm.
- Sugarcane can grow in any soil which can retain moisture. Ideal soil for sugarcane is rich loamy soil.
- Sugar industry in India is based on sugarcane which is a heavy, low value, weight losing and perishable raw material.
- Maharashtra is the largest producer of sugar in India, contributing almost 37 per cent of the total national output.

State of sugar Industry in India:

- Sugar industry is an important Agro-based industry that impacts rural livelihood of about 50 million sugarcane farmers and around 5 lakh workers directly employed in sugar mills.
- Three distinct belts of sugarcane cultivation.
 - The Sutlej-Ganga plain from Punjab to Bihar containing 51 per cent of the total area and 60 percent of the country's total production.
 - The black soil belt from Maharashtra to Tamil Nadu along the eastern slopes of the Western Ghats.
 - Coastal Andhra and the Krishna Valley.
- India is the second largest producer of sugar in the world after Brazil and is also the largest consumer.
- Indian sugar industry's annual output is worth approximately Rs.80, 000 crores. There are 735 installed sugar factories in the country as on 31.01.2018, with sufficient crushing capacity to produce around 340 lakh MT of sugar.
- Sugar industry is broadly distributed over two major areas of production- Uttar Pradesh, Bihar, Haryana and Punjab in the north and Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh in the south.

North-South Divide in India's sugar industry	
North India	South India
Extreme weather condition in summer and winter affects the crop negatively and yield per unit area is low.	The climate in south is suitable for the crop and hence the yield per unit area is high.
Sugarcane has low sucrose content.	Sugarcane has high sucrose content.
Crushing season is smaller.	Crushing season is longer

The cooperative sugar mills are not managed properly.	The cooperative sugar mills are better managed.
They lack modern machinery.	They have modern machinery

Potential of sugar industry:

- **Multiple linkages:** Sugar is a labour-intensive industry, up the entire value-chain from cane-growing to sugar and alcohol production.
- **Source of livelihood:** A sugar industry is source of livelihood for around 50 million farmers and their families. It provides direct employment to over 5 lakh skilled laborers but also to semi-skilled laborers in sugar mills and allied industries across the nation.
- **Significance of by products:** Sugarcane has emerged as a multi-product crop used as a basic raw material to produce sugar, ethanol, paper, electricity and besides a cogeneration of ancillary product.
- **For livestock feeding:** Molasses from sugar cane is used for alcohol production and livestock feeding since it is highly nutritious.
- **Biofuel:** Ethanol is produced from sugarcane molasses, a by-product of sugar. Ethanol blended fuel can help in reducing crude oil imports.
- **Bagasse:** Basic utilisation of bagasse continues to be as a fuel. But it is also suitable raw material for paper industry. 30% of cellulose requirement comes from agricultural residues.

Issues with sugar industry:

- **High production of sugar but less demand:** Recent years have witnessed surplus production of sugar. However, the demand is much lower and extra stocks of the produce is posing concerns for the government. Industry's production for 2018-19 was 35.5 million metric tonnes (MMT) against an annual consumption of about 26 MMT.
- **Low yield per hectare:** The average rate of sugar recovery from the sugar cane is less than other sugar producing areas like Java, Hawaii, and Australia. For example, India's yield is only 64.5 tonnes/hectare as compared to 90 tonnes in Java and 121 tonnes in Hawaii.
- **Dependence on Monsoon:** Apart from irrigation equipped northern states, Sugarcane is largely grown in rainfed regions of central and southern India. So, a good monsoon becomes extremely important.
- **Regional imbalances in distribution:** Over half of sugar mills are located in Maharashtra and Uttar Pradesh and about 60 per cent of the production comes from these two states.
- **Monoculture of sugarcane:** lack of crop rotation in some areas, leads to depletion of nutrients in soil and adversely affect cane productivity.
- **Water intensive:** Irregularity in availability of water for irrigation especially in north India, adversely affecting the sucrose content in the crop.
- **Perishable nature of crop:** Post harvest deterioration in cane quality on account of staling and delayed crushing contributes to low sugar recovery.

- **Delays in payment to the cane farmers:** It leads to lack of financial resources for the next season. They have to borrow money from money lenders etc and are engulfed in **debt trap** which leads to suicide in extreme cases.
- **Co-operative Sector and Sugar mills:** There is a nexus between mill owners and politicians and many of the mills are owned by politician whose main agenda is maximizing profit. Cooperative sugar industry has been eroded by corruption. The structure of the sector lacks transparency and financial accountability.
- **High prices:** The cost of sugar production in India is one of the highest in the world. This is due to high sugarcane cost, uneconomic production process, inefficient technology and high taxes exercised by the state and the central governments.
- **Faulty government policy:** The sugar economy is a highly controlled one. Sugar mills were under compulsory licensing till 1998. There is a **Fair and Remunerative Price (FRP)** for sugarcane fixed by the Central Government and **State advised prices (SAP)** fixed by each State over and above the FRP.
- **Levy sugar:** Levy sugar is the 10% of production that every sugar mill mandatorily surrenders to the centre, at a price lower than the market price.
 - This enables the central government to get access to low cost sugar stocks for distribution through the Public Distribution System.
 - The centre saves a huge sum on account of this policy, the burden of which is borne by the sugar sector.
- **FRP and SAP issue:**
 - This FRP is a formula-linked cane price to encourage higher productivity. This FRP is what the mills would have to pay to the cane farmers.
 - But some states would like to fix a cane price over and above the FRP, which the mills would have to pay to the farmers. This price is called State Advised Price (SAP).
 - The problem with the State Advised Price is that it is generally politically motivated. Consequent to this, the Sugarcane became the most attractive crop to grow.
 - On the one hand, farmers increased the cultivation of sugarcane crops; while on the other hand, the mills were forced to pay higher prices.
 - For example, some States such as UP and TN have set SAPs higher than FRPs.
- **Faulty Trade Policy**
 - The Government imposes export and import restrictions on sugar without a clear cut policy.
 - When the sugar stock increases the government imposes import restrictions by increasing import duty and when the sugar stocks depletes the government imposes export restriction by increasing export duty.
 - The decision by the government leads to price mismatch between demand and the supply and creates confusion in the market.

Measures taken:

- **Ethanol Blending Program (EBP)**
 - Government has also proposed the Ethanol Blending Program
 - A major scheme worth more than Rs.4400 crore for increasing the ethanol capacity in the country for diversion of sugarcane for production of ethanol in surplus sugar season.
 - The Government will bear the interest subvention cost for this scheme.
 - The government has reduced Goods and Services tax (GST) on ethanol targeted for blending from 18 percent to 5 percent in July 2018.
- **National Policy on Biofuels 2018:**
 - The policy is aimed at taking forward the indicative target of achieving 20% blending of biofuels with fossil-based fuels by 2030. Government has also notified new National Policy on Bio-Fuels, 2018 under which sugarcane juice has been allowed for production of ethanol.
 - Further, the Government has fixed remunerative price of ethanol produced from C-Heavy molasses and B-Heavy molasses/sugarcane juice separately for supply under EBP during ensuing ethanol season 2018-19.
- **Advisory to Oil Market Companies (OMCs):** They have been advised to prioritize ethanol procurement based on the purity and give preference to ethanol made from 100 per cent sugarcane juice.
- **Minimum Indicative Export Quota (MIEQ):** Government has implemented an allocation of mill-wise **Minimum Indicative Export Quota (MIEQ)** of 20 LMT and financial assistance @Rs.5.50/quintal of cane crushed amounting to about Rs.1500 crore. This is done in view of the inventory levels with the sugar industry and to facilitate achievement of financial liquidity.
- **Sugar Development Fund :** It provides financial assistance to the sugar factories at concessional interest rates in accordance with Sugar Development Fund Act, 1982 and Sugar Development Fund Rules, 1983, for their developmental activities such as modernization and expansion of their capacity, Development of cane as well as utilization of their by-products like bagasse for cogeneration of power and molasses for production of ethanol, improving their revenue generation and viability.
- **Fair and remunerative price (FRP):**
 - The FRP is the minimum price that sugar mills have to pay to sugarcane farmers for procurement of sugarcane.
 - It is determined on basis of recommendations of Commission for Agricultural Costs and Prices (CACP) and after consultation with State Governments and other stakeholders.
- **State Advised Price:** Although the Central government decides the FRP the state governments can also set a State Advised price which a sugar mill has to pay to the farmers.
- **Other measures:**

- Extended working capital loans with interest subvention under Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU - 2014) and Soft loan scheme.

Way forward:

- **Rangarajan committee (2012)** gave recommendations on regulation of sugar industry. Its major recommendations are:
 - **Abolition of the quantitative controls** on export and import of sugar, these should be replaced by appropriate tariffs.
 - Committee recommended **no more outright bans** on sugar exports.
 - The central government has prescribed a **minimum radial distance** of 15 km between any two sugar mills, this criterion often causes virtual monopoly over a large area can give the mills power over farmers. The Committee recommended that the distance norm be reviewed.
 - **No restrictions on sale of by-products** and prices should be market determined. States should also undertake policy reform to allow mills to harness power generated from bagasse.
 - The Rangarajan Committee on the pricing of sugarcane had recommended 75 per cent of the sugar price to be given to farmers as cane price and advocated for abolishing SAP.
 - **Remove the regulations on release of non-levy sugar.** Removal of these controls will improve the financial health of the sugar mills. This, in turn, will lead to timely payments to farmers and a reduction in cane arrears.
- **Trade policy:** The government should make the trade policy more transparent so that uncertainties in sugar market are avoided.
- **Creating buffer:** The government should also create a larger buffer so that excess sugar can be stored safely.
- **Ethanol Blending Program:** The government should focus more on Ethanol blending program and try to harness its full potential.
- **Best practices:** The government should learn from the best practices of countries like Brazil. Brazil being the largest producer of sugarcane began deriving ethanol from sugar cane in 1970s under National Alcohol Program.
- **Hybrid approach:** CACP has also recommended a hybrid approach with simultaneous implementation of Revenue sharing formula, FRP of Sugar and Sugar Price Stabilization fund.

Taking the case of subsidies

Syllabus: Public Distribution System – Objectives, Functioning, Limitations, Revamping; Issues of Buffer Stocks and Food Security

In news: Recently centre has prescribed that the free power supply scheme should be replaced with the direct benefits transfer (DBT) in all the states.

More on news:

- The Centre has now prescribed that the free power supply scheme should be replaced with the direct benefits transfer (DBT) as a condition to allow States to increase their borrowing limit.
- Though, this is not the first time that the Union government has recommended DBT regarding electricity, but it has provided a time frame for implementing it.
- By December this year, the DBT should be introduced at least in one district of a State and from the next fiscal year, a full roll-out should be made.

Meaning of subsidy

- Subsidy is a discount offered by the Government of India to provide necessary products to people at affordable prices across the nation.
 - Subsidy is also identified as transfer of a certain amount of money from the Government to an entity that further sells subsidized products to people.
- Subsidy is a part of non-plan expenditure of the Government, in which the subsidy cost is much lower than the actual cost of production.

Direct vs Indirect Subsidies

- Direct subsidies are those that involve an actual payment of funds toward a particular individual, group or industry.
- Indirect subsidies are those that do not hold a predetermined monetary value or involve actual cash outlays.

Benefits of Subsidy

- **Daily necessities:** Daily household or necessary items related to food, education, agriculture and fuel comes at affordable rates.
- **Balance market failures:** Subsidies can be utilized to balance market failures to achieve economic productivity.
- **National growth:** Subsidized education helps in further contributing to the nation's GDP, as increased education leads to higher employment.
- **Lowens the burden:** Helps struggling market by lowering the burdens and further providing financial support for future ventures.
- **Empowering the vulnerable:** Subsidies has also helped in empowering women and poor people of the country by offering subsidies on healthcare, midday meal program and Mahatma Gandhi Employment Guarantee Act (MNREGA).

Subsidies are solution to a problem or are they themselves a problem?

- Subsidies aim to make necessities **affordable** to poor people through extension of consumer services.
- Subsidies prepare a **foundation of various economic sectors** in which private sector can participate later.
 - When economy is at lower stages of development, it is often unviable and unaffordable for private sector to step in production. This is mainly because

there are limited resources with private investors and there are informational externalities/uncertainties.

- In such case government do handholding by supporting private sector by extending subsidies and withdrawing them when private sector becomes competitive.
- Subsidies should be aimed at **specific development objectives**.
 - On achievement of these objectives' subsidies should be phased out. It is only then that subsidies can go well with an undistorted market economy.

But following issues have rendered subsidies to be a problem:

- Higher subsidy expenditure **pushes up fiscal and revenue deficits** as government starts spending more than it earns.
 - This fiscal deficit can be closed preferably by raising more revenue through new taxes (proactively) or by borrowing money.
- In a democracy, subsidy once extended becomes a **politically sensitive issue** and governments suffer huge political risk if they phase out such subsidies.
- If government is unable to borrow money or to raise taxes, it will have to print new currency to finance deficits, which **increases money supply** in the economy.
 - This creates **inflationary trends** in economy. Incoherent subsidy regime unintendedly does more harm than good for the cause it stands – socio-economic development.

Negative Implications of Power Subsidy

1. **Depleted groundwater** due to over extraction of groundwater and the issue of water-stress in India.
 - For example: Nearly 80% of groundwater reservoirs in Punjab and 60% in Haryana are over-exploited, a direct result of the irrigation and power subsidy.
2. **Massive waste of power** due to large unmetered connections.
3. **Financial burden** on state governments due to subsidies given to farmers including rich farmers.
4. **Deteriorating financial health** of the electricity distribution companies (DISCOMs).
 - There has been a sharp growth in electricity use in the agriculture sector, especially since the 1980s with consumption rising from 8% of total consumption in 1969 to 17% in 2016.
5. **Increased cross-subsidy burden** on industrial and commercial consumers which affect their total cost of production.
6. **Promotes unsustainable agriculture:** Subsidized electricity to farmers promotes growth of crops not suitable to agro-climatic zones like sugarcane, paddy which are water-intensive also.

Suggestions to Rationalize Farm Sector Power-Subsidies

1. **IEC** – Information, Education and communication (IEC) campaigns among farmers regarding judicious use of scarce resources.

2. **Metering** - Large number of unmetered connections for farm irrigation leads to unrestrained usage of electricity for irrigation leading to massive waste of power and groundwater.
3. **Promoting sustainable agriculture** - Disincentivizing water-intensive crops such as rice in areas where groundwater is rapidly depleting like Punjab and use of methods like drip-irrigation.

Steps to be taken

- **Rationalizing subsidies** - Subsidizing the cost of inputs is not going to end the problems of the marginal farmers of India.
 - Subsidies could be linked to the size of the farm-holding, rather than offering them to every other farmer.
- **Direct transfers** - Sometimes subsidies fail to solve the purpose they are introduced, as several times well-to-do sections of the society avail its benefits rather than people belonging to the poor sections of the society.
- **Capital Investment** - Slowly, the government should withdraw subsidies and possibly convert them to capital investments in the sector.
 - The impact of capital investment on both agricultural yield and poverty will be far higher than that of subsidies.
 - The promised investments in agriculture (Rs. 25-lakh crore over 5 years) can be made in building a national-level warehousing grid with smaller warehouses near the farm-gate
 - Setting up of agri-processing centres
 - providing assaying and grading machinery at mandis
- **Exports** - There is the need for long-term policies on export trade, for the government departments to engage with exporters on a regular basis. This can help keep farmers in position with the global demand/supply and price situations.
- **Technical committee** - There are talks about a technical committee with ICAR-NIAP as knowledge partner to work on building an agri-market intelligence system. The system will put out price and demand forecasts for various major foodgrains and price-sensitive horticulture crops.
- **Land** - The government should look at ways of aggregating the small land-holdings and help farmers draw benefit from farm mechanization.
- **Credit Linked Capital Subsidy Scheme (CLCSS)**: Credit Linked Capital Subsidy Scheme (CLCSS) is a Government initiated scheme under The Ministry of Micro, Small and Medium Enterprises (M/o MSME) for technology advancement of Small Scale Industries (SSIs) in both rural and urban areas.
 - Under this scheme 15% capital subsidy is offered to SSIs on loans up to Rs. 1 crore for the modernization of plant and machinery. Subsidies are also offered to MSMEs availing loans for technology upgradation.
 - The calculation of capital subsidy amount is based on the cost of acquired plant and machinery by the businesses.

Reforms in agriculture including subsidy rationalization is must for economic growth and fiscal consolidation and the DBT in power subsidy is a tool to achieve the same.

Incentivising Manufacturing

Syllabus: Changes in industrial policy and their effects on industrial growth.

In News: Recently, the Ministry of Electronics and Information Technology (MeitY) approved 16 firms in the mobile manufacturing sector for the Production Linked Incentive (PLI) scheme to transform India into a major mobile manufacturing hub.

What is PMP?

- **The PMP (phased manufacturing programme)** was implemented with an aim to improve value addition in the country and PLI comes on the back of it.
- **The PMP incentivised the manufacture of low value accessories** initially, and then moved on to the manufacture of higher value components.
- The PLI comes on the back of a phased manufacturing programme (PMP) that began in 2016-17 and was supposed to culminate in 2019-20.

Production Linked Incentive (PLI) scheme: It proposes a financial incentive to boost domestic manufacturing and attract large investments in the electronics value chain.

Key features of the scheme:

- The scheme shall extend an incentive of 4% to 6% on incremental sales (over base year) of goods manufactured in India and covered under target segments, to eligible companies, for a period of five (5) years with financial year (FY) 2019-20 considered as the base year for calculation of incentives.
- The Scheme will be implemented through a Nodal Agency which shall act as a Project Management Agency (PMA) and be responsible for providing secretarial, managerial and implementation support and carrying out other responsibilities as assigned by MeitY from time to time.
- According to the scheme, companies that make mobile phones which sell for Rs 15,000 or more will get an incentive of up to 6 per cent on incremental sales of all such mobile phones made in India.
- In the same category, companies which are owned by Indian nationals and make such mobile phones, the incentive has been kept at Rs 200 crore for the next four years.



What is the status of imports in India?

- **Analysis of factory-level production data from the Annual Survey of Industries (ASI)** shows that value addition for surveyed firms ranged from 1.6% to 17.4%, with most of the firms being below 10%. More than 85% of the inputs were imported for the majority of the surveyed firms in 2017-18.
- **UN data for India, China, Vietnam, Korea and Singapore** (2017-2019), show that except for India, all countries exported more mobile phone parts than imports.
- India's imports of mobile phone parts were 25 times the exports in 2019.
- **The PMP policy increased the value of domestic production** while improvement in local value addition remains a work-in-progress.

Why the shift from China is unlikely?

- India produced around 29 crore units of mobile phones for the year 2018-19; 94% of these were sold in the domestic market and the rest was exported. This means that much of the production and sales under the PLI policy will have to be for the export market.
- A study by **Ernst & Young for the India Cellular & Electronics Association** showed that if the cost of production of a mobile phone is say 100 then the effective cost of manufacturing mobile phone in China is 79.55, Vietnam is 89.05, and India is (including PLI), 92.51.
- It may be early to expect a major chunk of mobile manufacturing to shift from China to India as incentives under the PLI policy may not turn out to be a game-changing move.
- The PLI policy **does not strengthen our current export competitiveness** in mobile phones; and markets with higher average selling price have lower volumes.
- In September 2019, Chinese Taipei contested the raise in tariffs under the PMP. If the PMP is found to be **World Trade Organization (WTO) non-compliant**, then we may be flooded with imports of mobile phones which might make the local assembly of mobile phones unattractive.

Challenges faced by domestic manufacturers:

- **Less presence of domestic firm:** Domestic firms have been nearly wiped out from the Indian market and thus their ability to take advantage of the PLI policy and grab a large domestic market share seems difficult.
- **Cheap imported material:** Domestic firms may have the route of exporting cheaper mobile phones to other low-income countries but their performance has not been promising.
- For example, among the chosen domestic firms, Lava International reported exports of ₹324 crore in 2018, while Optimus Electronics exported ₹83 crore in 2018 and ₹4 lakh in 2019.
- **Low Level of Participation in Global Value Chains (GVCs):** India's participation in GVCs has been low compared to the major exporting nations in East and Southeast Asia. Export

growth of capital-intensive products from China has been mainly driven by its participation in the GVCs.

- **Lack of integration:** China's export promotion policies since the 1990s have relied heavily on a strategy of integrating its domestic industries within the GVCs.
- **Lack of competitiveness:** India's mobile phone exports grew from \$1.6 billion in 2018-19 to \$3.8 billion in 2019-20, but per unit value declined from \$91.1 to \$87, respectively.
- **Missing Profits:** Despite the impressive growth of electronic production in India, the net value added by production units is very low.
- **Challenges in Set-up of Foundries:** Many industry experts also cite the lack of a foundry as contributing to low R&D in this sector in India, which results in poor talent retention and eventually 'brain drain'.
- **Low R & D:** Domestic players have also shown low interest due to their inability to compete with tech giants in research and development (R&D) and investment.

Steps taken:

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

Way forward:

- **Focus on supply chain colocation:** Foreign firms chosen under the PLI policy should be encouraged to co-locate their supply ecosystems in the country as the assemblers and component manufacturers move together.

- The six component firms that have been given approval under the '**specified electronic components segment**' do not complete the mobile manufacturing ecosystem.
- For example, literature shows that when Samsung set up shop in Vietnam, it relied heavily on its Korean suppliers which co-located with it to produce in-between inputs, so much so that 63 among Samsung's 67 suppliers then were foreign.
- Even though Samsung is invested hugely in India, it has not co-located its supply chain in the country.
- **Focus on value of production:**
 - The new PLI policy offers an incentive subject to brinks of incremental investment and sales of manufactured goods; these **thresholds vary for foreign and domestic mobile firms**.
 - **However, focus remains on increasing value of domestic production, and not local value addition.** If implemented, an additional capacity of 60 crore mobile phones per year may be onstream at the end of the PLI.
- **Profiting from Anti-Chinese Sentiments:** USA's allegations on China for worsening Covid-19 and India-China conflict are golden opportunity for India to act fastly on it and attract outgoing investment.

The prospects of Gene Editing

Syllabus: Science and Technology- Developments and their Applications and Effects

In news: India requires guidelines for gene-editing research. The 2020 Nobel Prize in Chemistry was awarded to Emmanuelle Charpentier and Jennifer A. Doudna for the development of CRISPR-Cas9 gene-editing technology.

About Gene Editing: It is a group of technologies that give scientists the ability to change an organism's DNA (Deoxyribonucleic acid) by allowing genetic material to be added, removed, or altered at particular locations.

Benefits of Gene editing tools:

- Gene editing tools can **remove a faulty gene** at embryonic stage.
 - In 2017, American biologists used Crispr to **repair a genetic mutation** that could cause a deadly heart condition.
- Human genome editing can be used to **treat many human diseases & genetic disorders** like HIV/AIDS, haemophilia etc.
 - Recently China used a variation of Crispr to **correct Marfan Syndrome**, an inherited disorder that affects connective tissue.
- It could help in the development of **highly efficient & cost-effective next generation** antibiotics (based on bacteriophage viruses).
- **Therapeutic cloning:** Cloning can be designed as a therapy for a disease. In therapeutic cloning, the nucleus of a cell, typically a skin cell, is inserted into a fertilized egg whose

nucleus has been removed. The nucleated egg begins to divide repeatedly to form a blastocyst.

- **In healthcare-** The technology has enabled scientists to edit human DNA (Deoxyribonucleic acid) in a dish and early-stage clinical trials are being attempted to use the tool to treat a few diseases, including inherited disorders/diseases and some type of cancer.
- **Gene editing in agriculture:** It is being tried out in agriculture primarily to increase plant yield, quality, disease resistance, herbicide resistance and domestication of wild species.
 - The potential to edit genes using this method has been used to create many crop varieties with improved agronomic performance
- It could bolster **disease resistance in humans & increase life span.**
- It has the potential to **slow down the spread of diseases** by eliminating its means of transmission.
 - E.g., Gene editing can be used to **introduce sterile mosquitoes** into the environment.

What are some of the other developments with regard to gene editing?

- He Jiankui edited genes in human embryos using the CRISPR-Cas9 system that were subsequently implanted and resulted in **the birth of twin girls which left the world alarmed in 2018.**
- Chinese scientists claimed this was **apparently to prevent them from contracting HIV**, and the incident was known as the case of the first gene-edited babies of the world.
- **The World Health Organization** formed a panel of gene-editing experts which said “a central registry of all human genome editing research was needed in order to create an open and transparent database of ongoing work”.

Issues with gene editing:

- **Inequality based on wealth:** The economic disparity between the rich and the poor will inevitably increase because of genetic editing. This first emerges from the sheer cost to edit the genes.
 - For example, using CRISPR-Cas9 to fix a single point mutation costs \$15,000 at Yale, and that is before the cost of genotyping, which can cost up to \$2,000.
- **Balance Risks & Benefits:** Due to the possibility of **off-target effects** (edits in the wrong place creating properties different from those that were intended) and **Mosaicism** (when some cells carry the edit but others do not, leading to presence of two or more populations of cells), safety is of primary concern.
- **Potential for eugenics:** The study of genetics has always had a strong connection to eugenics. There have been several significant eugenic movements in recent history, including in Nazi Germany, as well as in the United States.
 - The very possibility of eugenics on a smaller scale through genetic editing could make the use of larger scale, more dangerous eugenics accepted in society.

- As the inevitable drive for the “perfect” child progresses if genetic editing becomes common, this designer baby will meet the societal standards of perfection.
- By giving people the ability to select traits that go against genetic and physical differences, people could inevitably be allowing the intolerance of the disparities.
- **Confusion over the government’s role:** Another area of possible controversy is the government’s role in the regulation of the technology.
 - The government should not logically be able to regulate them any more than the government controls the ability of wealthier people to pay for expensive trainers to improve their fitness or expensive tutors to help their children get admitted into top tier schools.
- **Technical barriers:** Even though CRISPR improved upon older genome editing technologies, it is not perfect.
 - For example, sometimes genome editing tools cut in the wrong spot. Scientists are not yet sure how these errors might affect patients.
- **Health issues:** Studies have shown that edited cells can lack a cancer suppressing protein which can raise new fatal health concerns in future.
- **Ethical concerns:** Bioethicists fear abuse of gene editing, not just by misguided governments hoping to create a ‘superior’ race, but also by the private sector preying on a parent’s desire to create a perfect child. This would create genetic inequality.
- **Agriculture Genetic Modification:** There are concerns over the inadvertent effects, such as the creation of food that can cause an allergic reaction.
- **Germline Modification:** Germline Editing means deliberately changing the genes passed on to children and future generations – in other words, creating genetically modified people. It is the most of the ethical discussions related to genome editing center around human germline editing. This is because changes made in the germline would be passed down to future generations.

Laws in India

- **“Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells, 1989”** notified under the Environment Protection Act, 1986, regulate genetically modified organisms.
- **Environment protection act and the National Ethical Guidelines for Biomedical and Health Research** involving human participants, 2017, by the Indian Council of Medical Research (ICMR), along with Biomedical and Health Research Regulation Bill involves regulation of the gene-editing process.

Is it legal to use Gene editing technique?

- There is a general consensus in the scientific communities that the CRISPR–Cas9 gene-editing technique should not be used clinically in embryos.
- There is also consensus that gene editing can be potentially used only to prevent serious genetic disorders that have no alternative treatment.

- In the absence of any clinical trial data as well as consensus to use this tool to prevent HIV infection, performing it on babies as a form of medical intervention is unethical.

CRISPR-Cas9

It is a Gene editing technique which is short for “Clustered regularly interspaced short palindromic repeats and CRISPR-associated protein 9”.

- The CRISPR-Cas9 gene editing tool has two components — a short RNA (Ribonucleic acid) sequence that can bind to a specific target of the DNA and the Cas9 enzyme which acts like a molecular scissor to cut the DNA.
- To edit a gene of interest, the short RNA sequence (gRNA) that perfectly matches with the DNA sequence that has to be edited is introduced.
- Once it binds to the DNA, the Cas9 enzyme cuts the DNA (like scissors) at the targeted location where the RNA sequence is bound. Once the DNA is cut, the natural DNA repair mechanism is utilized to add or remove genetic material or make changes to the DNA.

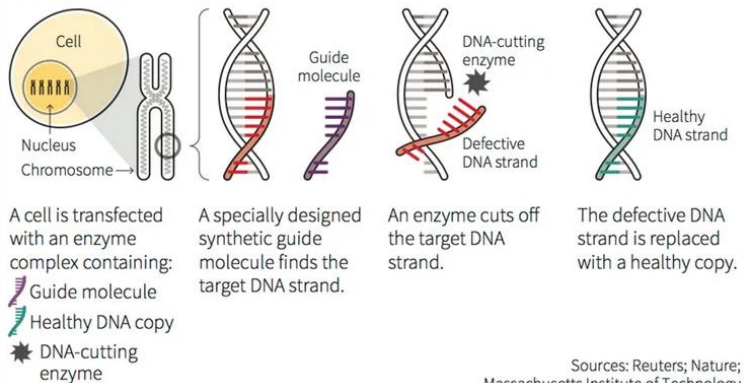
Uses of CRISPR

- **Pet breeding:** Genetic testing services to test the health and breed of cats and dogs have surged in the last few years, and CRISPR technology might soon follow.

DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's “find and replace” function.

HOW THE TECHNIQUE WORKS



- The gene editing tool has been proposed as a way of removing the genetic diseases that abound in pure breed dogs.
 - A great example is Dalmatians, which often carry a genetic mutation that makes them prone to suffer from bladder stones. Though the animals will have to go through FDA review before they can be sold.
- **Allergy-free foods:** With CRISPR, it could be possible to make milk, eggs or peanuts that are safe for everyone to eat according to Tim Doran, researcher at Australia's CSIRO.
 - Another research group, in the Netherlands, is using CRISPR-Cas9 to modify the DNA of wheat to remove gluten, making it suitable for celiacs.
 - However, the EU's strict regulation on using CRISPR gene editing in plants might make it difficult for this project to see the light, at least in Europe.

- **DNA ‘tape recorders’:** Scientists at Harvard have used CRISPR to create a molecular tool called CAMERA. The tool acts as a recorder of events in the lifetime of a cell, such as exposure to antibiotics, nutrients, viruses and light.
 - CRISPR was programmed into cells so that a specific DNA edit was made only in the presence of the signal. By counting the rate of edits, they can even determine the duration and strength of the trigger.
 - The system works in both bacterial and human cells, and it is possible to make it record multiple kinds of signals simultaneously.
 - These developments could help scientists detect environmental pollutants in the field or track the signals that determine whether stem cells grow to be neurons, muscle cells or another cell type.
- **Greener fuels:** Gene editing could improve the production of biofuels by algae. Using CRISPR-Cas9, the company Synthetic Genomics has created strains of algae that produce twice as much fat, which is then used to produce biodiesel.
 - The company is now working with the oil company ExxonMobil to meet the target of producing 10,000 barrels of algae biofuel per day by 2025.
- **Eradicating pests:** CRISPR could help us control the numbers of animal species that transmit infectious diseases or that are invasive in a particular ecosystem.
 - The gene editing technology can be used to create ‘gene drives’ that ensure a genetic modification will be inherited by all the offspring, spreading throughout an animal population over several generations.
 - Researchers at Imperial College London, UK, proved that this technology could be used against the species of mosquito that is responsible for the spread of malaria.
- **De-extinction:** Using CRISPR technology, researchers plan to introduce genes from the passenger pigeons into its modern-day relative; the band tail pigeon.
 - The hybrids will be bred for several generations until the offspring DNA matches that of the extinct species. The first generation of ‘revived’ pigeons is expected to hatch in 2022.

Controversy surrounding the Nobel Prize to CRISPR-Cas 9 technology

- **The two scientists, who were awarded the Nobel Prize founded the use of CRISPR** (Clustered Regularly Interspaced Short Palindromic Repeats) – Cas9 (CRISPR-associated protein 9) system as a gene editing tool.
- Eight years since its discovery, the method has already made a **significant impact in biology, medicine, and agriculture.**
- **The exclusion of Siksnys from this year’s Nobel** is in the limelight especially when the Nobel Prize can be given to three individuals.
- Discovery on the use of CRISPR as a gene-editing tool was by a Lithuanian biochemist, Virginijus Šikšnys, in 2012 and he showed that Cas9 could cut purified DNA in a test tube.

- **The Nobel committee recognised Charpentier and Doudna** as the sole discoverers for proving the ability of CRISPR-Cas9 to function as a gene-editing tool.
- Siksnys along with Charpentier and Doudna shared another coveted award, the Kavli Prize for Nanoscience, in 2018.
- Other notable early contributors to the field that many believe deserve mention are **Feng Zhang of Broad Institute of MIT-Harvard and George Church of Harvard**.
- **Dana Carroll, who developed the system of Zinc-finger nucleases** in which CRISPR can slice DNA at specific sites, is another notable exclusion from this year's chemistry prize.

Way forward-

- Experiments and tests to validate the use of gene editing must be subjected to appropriate scrutiny by the regulators, and their use must be controlled to prevent commercial misuse.
- **Governance of Gene Editing:** Given the safety, security, and ethical implications of gene editing, there is a need to govern gene editing applications.
- Enact law to ban germline editing and put out guidelines for conducting gene-editing research giving rise to modified organisms.

Breathing polluted air: A recurring issue

Syllabus: Conservation, Environmental Pollution and Degradation.

In news: The newly released the State of Global Air 2020 report shows that India recorded the highest increase in air pollution related deaths and infant mortality.

Key highlights of the report:

- The highest annual average exposures were seen in Asia, Africa, and the Middle East.
- More than 116,000 infants in India died within a month of birth in 2019 due to air pollution.
- Globally, 476,000 infants died in their first month of life in 2019 from health effects associated with air pollution exposure.
- The highest annual average exposures were seen in Asia, Africa, and the Middle East.
- More than 116,000 infants in India died within a month of birth in 2019 due to air pollution.
- Globally, 476,000 infants died in their first month of life in 2019 from health effects associated with air pollution exposure.

What is the state of air pollution in India?

The State of Global Air that is a collaborative study of Health Effect Institute and Institute for Health Metrics and Evaluation of Global Burden of Disease Project has presented that:

- **PM 2.5 Concentration:** India recorded the highest annual average PM 2.5 concentration exposure in 2019. India was followed by Nepal, Niger, Qatar and Nigeria.
- **Household Air Pollution:** India has managed to reduce the number of people exposed to household air pollution to 61% from 73%.

- **Ozone(O3) Exposure:** Among the 20 most populous countries, India recorded the highest increase (17%) in O3 concentrations in the past ten years.
- **Air pollution accounts for 20 per cent of newborn deaths** worldwide, 24 per cent of these infant deaths occur in India which is the highest. This defies the principles of inter-generational justice.
- **The State of Global Air that is a collaborative study** of Health Effect Institute and Institute for Health Metrics and Evaluation of Global Burden of Disease Project has presented that:
 - Out of the total tally of 6,670,000 particulate matter (PM) 2.5-attributable deaths globally, 980,000 deaths occurred in India which was a 61 per cent increase since 2010.
 - **The other silent killer sidling up in India is ozone:** the country has recorded an 84 per cent increase in ozone-related deaths since 2010.

CAUSES

Role of Farm fires

- **Stubble burning which is a way to get rid of paddy stubble quickly** and at a low cost, gained widespread acceptance when governments of Punjab and Haryana passed laws delaying the sowing of paddy.
 - The aim of passing such laws was to conserve groundwater as the new sowing cycle would coincide with monsoons and less water would be extracted.
 - This left very little time for farmers to harvest paddy, clear fields and sow wheat for the next cycle.
- The paddy straw and stalks have high silica content and are not used to feed livestock.
- **The alternatives like the happy seeder machine** which helps covering the residue, are seen as unavailable, and money and time consuming by smaller farmers.
- **A 2015 source-apportionment study on Delhi's air pollution conducted by IIT-Kanpur** also states that 17-26% of all particulate matter in Delhi in winters is because of biomass burning.
- **The System of Air Quality and Weather Forecasting and Research (SAFAR)** has developed a system to calculate the contribution of stubble burning to Delhi's pollution.
- Last year, during peak stubble burning incidents, **its contribution rose to 40%.**

The other big sources of pollution:

- **Mining operations:** During the mining process dust and chemicals are released in the air causing massive air pollution.
- **Dust and vehicular pollution** are the two biggest causes of dipping air quality in Delhi in winters.
 - **Dust pollution contributes to 56% of PM 10 and the PM2.5 load at 59 t/d**, the top contributors being road 38 % of PM 2.5 concentration, the IIT Kanpur study said.

- According to the IIT Kanpur study, **20 % of PM 2.5 in winters comes from vehicular pollution.**
- **Dust Storm:** They are one of the biggest contributors to air pollution and can carry harmful particles that increase the spread of diseases across the globe.
- For eg- Virus spores in the ground are blown in the air and spread through acid rain or urban smog.
- **Deforestation:** Deforestation affects the atmosphere in several ways as forests act as sinks for carbon dioxide through a process called carbon sequestration.
- **Forest Fire:** Wild fires cause air pollution by releasing particulate matter into the air. These particles can become lodged in your respiratory system, causing irritation to tissues.

EFFECTS

- **Global warming:** Increase in greenhouse gas emission like CO₂ is slowly increasing the mean global temperature, causing climate change. It is bound to produce a variety of different effects on the natural world, including sea level rise, saline water intrusion etc.
- **Effect on Wildlife:** Toxic chemicals present in the air can force wildlife species to move to new place and change their habitat.
- **Economic loss:** Economic loss due to climate-related disasters in proportion to GDP is far greater in lower-income economies than higher-income countries.
 - As per a report by The Lancet, financial cost from pollution-related death, sickness and welfare is about 6.2% of the global economy.
- **Eutrophication of water-bodies:** Nitrogen emissions from transport and power plants introduce excessive nitrogen loads into freshwater resources. This leads to permanently raised nutrient content and consequent eutrophication.
- **Acid Rain:** the combustion of fossil fuels emits nitric oxide and sulphur dioxide, also acidic substances, into the atmosphere which react with airborne water molecules and decrease rainwater pH, leading to the formation of acid rain. Acid rain has following negative impacts:
 - Acidification of water bodies, making them inhospitable for fish.
 - Damage to crops, natural vegetation
 - Changes of soil chemistry, which affects plant metabolism and nutrient cycling
 - Built environment: Acid rain has negative impact on monuments, buildings.
Example: Change in colour of Taj Mahal to yellowy brown
- **COVID-19 and air pollution:** Exposure to air pollution can compromise immune defence, making people more prone to respiratory and other infections.
- **Mortality:** Air pollution are known to create several respiratory and heart conditions along with other life-threatening conditions to the body.
 - Pollution was responsible for 9 million deaths in 2015 worldwide.
 - One in six people die due to pollution globally and most of them occur in developing countries like India.

Why does air pollution rise in October each year in Delhi?

- Air pollution in Delhi and the whole of the Indo Gangetic Plains is a complex phenomenon that is dependent on a variety of factors. The first and foremost is **the input of pollutants, followed by weather and local conditions.**
- Once monsoon season ends, **the main direction of winds changes to north westerly from easterly winds.**
- According to a **study conducted by scientists at the National Physical Laboratory**, 72 per cent of Delhi's wind in winters comes from the northwest, while the remaining 28 per cent comes from the Indo-Gangetic plains.
- **The dip in temperature is also behind the increased pollution levels.** The inversion height which is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere is lowered and concentration of pollutants in the air increases.
- **Wind speed dips in winters which are responsible for dispersing pollutants.** AQI dips even more when factors such as farm fires and dust storms are added to the already high base pollution levels in the city.

Steps Taken to combat air pollution

- **Addressing vehicular pollution:** The effort to reduce vehicular pollution, which experts say is more harmful as it is released at breathing level, the following has been done:
 - The introduction of **BS VI fuel**
 - In BS-VI fuel, the volume of PM 2.5 ranges from 20 to 40 micrograms per cubic metre whereas in BS-IV fuel it is up to 120 micrograms per cubic metre.
 - BS-VI fuel will bring down sulphur content by 5 times from the current BS-IV levels. It has 10 ppm of sulphur as against 50 ppm in BS-IV.
 - Push for electric vehicles
 - Odd-Even as an emergency measure
- **National Clean Air Programme:** It aims to meet prescribed annual average ambient standards at all locations in the country in a stipulated timeframe (proposes 20-30% reduction of air pollution by 2024). It calls for:
 - Augmentation of existing air quality monitoring network by increasing number of existing manual and continuous monitoring stations,
 - Introducing rural monitoring stations,
 - Identifying alternative technology for real-time monitoring network
 - Augmenting capabilities of existing monitoring stations to measure PM2.5 concentration
 - National-level emission inventory
- **Launch of National Air Quality index (AQI):**
 - The AQI classifies air quality of a day considering criteria pollutants through colour codes and air quality descriptor. Further, it also links air quality with likely human health impacts.

- The index measures eight major pollutants, namely, particulate matter (PM 10 and PM 2.5), nitrogen dioxide, sulphur dioxide, ozone, carbon monoxide, ammonia and lead.
- **Measures to curb indoor air pollution:** The government launched Pradhan Mantri Ujjwala Yojna to replace unclean cooking fuels used in the most underprivileged households with clean and more efficient LPG (Liquefied Petroleum Gas). A major objective of the scheme is to ensure smoke-free houses and thus curb indoor air pollution.
- **Graded Response Action Plan (GRAP):** GRAP includes the measures which will be taken by different government agencies to prevent worsening of Air Quality of Delhi-NCR (National Capital Region) and prevent PM10 and PM2.5 levels to go beyond 'moderate' national Air Quality Index (AQI) category.
- **Centre-run System of Air Quality and Weather Forecasting and Research (SAFAR):** It is a national initiative introduced by the Ministry of Earth Sciences (MoES) to measure the air quality of a metropolitan city, by measuring the overall pollution level and the location-specific air quality of the city.
- **GreenCo Rating System:** To facilitate Indian industry make a substantial improvement in their environmental performance thereby saving both natural and financial resources.

The steps to be taken for green recovery

- **The National Clean Air Programme should improve legally** due multi-sector action across regions to clean up all air shelters.
- **Deeper sectoral reforms are required** to clean up emissions from vehicles, power plants, industries and local sources like construction and waste.
- Effective intervention can lead to verifiable improvement in health outcome as this is evident in the reduction in household pollution exposure from 54 per cent to 36 percent due to **improved access to clean fuels in India.**
- **Carbon neutrality:** It refers to achieving net zero **carbon** dioxide emissions by balancing **carbon** dioxide emissions with removal (often through **carbon** offsetting) or simply eliminating **carbon** dioxide emissions altogether (the transition to the "post-**carbon** economy").

Gaining the maximum out of coal

Syllabus- GS 3- Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.

In News- Centre has allowed commercial mining under its Atmanirbhar Bharat package, with the aim of making India among the biggest exporters of the dry fuel.

Commercial coal mining: Measures under Atmanirbhar Bharat

- **Opening of an Exploration-cum-production regime** for partially explored blocks.
 - Earlier only auction of fully explored coal blocks was permitted, post reforms even partially explored blocks will be auctioned.

- Private sector participation in exploration has also been allowed.
- **Entry Norms** for the sector will be liberalized and nearly 50 blocks will be offered immediately to all participants. Also, there will be no eligibility conditions for new entrants, only an upfront payment with a ceiling.
- **Changing partnership pattern with private sector** to revenue sharing mechanism from the regime of fixed Rupee/tonne.
 - Earlier, only captive consumers with end use ownership could bid for a coal block. Post these reforms, any party can bid for a coal block and sell in the open market.

The advantages accruing from this changed regulatory regime

- **Expands the pool of Potential bidders-** This will lead to better competition during auctions thus fetching better revenues for the government.
 - **Foreign Direct Investment-** The move will promote FDI in the sector.
- **Fixed royalty-** Previously, the floor price was a fixed royalty of ₹150 per tonne, and bidders contested by bidding upwards of this. This time around, the floor price is fixed at 4% of the annual revenue realized from the coal mine.
 - This change from fixed royalty to variable royalty gives miners protection from fluctuations in prices.
- **Import Substitution-** The move will boost both production and mining efficiency besides substituting import of coal worth Rs 30,000 crore.
- **Other significance and benefits**
 - **Reduced cost to customer:** Higher production and surplus availability of coal, may reduce the cost of electricity, as currently coal-fired plants generate about 70 per cent of India's electricity.
 - **Reduce imports:** Involvement of private players and investment by them will help meet domestic coal requirement and save forex reserve by reducing imports.
 - **Economic growth:** Commercial mining will create jobs, attract capital investment and allowing FDI in coal mining industry which will facilitate adoption of new technology.

The challenges

1. **Underwhelming response-** No bids have been received for 15 of the 38 coal blocks that are up for auction, continuing the trend of tepid participation.
 - a. None of the big foreign miners like BHP, Glencore and Peabody are participating, and domestic companies dominate the list of bidders.
2. **Lower royalty revenue-** Muted demand for coal due to an economic slump means that auction prices may be depressed. States are already complaining about a possible drop in royalty revenue.

A brief History of Coal Sector in India

- Coal sector was Nationalised in 1973 which meant that domestic coal could be mined only by public sector companies.
- While State-owned coal companies improved production, safety and prioritised employee welfare, the country's coal demand continued to grow at a very faster rate and often neglected modernization of mining technologies
- Post liberalisation reforms in 1993, the government decided to **allocate coal mines** to various players for captive consumption (in captive mining coal is taken out by a company for its own use and it won't be able to sell it in the market).
- Despite private sector participation in a restricted manner, state run Coal India Ltd continued to dominate the market (but with inefficiency)
- During the high growth years of 2000s the increasing demand of Coal could not be fulfilled by the state run Coal India Ltd., leading to higher demand-supply gap.
- **Increased imports:** Demand Supply gap, procedural delays, environmental clearances led to increase in imports – the CAGR of coal import from 2009-10 to 2013-14 was 23%
- **Coal Auction Scam:** The CAG report followed by the Supreme Court verdict in 2014 resulted into cancellation of allocation near all coal mines allocated after 1993.

Post 2014:

Coal Mines (Special Provisions) Act, 2015. enabled allocation of coal mines through transparent auctions

3. **Federal Challenges-** In a writ petition to the SC, Jharkhand has said the Centre's decision to commence commercial mining process flouts Schedule-V of the Indian Constitution, which refers to the 'scheduled areas' falling under the state government.
 - a. The suit argued that depressed demand for coal due to the ongoing economic slowdown would lead to lower prices accruing to the state.
4. **Monopoly-** The Adani Group, which includes its four subsidiaries, accounts for nearly one-sixth of all bids submitted and has bid for 11 of the 23 mines up for auction, if all Adani Group companies secure their respective blocks, a significant number of new mines will be under the ambit of one conglomerate.
5. **Climatic Concerns-** When countries across the world are moving away from fossil fuel resources this step to enhance Coal production is criticized by environmentalists.
6. **Health Concerns-** Coal burning releases Carbon dioxide, particulate matter, sulphur dioxide, nitrogen oxide and mercury- thus damaging the health of many people around the region.
7. **Environmental Challenges-** One of the proposed auctions of a mine site is near Maharashtra's Tadoba- Andhari Tiger Reserve. The State government has raised concerns that mining at the site can lead to destruction of wildlife corridors.
8. **Rise in finances to fossil fuel industry:** After the Paris Agreement of 2015, where countries agreed to try to limit average global warming to well below 2-degree Celsius, global banks continue to finance the fossil fuel industry.

- a. Finances has been increasing to fossil fuel sub-sectors such as oil from tar sands, Arctic oil and gas etc. For example, coal power financing led by Chinese banks.
9. **Dominance of Coal India:** While reforms are aimed at ending the monopoly of Coal India Ltd., that's unlikely to happen in the near future. The current commercial coal mining regime will find it difficult to compete with Coal India. As the major consumer of coal in India (thermal power plants and steel sector) are in long term purchase agreements with Coal India.
10. **Issue with Non-washing of Coal:** Doing away with the regulation requiring power plants to use "washed" coal will have huge environmental and economic costs.
11. **Issue of viability:** In the era of intense competition from renewables, the rising NPAs of thermal power plants (TPPs) and a massive global withdrawal from fossil fuel for climate and environmental reasons poses a challenge of viability for commercialising coal.

Types of coal found in India:

Types of coal on the basis of carbon content	Types of coal on the basis of a time period
Anthracite: It is the highest grade of coal containing a high percentage of 80 to 95% carbon content. It is hard and brittle. It is found in smaller quantities in regions of Jammu and Kashmir.	Gondwana coal: Around 98% of India's total coal reserves are from Gondwana times. This coal was formed about 250 million years ago.
Bituminous: It is a medium grade of coal having high heating capacity and carries 60 to 80% of carbon content and a low level of moisture content. It is the most commonly used type of coal for electricity generation in India. Most bituminous coal is found in Jharkhand, Odisha, West Bengal, Chhattisgarh, and Madhya Pradesh.	Tertiary coal: It is of younger age. It was formed from 15 to 60 million years ago.
Lignite: It is the lowest grade coal with the least carbon content. It carries 40 to 55% carbon content. It is found in the regions of Rajasthan, Tamil Nadu, and Jammu & Kashmir.	
Peat: It has less than 40% carbon content. It is in the first stage of transformation from wood to coal. It has low calorific value and burns like wood.	

Various issues associated with coal mining in India:

1. **Uneven coal distribution:** Coal distribution is highly uneven throughout India. Most of the coal deposits occur in the north-eastern part of the Indian peninsula. Other parts of the country either have no coal deposits or limited reserves of poor-quality coal.

2. **Poor transportation:** Most coal lies in inaccessible areas of the country. Hence, transporting it to the location of its use posed additional challenges. Though trains are the most economical way of transporting coal, a large number of mines are not connected to a rail network. Thus, coal has to bear a very high cost of transportation from the mines to the consuming centres.
3. **Manual labour:** The coal mining techniques are old and out dated and most of the work is done through manual labour. This leads to high production costs in India. The burning of coal in factories and thermal plants releases many toxic gases which are harmful for labour. For example, the recent collapse in the coal mine of Meghalaya led to the death of 11 workers.
4. **Delays in receiving approval and clearances:** Environment and forest clearance are extremely cumbersome, involving numerous layers of bureaucracy. The process of seeking clearances is a long-drawn process involving central and state ministries, and sometimes also lack clarity. This causes significant delays in production from the allotted blocks.
5. **Poor quality of captive blocks offered to private players:** The blocks offered to private players for captive mining are of poor quality and are generally not good. The blocks are often located in remote and undeveloped areas, which have challenging geographies. Sometimes the blocks are not divided scientifically.
6. **Opaque & flawed policies:** The process of allocation of captive coal blocks has been a source of controversies in the sector. This induced subjectivity in the process of allocation. There is lack of accountability and transparency, weak planning and inter-agency coordination. The recent coal-gate scam was the outcome of such opaqueness.

The steps to be taken

- **Transparency:** Currently, it is not easy to obtain data or information regarding many aspects of the coal sector. This makes it difficult for citizens to demand accountability from the sector. Therefore, complete transparency in the form of regular publication of information related to all aspects of the sector is needed. This would help in improving accountability.
- **Better policies:** It is important to increase the level of public participation and inputs in decision making. All policies must be published in draft form and must be finalised after comments are invited from citizens and the feedback is incorporated.
- **Local involvement:** Local citizens must be involved in coal mining related activities. Before the mine starts, there should be meaningful public hearing processes regarding environmental and social impacts, and associated compensation mechanisms. During the mine's operation, local citizens can help to oversee the operations and ensure its compliance to existing norms.
- **Rehabilitation:** Innovative approaches such as long-term lease of land, offering equity should be tried in rehabilitation processes. Proper compensation must be ensured to the displaced people.

- **Strengthening Institutions:** The capacity of the relevant institutions must be enhanced. Plans must be developed to increase capacities of coal industry. This would help in improving the planning, operations and oversight of the sector.

What do you mean by Divestment movement in Fossil fuels?

- Divestment is the process by which money put into stocks and bonds of certain companies is withdrawn. A divestment is the opposite of an investment.
- For example, recently Goldman Sachs announced that it would no longer finance new oil drilling in the Arctic National Wildlife Refuge and coal mines such as mountain-top mining
- In this case, divestment has been directed against companies that extract, refine, sell and make profits from fossil fuels.
- The purpose is to restrict fossil fuel companies' ability to function to limit their impact on climate change.
- As of 2019, it is estimated that more than \$11 trillion in assets has been committed to divestment from fossil fuels.

The way forward

- India's contribution to the stock of greenhouse gases is less than two tonnes of CO₂/capita.
- Yet, with the costs of production and storage of renewables falling, policymakers should utilise this opportunity and foresee to make a just transition away from coal in the near future.
- This process will be complex and necessarily involve many sectors and activities including land restoration, local jobs, and timely transfer of storage technologies for renewable energy, apart from dealing with entrenched vested and political interests.
- India is taking many steps to gradually reduce its dependence on coal, though coal will remain an important part of the energy resource for the short and medium term. Thus, it is critical to address the challenges of the coal sector.
- As the new auctions usher in a new regime in India's complex history of coal mining, the full implications on both production and revenues realized will be keenly watched.
 - Cross-subsidy should also be rationalised to levels at which discoms can still hold on to large energy users.
- The success of this new policy will depend on incorporating lessons from the previous auctions, and deregulating it fully to allow efficiency and competition in the primary energy sector.

Urban Floods: Inundated Urban Areas

Syllabus: Disaster Management

In News: Deep Depression BOB 02 (also called 2020 Hyderabad Cyclone) was a weak tropical cyclone that caused extensive damage and loss of life because of flash flooding in Hyderabad, India in October 2020.

What is urban flooding?

- Urban flooding is the inundation of land or property in a built environment, particularly in more densely populated areas, caused by rainfall overwhelming the capacity of drainage systems, such as storm sewers.
- **Urban flooding is significantly different from rural flooding:**
 - Urbanization increases flood risk by up to 3 times.
 - Increased peak flow results in flooding very quickly.
 - It affects large number of people due to high population density in urban areas.

Notable Urban Flooding Events in India since 2000:

- Hyderabad in 2000
- Ahmadabad in 2001
- Delhi in 2002 and 2003, 2009, 2010
- Chennai in 2004, 2015
- Mumbai in 2005, 2017
- Guwahati in 2010
- Bengaluru in 2017

The causes of recent floods in Hyderabad

- **Unplanned development**- Unplanned development, encroachments in riparian zones, failure of flood control structures, unplanned reservoir operations, poor drainage infrastructure, deforestation, land use change and sedimentation in river beds are exacerbating floods.
- **Neglect pre disaster planning**- The extent of the damage and the turmoil show a lack of preparation and disaster mitigation, a problem that plagues most urban centers in the country.
- **Loss of wetlands**- Wetlands and watersheds play a vital role in absorbing excess rainfall, but regrettably, rapid urbanization in the twin cities has resulted in the loss of a large portion of the wetlands.
 - Urban flooding has been largely a result of:
 - Indiscriminate encroachment of waterways and wetlands,
 - Inadequate capacity of drains and
 - Lack of maintenance of the drainage infrastructure.
- Encroachment of wetlands and urban water bodies has resulted in overflowing of lakes.
 - For instance, the Hussain Sagar Lake in the middle of the city and the breaching of storm water drains.
- An analysis by the Centre for Science and Environment in 2016 revealed that 3,245 hectares of water bodies were lost in Hyderabad between 1989 and 2001.
- **Waste management**- Every water body has a holding capacity. But, with all the industrial waste and sewage being dumping into the lakes, the waste accumulated and has now affected the holding capacity of the lakes.
 - All the nalas, storm drains, culverts are gone, either land-filled and build over or simply filled with garbage, detritus and forgotten.

- **Non utilization of tools:** Climate change adaptation tools for Hyderabad built by the Potsdam Institute for Climate Impact Research, Germany was not used.
- **Inability to manage the city's drainage systems:** The floods of October 2020 occurred because the water was not discharged in time and when it was discharged, it was done suddenly, in an uncontrolled manner.
- **Outdated infrastructure:** Hyderabad's century-old drainage system (developed in the 1920s) covered only a small part of the core city. The city has grown at least four times its original built-up area in 20 years, into areas where there was no drainage infrastructure.
 - The risk is going to increase every year with changing rainfall patterns and **a problem of urban terrain which is incapable of absorbing, holding and discharging water.**
- **Communities are left out:** The issues of incremental land use change; particularly of those commons which provide us with necessary ecological support, such as, wetlands are neglected.
 - This framing also **rejects the role of local communities in managing local ecosystems**; people with traditional rights for fishing and farming.
- **urban floods are a manmade disaster:** Overburdened drainage, hectic and unregulated construction, buildings constructed without paying any heed to the natural topography and hydro-geomorphology all adds to the damage. This makes urban floods easily more of a man-made disaster.

Impact of Urban Flooding:

- **Impact on Human:**
 - Loss of life & physical injury
 - Increased stress; psychological trauma
- **Disease outbreak:**
 - Contamination of water supplies leading to diseases
 - Rise in mosquito borne diseases
- **Impact on Economy:**
 - Damage to buildings, roads and other infrastructures
 - Disruptions to industrial production
 - Disruptions to utility supplies
- **Impact on heritage or archaeological site**
 - Post-disaster rescue and rehabilitation adds to financial burden of the government
 - Tourism which provides jobs to many locals also suffers
- **Impact on Transport and Communication:**
 - Increased traffic congestion, disruption in rail services
 - Disruption in communication- on telephone, internet cables
- **Impact on environment:**
 - Loss of tree cover, loss of habitat

- Impact on animals in zoo, stray animals

Governance reforms to deal with urban flooding.

- **Focusing on urban flood management**- Risk mapping of the areas of the city should be done to assess the vulnerability, related to urban floods by using GIS (Geographic Information System) technology.
- **Minimize the surface runoff**- Limit, reduce or mitigate for impervious surface throughout the watershed by use of new engineering techniques like pervious pathways, parking lots should be considered and implements wherever possible to minimize the surface runoff.
- **Prioritizing Buffers, Flexibility and Adaptability** - This includes reviewing safety criteria of dams and canals, re-building these with higher safety factors, creating new intermediate storages, and introducing dynamic reservoir management.
- **Watershed management and emergency drainage plan** should be clearly spoken in policy and law.
- **Detailed documentation of urban waters** must be held by agencies which are not bound by municipal authorities.
- **Natural boundaries such as watersheds instead of governance boundaries** like electoral wards for shaping a drainage plan should be considered.
- **Work in unison**: The Metropolitan Development Authorities, National Disaster Management Authority, State revenue and irrigation departments along with municipal corporations should be involved in such work together.
- **Ban against terrain alteration**: Terrain alteration needs to be regulated and a ban on any further alteration of terrain needs to be introduced.
- **Cities are becoming increasingly impervious to water** because of the nature of materials used (hard, non-porous construction material that makes the soil impervious).
- **New porous materials and technologies** must be encouraged or mandated across scales.
- **Examples of these technologies**: are **bioswales and retention systems, permeable material for roads and pavement, drainage systems** which allow storm water to trickle into the ground, green roofs and harvesting systems in buildings.

Idea of Sponge Cities

A mission that mitigates flood risk and provides a pathway to water security is required. The most promising idea across the world at this time appears to be the idea of “sponge cities”. The idea of a sponge city is to make cities more permeable so as to hold and use the water which falls upon it.

Significance:

- Sponge cities absorb the rain water, which is then naturally filtered by the soil and allowed to reach urban aquifers.
- This allows for the extraction of water from the ground through urban or peri-urban wells.
- This water can be treated easily and used for city water supply.

How sponge cities can be developed?

- In built form, this building attached open green spaces, interconnected waterways, and channels and ponds across neighbourhoods can naturally detain and filter water.
- These can all be delivered effectively through an urban mission along with the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), National Heritage City Development and Augmentation Yojana (HRIDAY) and Smart Cities Mission.
- Regardless of ownership, land use on even small-scale wetlands needs to be regulated by development control.

National Disaster Management (NDMA) Guidelines on Urban Flood Management

In 2010, NDMA (National Disaster Management) had issued the following guidelines on Urban Flood Management in India:

1. To create a **National Hydro-meteorological Network**.
 - a. The guidelines say that for providing early warning, the Central Water Commission (CWC) CWC should maximize the real-time hydro-meteorological network to cover all urban centres to effectively deal with the problem of urban flooding
2. Use of **Doppler Weather Radars** to be expanded to cover all urban areas in the country
3. An **inventory of the existing storm water drainage system** to be prepared. The inventory will be both watershed based and ward based.
 - a. Catchment to be the basis for planning and designing the storm water drainage systems in all ULBs.
 - b. Encroachments on the drain should attract penal action.
4. All future road and rail bridges in cities crossing drains to be designed such that they do not block the flows resulting in **backwater effect**.
5. Every building in an urban area must have **rainwater harvesting** as an integral component of the building utility.
6. **Low-lying areas in cities** have to be reserved for parks and other low-impact human activities.

7. Urban Flooding has to be **dealt as a separate disaster**, de-linking it from riverine floods which affect the rural areas.
8. Suitable interventions in the drainage system like **traps, trash racks** can be provided to reduce the amount of solid waste going into the storm sewers.
9. **Concept of Rain Gardens** to be incorporated in planning for public parks and on-site storm water management for larger colonies and sites those are to be developed.
10. **Flood hazard assessments** should be done based on projected future scenarios of intensities and duration of rainfall and land use changes.

Way forward

- The effects of flooding due to deluges can only be mitigated if urban planners consider the hydro-geology of cities and ensure that construction, development, and land occupation do not take place in a way that reduces the area of wetlands.
- **Proper solid waste management system**- control of solid waste entering the drainage systems
- **Restrict encroachments in natural drainage areas**; clearance of river beds, proper implementation of Coastal Regulation Zone rules.
- **Each city should have their Flood mitigation plans** strongly embedded within the master plan of the city.
- Better forecasting of rainfall events, timely dissemination of information to the mass- 'Nowcasting' alerts or real-time weather updates
 - **Example:** The Municipal Corporation of Greater Mumbai has installed 60 automatic weather stations for recording the rainfall every 15 minutes. This information is disseminated through the GMDMA (Greater Mumbai Disaster Management Authority) web portal in real-time during the monsoon.
- **Installation of proper, functional drainage system:** Maintenance of existing drainage channels, providing alternative drainage path.
- **The Sendai Framework for Disaster Risk Reduction 2015-2030** outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks:
 - Understanding disaster risk
 - Strengthening disaster risk governance to manage disaster risk
 - Investing in disaster reduction for resilience
 - Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation, and reconstruction.

GENERAL STUDIES 4

Ethical Policing

Syllabus: Ethics and Human Interface

In News: Recent instances of police brutality has raised the issue of ethical policing.

Recent examples on police brutality:

- The thrashing of a Dalit Ahirwar couple by the police in Guna district of Madhya Pradesh.

- The brutal torture of J. Benicks and his father P. Jayaraj in Sattankulam town in Thoothkudi district of Tamil Nadu
- The encounter of Vikas Dube by the Uttar Pradesh police in Kanpur is being questioned as it looked like the law had been subverted.

Ethics in Policing:

- **Policing:** Policing is one of the most important requirements of peaceful coexistence of the society. Policing is a practice put in place to maintain social order in the society. It is basically installing ways to control crime in the community. It concentrates on the maintenance of law and order and the prevention and detection of offences.
- **Police ethics:** It refers to a **system of moral values** that are generally accepted as professional standards in policing.
 - In policing, ethics includes values such as allegiance, honesty, loyalty, and courage.
 - It is important to note that police ethics are separate from the police department's written rules and regulations. However, ethical behaviour would include following any written rules, formal regulations and laws.
- **Police integrity is determined through three factors:** ethics, discretion and professionalism. Police ethics refers to a system of moral values that are generally accepted as professional standards in policing.

Need of ethics in policing:

- **Rising Police misconduct:** The lack of effective accountability mechanisms and periodic review of performance has misplaced the public's confidence in the police. For example, 19-year-old heart patient, Sagar Chalavadi died of a heart attack after being lathi-charged outside an SSLC examination centre
- **Lack of proper justice:** Due to corruption in the police system, the investigation process goes on for decades. This lets the culprits roam free and even perform more crimes.
- **Lack of faith and trust on the government:** The police are the first place of contact for grievance redressal. But when the system fails, the public loses faith in the law and order of the state.
 - For example, Station House Officer (SHO) Arvind Kumar, who was in charge of a police station in Defence Colony with his police station pooled money and bought food bags for 350 families of upmarket residential area in South Delhi.
- **Ensure accountability:** Accountability is a crucial aspect of the ethics of policing. It is not about the control of police but about the responsibility for the way in which the control is exercised. The accountability is threefold – accountability to the people, accountability to law and accountability to the organization.
- **Ensuring good governance** – As per the police laws, both the Central and State police forces come under the superintendence and control of political executives. Police priorities are frequently altered based on the will of political executives.

- In **State of Gujarat v Kishanbhai**, SC took cognizance of the high number of acquittals happening due to shoddy investigations, and passed strict orders to take action against the erring police officials.
- In a recent case, the convicts of the attack on the Akshardham Temple were released after 11 years in judicial custody and the Court expressed its anguish about the incompetence with which the agencies conducted the investigation and the wrong done to the convicts, their family and the society.
- **To fulfil the purpose and objectives of police in a democratic society are:**
 - Prevention and detection of crime
 - Maintenance of public order
 - Respect for rule of law
 - Respect dignity of humans
 - Respect for freedom, liberty and rights of citizens
- **Ethical policing:** A proper balance must be achieved between individual rights and public interest through the mechanism of the Rule of Law.
- **Policing and human rights:** violations of human rights by police causes an overall effect of loss of faith in the police as a protector and upholder of citizens' rights. Corruption erodes public faith in police and undermines the rule of law, leading directly or indirectly to a violation of human rights. The rights of people have been a matter of grave concern of all civilizations from time immemorial. Respect for human rights lies in the heart of good governance.
- **Service-oriented policing:** The NPC suggested that the police should assume a service-oriented role of which law enforcement is only a part.
- **Discretion in Policing:** discretion can lead to a loss of trust and respect for the police.
- **Norms of the organisational culture:** Police officers do engage in unethical behaviour which often originates from the norms of the organisational culture. However, the working of the world of policing provides officers with the ability to rationalise excuse and justify unethical behaviour, while maintaining a moral self image.
- **To protect right of accused:** Each person is a moral and rational being who deserves to be treated with dignity. Human rights are the rights to which every human being is entitled—no matter who they are or where they live.

Police and ethical issues in India:

- **Use of force Vs excessive use of force:** The use of force refers to the amount of effort used by an officer in order to compel an offender to comply with the officer. Officers face dangerous situations every day and are permitted to use appropriate measures to address those situations and complete their law enforcement duties. However, there's no universal rule regarding when an officer can use force, or how much force can be used.
- **For example,** The Thoothukudi violence^[14] was an incident in Thoothukudi, Tamil Nadu where 13 unarmed protestors were killed and 100+ injured by the Tamil Nadu Police.
- **Discretion in Policing:** This means the police have freedom to decide what should be done in any particular policing situation. In Babloo Chauhan and Dabloo vs State Govt. of

NCT of Delhi (2017), the Delhi high court expressed grave concern over wrongful prosecution and incarceration of innocent persons, and their acquittal after many years of imprisonment

- **Police corruption:** It is the misuse of police authority for personal gain. Personal gain can mean monetary payment or any other type of benefit. The benefit must be gained illegally and as a result of the officer's position or authority.
- **Biased policing:** disparate police practices which means the police treat people differently because of membership in a particular class, such as race, gender or ethnicity.
- **Abuse of power:** for example in *Joginder Kumar vs State Of UP* (1994), regarding abuse of the powers to arrest the SC had held that arrest could not be made by police in a routine manner. In *Vinay Tyagi vs Irshad Ali* (2012), Irshad Ali, an informer for the special cell of the Delhi Police and the Intelligence Bureau, was falsely implicated in a criminal case when he did not oblige an unjust demand of theirs.
- **Personal interest over public interest:** Acting as agents of powerful lobbies (political parties, influential organisations or people, etc.) for money or for currying political favours with them.

Ethics in Police: Human rights issue?

- **Against Right to fair trial:** for example, *Adambhai Sulemanbhai Ajmeri & Ors vs State of Gujarat* (2014) pertaining to the Akshardham temple attack of 2002. The Gujarat police had implicated six people, of which three were awarded the death penalty, two life imprisonment and the last five years' jail by a POTA court in 2006. In 2014, a division bench of the SC acquitted them all.
- **Against right to life:** In the Mecca Masjid bomb blast (2007) case of Hyderabad, the police had picked up Muslim youngsters ranging from paan shop owners, watch repairers, auto drivers to a student pursuing Unani medicine, and implicated them in the case. Later in 2011, following their acquittal, on the recommendation of the National Commission for Minorities (NCM), the state government announced compensation of Rs 3 lakh each to 16 persons.
- **Article 21:** It states: "No person shall be deprived of his life or personal liberty except according to a procedure established by law. The National Human Rights Commission (NHRC) recorded a staggering 1,674 cases of custodial deaths in 334 days (11 months) between April 2017 and February 2018
- **Against right to live with dignity:** Fabrication and frame-ups are not aberrations; they have become the very soul of policing now. The victims are bound to suffer the most harrowing of experiences for varying lengths of time: illegal detention and torture (both physical and psychological), incarceration and, of course, an agonising trial. They return home to find jobs lost, businesses destroyed; 'broken' family members who have suffered the humiliation and trauma.
- **Against natural justice:** Every person is innocent until proven guilty. Acts that deny the accused right to fair hearing are against the basic rule of natural justice. Hence, due

procedure of investigation and hearing must be followed to prevent punishing the wrong person.

- **Extrajudicial approach:** Delivering instant justice without due hearing can create a sense of vengeance in the criminal.

Way forward:

- **A separate body that administers the corruption charges on police officers:**
Investigative team that are specifically designed to look into crimes by police officers and one that is independent from any political influence.
- **The ARC recommended separation of crime investigation from other police functions** ie maintenance of law and order, establishment of state police boards, welfare and grievances redressal mechanisms for police personnel.
- **Dharma-Vira Commission recommendation**– The top police leadership should be selected by apolitical representatives and an impartial body. It was a strong antidote to opportunistic appointments and transfers.
- **To prevent custodial abuse:** In fact, following the landmark **1997 DK Basu vs West Bengal case**, the Supreme Court laid down some basic guidelines to prevent custodial abuse.
 - Duties of police making arrest and handling interrogation: All police personnel should wear name tags clearly indicating their name and designation.
 - Police must enter the complete details of police officials conducting interrogation in a register.
 - The police officer making an arrest has to prepare an Arrest Memo that records details of the arrest.
- **Community Policing Model** can help in reducing the trust deficit between police and public. for example, Tamil Nadu's '**Friends of Police**', West Bengal is the '**Community Policing Project**', Andhra Pradesh's '**Maithri**' and Maharashtra's '**Mohalla Committees**'.
- **Ensure accountability:** Learning from global best practices, such as- in UK, USA and other countries, the police officers on duty mandatorily carry body-worn cameras. **These have to be switched on all the time when they are on duty.**
- **Ethical training:** The force needs to be infused with basic human values and made sensitive to the constitutional ethos. Efforts must be made to change the attitude and approach of the police personnel handling investigations so that they do not sacrifice basic human values during interrogation and do not resort to questionable forms of interrogation.

APPENDIX 1 | FACTLY MAGAZINE

POLITY

Now, outsiders can buy land in Jammu and Kashmir

News: Ministry of Home Affairs has introduced the 'Union Territory of Jammu and Kashmir Reorganisation (Adaptation of Central Laws) Third Order, 2020'.

Facts:

What are the key changes made?

- **Permanent residents:** The term permanent residents of the State' has been removed from important provisions of laws.No domicile or permanent resident certificate is required to buy land in Jammu and Kashmir.Urban or non-agricultural land can be sold to outsiders.
- **Implementation of RERA:** Real Estate (Regulation & Development) Act, 2016 has been notified in the J&K.
- **Jammu and Kashmir Industrial Development Corporation(JKIDC):** It has been established to acquire, promote and sell land for the purpose of industrial undertakings.
- **Declaration of strategic area:** An Army officer not below the rank of Corps Commander can declare an area as Strategic Area within a local area, only for direct operational and training requirements of the armed forces.
- **Usage of agricultural land:** No sale, gift, exchange or mortgage of the land shall be valid in favour of a person who is not an agriculturist. However, the government may allow transfer of land in favour of a person or an institution for the purpose of promotion of healthcare or senior secondary or higher or specialized education in J&K.
- **Contract Farming:** permits contract farming on agricultural lands. Nothing shall prohibit the transfer of ownership of land for 'contract farming', or grant of lease or mortgage for the loan.Earlier, it was limited to the mortgage for loans.

Maharashtra withdraws general consent to CBI

News: Maharashtra government has withdrawn its general consent to the Central Bureau of Investigation(CBI).

Facts:

- **What is consent?** CBI is governed by the Delhi Special Police Establishment Act,1946 that makes consent of a state government mandatory for conducting investigation in that state.
- **Types:** There are two kinds of consent:
 - **Case Specific:** As CBI has jurisdiction only over central government departments and employees, it can investigate a case involving state government employees or a violent crime in a given state only after that state government gives its consent.

- **General consent:** It is normally given to help the CBI seamlessly conduct its investigation into cases of corruption against central government employees in the concerned state. Almost all states have given such consent.
- **What does general consent withdrawal mean?** It means the CBI will not be able to register any fresh case involving a central government official or a private person stationed in the state without getting case-specific consent.
- **Does that mean that the CBI can no longer probe any case in the two states?** No, CBI would still have the power to investigate old cases registered when general consent existed. Also, cases registered anywhere else in the country, but involving people stationed in Maharashtra would allow CBI's jurisdiction to extend to this state.

Additional Facts:

CBI: It is the premier investigating police agency in India which functions under the Department of Personnel, Ministry of Personnel, Pension & Public Grievances. It is governed by the provisions of the DSPE Act, 1946.

ECI Constitutes Committee on Expenditure Limit

News: Election Commission of India (ECI) has constituted a committee to examine the issues concerning the expenditure limit for a candidate.

Facts:

- **Background:** The committee was set up after the Ministry of Law & Justice has notified an amendment in Rule 90 of Conduct of Elections Rules, 1961 increasing the existing election campaign expenditure limit by 10% with immediate effect in the wake of the COVID-19 pandemic situation.
- **Members of the Committee:** The committee comprises Harish Kumar (Ex.IRS) and Umesh Sinha (DG-Expenditure).
- **Terms of Reference:** The committee will have following terms of reference:-
 - To assess the change in number of electors across the States/Union Territories and its bearing on expenditure.
 - To assess the change in Cost Inflation Index and its bearing on the pattern of expenditure incurred by the candidates in recent elections.
 - To seek views/inputs of the political parties and other stakeholders.
 - To examine other factors which may have bearings on expenditure.

Additional Facts:

- **Expenditure Limit:** Election Commission of India imposes limits on the expenditure incurred by a candidate, but not political parties on their election campaign.
 - **Range:** The expenditure limits range from Rs. 20 lakh to Rs. 28 lakh for assembly elections and from Rs. 54 lakh to Rs.70 lakh for Lok Sabha elections.
 - **Earlier Revision:** The expenditure limit was last revised in 2014 while the same was done for Andhra Pradesh and Telangana in 2018, following their bifurcation in 2014.
 - After that, the limit has not been increased despite an increase in the electorate and an increase in the Cost Inflation Index.

SC: Stay on proceedings must not exceed 6 months

News: The Supreme Court has ordered that stay on proceedings in criminal case must not exceed beyond six months.

Facts:

- **Background:** This ruling came after the trial court has directed a complainant to get approval from High Court which had stayed the proceedings in the criminal case.
- **Judgement:** The Supreme Court has ruled that any stay on criminal and civil proceedings will not continue beyond six months and the trial court can proceed in the case without waiting for approval from higher courts if the stay is not extended.
- **Significance:** This ruling has reiterated the 2013 judgment in the Asian Resurfacing of Road Agency Pvt. Ltd case and the 2018 SC's verdict.

Fifteen Years of Right to Information Act

News: A report card has been brought out by the Satark Nagrik Sangathan and the Centre for Equity Studies to mark the 15th anniversary of the Right to Information(RTI) Act coming into force.

Facts:**Key Facts from the report:**

- **Pending Cases:** More than 2.2 lakh cases are pending at Central and State Information Commissions which are the final courts of appeal under the RTI Act.
- **Highest Pending Appeals:** Maharashtra had the highest number of pending appeals followed by Uttar Pradesh and the Central Information Commission(CIC).
- **Vacancies:** Nine out of 29 information commissions are functioning without a chief information commissioner. Even the CIC is functioning without chief information commissioner and only 5 commissioners.
- Under the law, every commission should have a chief and up to 10 commissioners.
- **Penalties:** The government officials face hardly any punishment for violating the law. Only 2.2% of cases that were disposed of faced penalties despite previous analysis showing about 59% violations which should have triggered the process of penalty imposition.

Additional Facts:

- **Right to Information Act, 2005:** It provides for timely disclosure of information by citizens from both central and State Public Authorities. It seeks to empower citizens and promote accountability and transparency.
 - Under the act, Public Authorities are required to make disclosures on various aspects such as **a)** disclosure on their organisation, functions and structure **b)** powers and duties of its officers and employees and **c)** financial information.

Public places cannot be occupied indefinitely: Supreme Court

News: The Supreme Court has ruled that the indefinite “occupation” of a public road by the Shaheen Bagh protestors was unacceptable.

Facts:

- **Background:** The ruling came after a petition was filed in the SC highlighting problems caused by the protests which led to the roadblock and traffic problems.
- **What has the court ruled?**
 - The court upheld the right to peaceful protest against a law but made it clear that public ways and public spaces cannot be occupied and that too indefinitely.
 - The right to protest in a public place should be balanced with the right of the general public to move freely without hindrance.
 - Fundamental rights do not live in isolation. The right of the protester has to be balanced with the right of the commuter and has to co-exist in mutual respect.
- **What does the Constitution say?**
 - The Constitution guarantees the right to protest and express dissent, but with an obligation towards certain duties.
 - Article 19 confers upon citizens the right to freedom of speech and expression under Article 19(1)(a) and right to assemble peacefully without arms under Article 19(1)(b).
 - However, these rights are also subject to reasonable restrictions mentioned under Article 19(2), imposed in the interest of sovereignty, integrity and public order with the help of police regulations.

Pointly for Polity

- **CVC amends Integrity Pact:** Integrity Pact is a vigilance tool that envisages an agreement between the prospective vendors/bidders and the buyer committing both the parties not to exercise any corrupt influence on any aspect of the contract.

POLICY

Govt. seeks comments on draft IR Code rules

News: Union Labour and Employment Ministry has published the draft rules framed under the Industrial Relations Code, 2020.

Facts:

- Industrial Relations Code combines and simplifies relevant provisions of three Central Labour Acts: Trade Unions Act, 1926, the Industrial Employment (Standing Orders) Act, 1946 and the Industrial Disputes Act, 1947.

Key Highlights of the Draft Rules:

- **Exit provisions relating to retrenchment and others:** Firms with 300 or more workers are required to seek approval from the government before 15-day notice for lay-offs, 60-day notice for retrenchments and 90-day notice for closure.
- **Electronic Methods of Communication:** The rules propose electronic methods for most communication including maintenance of an electronic register for standing orders for all industrial establishments among others.
- **Rules on Strike:** The notice of strike has to be signed by the secretary and five elected representatives of the registered trade union and given to the employer, with a copy sent to the Chief Labour Commissioner (Central) electronically or otherwise.
- **Reskilling Fund:** The rules also proposed establishing a re-skilling fund for retrenched workers. Employers would have to electronically transfer an amount equal to 15 days of the last drawn wages of the retrenched workers or worker into an account maintained by the government within 10 days of the retrenchment.
 - The fund so received shall be transferred by the Central Government to each worker or workers' account electronically within 45 days of receipt of funds from the employer and the worker shall utilize such amount for his re-skilling.

Shipping Ministry issues Draft Coastal Shipping Bill, 2020

News: The Ministry of Shipping has issued the draft of Coastal Shipping Bill, 2020 for suggestions from the stakeholders and general public.

Facts:

- **About the Bill:** The Ministry of Shipping has drafted a Coastal Shipping Bill, 2020 in lieu of part XIV of the Merchant Shipping Act, 1958.
- **Key highlights of the Bill:**
 - The definition of coastal shipping and coastal waters has been expanded.
 - It is proposed to do away with the requirement of trading licence for Indian flag vessels for coastal trade.
 - The Bill seeks to create a competitive environment and reduce transportation costs, while encouraging Indian vessels to increase their share in coastal shipping.

- The Bill also proposes integration of coastal maritime transport with inland waterways.
- There is a provision for a National Coastal and Inland Shipping Strategic Plan.

IPBES releases paper titled “Escaping the ‘Era of Pandemics’”

News: The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services(IPBES) has released a research paper titled “**Escaping the Era of Pandemics: Experts Warn Worse Crises to Come**”.

Facts:

- **Objective:** The report has analysed the contribution of human-induced environmental damages in the emergence of new diseases.

Key Takeaways:

- Pandemics like COVID-19 would hit us more frequently unless there is a change in the global approach to dealing with infectious diseases.
- We are yet to identify some 1.7 million viruses that exist in mammals and birds. Out of these, 50% have the potential or ability to infect humans.
- Land use change is a significant driver of pandemics and caused the emergence of more than 30% of new diseases reported since 1960.

Recommendations:

- **Intergovernmental Council:** Launch a high-level intergovernmental council on pandemic prevention to provide decision-makers with the best science and evidence on emerging diseases.
- **Mutually agreed Goals:** Countries should set mutually-agreed goals or targets within the framework of an international accord or agreement – with clear benefits for people, animals and the environment.
- **One Health approach:** Institutionalizing the 'One Health' approach in national governments to build pandemic preparedness, enhance pandemic prevention programs and to investigate and control outbreaks across sectors.
- **Changes in Consumption:** Enable changes to reduce the types of consumption, globalized agricultural expansion and trade that have led to pandemics.
- **Reducing zoonotic disease risks** in the international wildlife trade through intergovernmental partnerships.
- **Valuing Indigenous Peoples** and local communities' engagement and knowledge in pandemic prevention programs.

Additional Facts:

IPBES: It is an intergovernmental organization established in 2012 to improve the interface between science and policy on issues of biodiversity and ecosystem services. **Headquarters:** Bonn, Germany.

Cabinet approves Externally Aided Dam Rehabilitation and Improvement Project – Phase II and Phase III

News: Cabinet Committee on Economic Affairs chaired by the Prime Minister has approved the Dam Rehabilitation and Improvement Project (DRIP) Phase II & Phase III.

Facts:

- **Aim:** To improve the safety and operational performance of selected dams across the whole country along with institutional strengthening and generating revenue for sustainable operation and maintenance of dams.
- **Funding:** It is an externally aided project with the financial assistance of the World Bank(WB) and Asian Infrastructure Investment Bank(AIIB).
- **Duration:** The Project will be implemented over a period of 10 years duration in two Phases each of six years duration with two years overlapping from April, 2021 to March, 2031.
- **Components:**
 - Rehabilitation and improvement of dams and associated appurtenances
 - Dam safety institutional strengthening in participating States and Central agencies
 - Exploration of alternative incidental means at few of selected dams to generate the incidental revenue for sustainable operation and maintenance of dams and
 - Project management.

Union Minister launches DST initiative SERB – POWER for women scientists

News: Union Minister for Science & Technology has launched a Scheme titled “SERB-POWER (Promoting Opportunities for Women in Exploratory Research)”.

Facts:

- **Aim:** To encourage emerging as well as eminent women researchers to undertake R&D activities in frontier areas of science and engineering.
- **Components:** The Scheme will have two components namely:
- **SERB-POWER Fellowship:-**
 - **Target:** Women researchers in 35-55 years of age. Up-to 25 Fellowships per year and not more than 75 at any point in time.
 - **Components of support:** Fellowship of Rs 15,000/- per month in addition to regular income; Research grant of Rs 10 lakh per annum and Overhead of Rs 90,000/- per annum.
 - **Duration:** Three years without the possibility of extension. Once in a career.
- **SERB – POWER Research Grants:** POWER Grants will empower women researchers by funding them under the following two categories:
 - **Level I** (Applicants from IITs, IISERs, IISc, NITs, Central Universities, and National Labs of Central Government Institutions): The scale of funding is up to 60 lakhs for three years.

- **Level II** (Applicants from State Universities / Colleges and Private Academic Institutions): The scale of funding is up to 30 lakhs for three years.

Additional Facts:

SERB: It is a statutory body established through an Act of Parliament in 2008. It is chaired by the Secretary to the Department of Science and Technology and has other senior government officials and eminent scientists as members.

India had most deaths in road accidents in 2019: Report

News: Ministry of Road Transport and Highways has released a report titled “Road Accidents in India”.

Facts:

Key Highlights from the report:

- **Road Accidents:** The total number of road accidents in India declined 3.86% in 2019. However, India continued to have the most road fatalities in the world followed by China.
- **Causes of Road Accidents:** Speeding was the leading cause of deaths, while in terms of vehicles, two-wheelers were involved in most road fatalities.
- **Road Accidents in States:** Most Road accidents were reported in Tamil Nadu followed by Madhya Pradesh, Uttar Pradesh, Kerala and Karnataka.
- **Road Accidents in Cities:** Among cities, Delhi retained its first rank followed by Jaipur, Chennai and Bengaluru.
- **Most Deaths on Highways:** The national and state highways which account for just 5% of the total roads in the country, saw the most deaths – 61% of the total.

Additional Facts:

- **Brasilia Declaration:** It was signed at the Second Global High-Level conference on Road Safety held in Brazil in 2015. The declaration also calls upon countries to achieve the Sustainable Development Goal 3.6 which calls to halve the number of global deaths and injuries from road traffic accidents by 2020.
- **Justice K.S. Radhakrishnan Committee:** It was set up by the Supreme Court on road safety in 2014. It has said that speeding is the major cause of accidents especially on straight roads and highways where control on speed is minimal.
- **Decade of Action for Road Safety 2011–2020:** It was officially proclaimed by the United Nations General Assembly in 2010. Its goal is to stabilize and reduce the forecast level of road traffic deaths around the world.

Union Agriculture Minister launches Ayushman Sahakar Scheme

News: Union Minister of State for Agriculture has launched Ayushman Sahakar Scheme.

Facts:

- **Nodal Body:** The scheme has been formulated by the National Cooperative Development Corporation (NCDC).

- **Aim:** To extend term loans to prospective cooperatives to the tune of Rs.10,000 Crore for the setting up of healthcare related infrastructure, education and services.
- **Eligibility:** Any Cooperative Society with suitable provision in its byelaws to undertake healthcare related activities would be able to access the NCDC fund.
- **Incentives:** The scheme provides interest subvention of 1% to women majority cooperatives.

Additional Facts:

NCDC: It is an apex level statutory autonomous institution set up by the Government of India under an Act of the Parliament in 1963. It is under the administrative control of the Ministry of Agriculture and Farmers Welfare.

Cabinet approves World Bank aided project STARS

News: Union Cabinet has approved the implementation of the World Bank- aided Strengthening Teaching-Learning and Results for States(STARS) project under the New Education Policy (NEP).

Facts:

- **Type:** The project would be implemented as a Centrally Sponsored Scheme under the Department of School Education and Literacy, Ministry of Education(MOE).
- **Aim:** To support the states in developing and improving school education outcomes.
- **Coverage:** The project covers 6 States namely Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala and Odisha.

Components: The STARS Project has two major components:

- **At National Level,** the project envisages the following interventions which will benefit all states and UTs:
 - To strengthen the national data systems to capture robust and authentic data on retention, transition and completion rates of students.
 - To support in improving states Performance Grading Index(PGI) scores by incentivizing states governance reform agenda through SIG (State Incentive Grants).
 - To support the establishment of the National Assessment Center (PARAKH).
 - It also includes a Contingency Emergency Response Component (CERC) which will help government respond to situations leading to loss of learning such as school closures, inadequate facilities and use technology for facilitating remote learning among others.
- **At State Level,** the project envisages:
 - Strengthening Early Childhood Education and Foundational Learning
 - Improving Learning Assessment Systems
 - Strengthening classroom instruction and remediation through teacher development and school leadership

- Governance and Decentralized Management for Improved Service Delivery among others.
- Strengthening Vocational education in schools through mainstreaming, career guidance and counselling, internships and coverage of out of school children

India's health budget spend fourth lowest globally: Oxfam report

News: Oxfam has released a report titled “Commitment to Reducing Inequality (CRI) Index,2020”.

Facts:

- **About the index:** The index ranks 158 countries measuring their policies and actions in three areas that it said are proven to be directly related to reducing inequality:
 - Public services(health, education and social protection)
 - Taxation and
 - Workers rights

Key Takeaways:

- **Topped by:** The index has been topped by Norway followed by Denmark and Germany.
- **India:** It has been ranked 129 overall in the index.
 - **Public Services:** In terms of its public services such as health, education and social protection,India has been ranked 141.
 - **Taxation:** In terms of taxation, India has been ranked 19th in the index.
 - **Workers Rights:** India has fared poorly in protecting labour rights and has slipped to rank 151.
- **Other Facts Related to India:**
 - India has spent just 4% of its budget on health going into the pandemic — fourth lowest in the world.
 - Only half of India's population have access to even the most essential health services while over 70% of health spending is being met by people themselves.
 - Most workers earn less than half of the minimum wage.Further, only around 10% of the workforce in India is formal with safe working conditions and social security.

DST collaborates with IBM to build STEM career opportunities for girl students

News: Department of Science & Technology(DST) and IBM India have announced collaborations to scale up two DST initiatives--Vigyan Jyoti and Engage with Science (Vigyan Prasara).

Facts:

- **Vigyan Jyoti:**
 - **Launched Year:** 2019
 - **Nodal ministry:** Ministry of Science & Technology (DST).
 - **Coverage:** The programme covers girl students from grade 9 to 12.
 - **Aim:** To create a level-playing field for the meritorious girls in high school to pursue Science, Technology, Engineering, and Mathematics (STEM) in their higher education and become self-reliant.

- **Implementation:** The program is currently implemented by Jawahar Navodaya Vidyalaya (JNV) in 58 districts with the participation of about 2900 students.
- **Vigyan Prasara:** It is an autonomous body under the DST to help India's science popularization agenda through several strategic initiatives, including 'Engage With Science'.
- **Engage With Science:** It is an interactive platform that will be built on top of the India Science Over-The-Top (OTT) platform to encourage and inspire high school students to pursue Science & Technology (S&T) for a career.

Pointly for Policy:

- **Secure Application for Internet(SAI):** It is a simple and secure messaging application developed by Indian army that supports end-to-end secure voice, text and video calling services for Android platforms over the internet.
- **Public Affairs Index:** has been released the Public Affairs Centre, a not-for-profit organisation headed by former Indian Space Research Organisation (ISRO) chairman K. Kasturirangan. It ranks states on the basis of governance performance in the context of sustainable development defined by three pillars of equity, growth and sustainability.
- **Har Ghar Jal State:** Goa has become the first 'Har Ghar Jal' State in the country as it has successfully provided 100% Functional Household Tap Connections(FHTCs) in the rural areas by utilising the benefits under Jal Jeevan Mission(JJM).
- **Tech for Tribals Initiative:** It has been launched by Tribal Cooperative Marketing Development Federation of India (TRIFED) in collaboration with Chhattisgarh MFP Federation and IIT Kanpur. It aims at the holistic development of tribals with a focus on entrepreneurship development, soft skills, IT and business development through Self Help Groups(SHGs) operating through Van Dhan Kendras (VDVKs).
- **Jogighopa Multimodal Logistics Park:** It is India's first multi-modal logistics park that will provide direct connectivity to air, road, rail and waterways to the people. It will be developed under the Bharatmala Pariyojana of the Government of India.
- **Life in Miniature Project:** It is a collaboration between the National Museum, New Delhi, Ministry of Culture and Google Arts and Culture. It uses technologies like machine learning, augmented reality and digitization with high-definition robotic cameras to showcase special works of art such as miniature paintings from the National Museum which can be viewed online on Google Arts and Culture.
- **India-Australia Circular Economy Hackathon(I-ACE):** It has been launched by Atal Innovation Mission(AIM) in association with Australia's Commonwealth Scientific and Industrial Research Organisation(CSIRO). It aims to focus on identification and development of innovative technology solutions by bright-minded students, startups and MSMEs of both nations.
- **Circular Economy:** It is an economic system aimed at eliminating waste and the continual use of resources. It employs reuse, sharing, repairing, refurbishment,

remanufacturing and recycling to create a closed-loop system minimising the use of resource inputs and the creation of waste, pollution and carbon emissions.

- **National Program and Project Management Policy Framework(NPMPF):** It has been launched by NITI Aayog and Quality Council of India(QCI).It aims to bring radical reforms in the way infrastructure projects are executed in India.
- **Electricity Access in India and Benchmarking Distribution Utilities report:** It has been released by NITI Aayog, Ministry of Power, Rockefeller Foundation and Smart Power India.
- The report captures insights from both demand (electricity customers) as well as supply side (electricity distribution utilities).

INTERNATIONAL RELATIONS

India, US sign landmark defence pact BECA

News: India and the US have signed the Basic Exchange and Cooperation Agreement(BECA) for geo-spatial cooperation.

Facts:

- **What is BECA?** It is a communication agreement between the National Geospatial-Intelligence Agency of the US Department of Defence and the Ministry of Defence of the Government of India.
- **Purpose:** It allows India and the US to share military information including advanced satellite and topographic data such as maps, nautical and aeronautical charts and geodetic, geophysical, geomagnetic and gravity data.
- **Significance:** It will enable India to use US geospatial maps to enhance military accuracy of automated hardware systems and weapons such as cruise and ballistic missiles.

Additional Facts:

What were the previously signed foundational agreements between India and US?

- **Logistics Exchange Memorandum of Agreement(LEMOA):** Signed in 2016.It allows both countries to have access to each other's designated military facilities for refuelling and replenishment.
- **General Security Of Military Information Agreement(GSOMIA):** Signed in 2002.It allows militaries to share the intelligence gathered by them.
- An extension to the GSOMIA, the Industrial Security Annex (ISA), was signed at the 2+2 dialogue in 2019.ISA provides a framework for exchange and protection of classified military information between the USA and Indian defence industries.
- **COMCASA (Communications Compatibility and Security Agreement):** Signed in 2018.It aims to provide a legal framework for the transfer of highly sensitive communication security equipment from the USA to India that will streamline and facilitate interoperability between their armed forces.

India assumes Chairmanship of Governing Body of ILO after 35 years

News: After 35 years, India has assumed the Chairmanship of the Governing Body of International Labour Organization(ILO).

Facts:

International Labour Organization(ILO):

- **Established in:** 1919
- **Aim:** To promote social and economic justice through setting up of international labour standards.
- **Members:** 187 member states
- **Headquarters:** Geneva, Switzerland
- **Significance:** It is the first affiliated specialized agency of the United Nations and the only tripartite U.N. agency that brings together governments, employers and workers to set labour standards, develop policies and devise programmes promoting decent work for all women and men.
- **Recognition:** It received the Nobel Peace Prize in 1969 for improving peace among classes, pursuing justice for workers and for technical assistance to other developing nations.
- **Reports:** a) World Employment and Social Outlook b) Global Wage Report and c) World Social Protection Report.
- **ILO Conventions ratified by India:**
- The six conventions of ILO which have been ratified by India are a) Forced Labour Convention b) Abolition of Forced Labour Convention c) Equal Remuneration Convention d) Discrimination (Employment Occupation) Convention e) Minimum Age Convention and f) Worst forms of Child Labour Convention.
- **The other two conventions** namely a) Freedom of Association and Protection of the Right to Organised Convention b) Right to Organise and Collective Bargaining Convention has not been ratified by India.

India joins UK-led campaign against encrypted social media messages

News: India is among seven countries to back a UK-led campaign against end-to-end encryption of messages by social media giants such as Facebook.

Facts:

- **Which are the seven countries?** The UK and India are joined by the US, Canada, Australia, New Zealand and Japan.
- **What is the campaign about?** The campaign is against the end-to-end encryption of messages by social media giants such as Facebook. The governments have claimed that this feature acts as an obstacle for law enforcement against illegal activities by blocking all access to them.
- **Significance:** This campaign marks an expansion of the so-called "Five Eyes" group of nations by including India and Japan.

Additional Facts:

- **Five Eyes(FVEY):** It is an intelligence alliance comprising Australia, Canada, New Zealand, the United Kingdom and the United States. These countries are parties to the multilateral UKUSA Agreement, a treaty for joint cooperation in signals intelligence.
- **End-to-end encryption(E2EE):** It is a system of communication where only the communicating users can read the messages.
- In principle, it prevents potential eavesdroppers including telecom providers, Internet providers and the provider of communication service from being able to access the cryptographic keys needed to decrypt the conversation.

FATF's Asia Pacific Group keeps Pakistan in the enhanced follow up list

News: Asia-Pacific Group (APG) on Money Laundering has retained Pakistan on its 'Enhanced Follow-Up' list. This was the first Follow-Up Report on Mutual Evaluation of Pakistan released by the Asia-Pacific Group (APG).

Facts:

- **What is Mutual Evaluation Report:** It is a peer-review system to determine whether countries meet the compliance standards for money laundering and terror financing.
- After a country submits a Mutual Evaluation report, APG members can decide to place a member either through regular or enhanced follow-up.
 - A regular follow-up means just biennial reports.
 - A country put under enhanced follow-up has to send four reports of compliance the following year.
- **Why was Pakistan retained on the Follow up list?** Pakistan's progress on the 40 FATF recommendations on the effectiveness of anti-money laundering and combating financing terror (AML/CFT) systems largely remained unchanged.

Additional Facts:

- **APG:** It is a regional affiliate of the Paris-based Financial Action Task Force (FATF).
 - **Where was it founded?** 1997 in Bangkok, Thailand
 - **Members:** It currently consists of 41 members in the Asia-Pacific region.
 - **Secretariat:** Sydney, Australia.
- **FATF:** It is an inter-governmental body established in 1989 during the G7 Summit in Paris.
 - **Aim:** To set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering and

Nobel Peace Prize 2020 Awarded To World Food Programme

News: The Nobel Peace Prize for 2020 has been awarded to the World Food Programme for feeding millions of people from Yemen to North Korea with the coronavirus pandemic seen pushing millions more into hunger.

Facts:

- **World Food Programme (WFP):** It is the food assistance branch of the United Nations, established in 1961.
- **Aim:** To eradicate hunger and malnutrition with the ultimate goal of eliminating the need for food aid itself.
- **Significance:** It is a member of the United Nations Development Group and part of its Executive Committee.
- **Funding:** Its operations are funded by voluntary donations from world governments, corporations and private donors.
- **Headquarters:** Rome, Italy.

China joins COVAX initiative for Covid-19 vaccine distribution

News: China has announced the joining of Covid-19 vaccine alliance known as COVAX.

Facts:

- **COVAX alliance:** It is co-led by Gavi, the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO.
- **Aim:** To accelerate the development and manufacture of COVID-19 vaccines, and to guarantee fair and equitable access for every country in the world.
- The alliance also forms a key part of the Access to COVID-19 Tools (ACT) Accelerator.

Additional Facts:

- **Access to COVID-19 Tools (ACT) Accelerator:** It is a global collaboration with the aim to accelerate the development, production, and equitable access to COVID-19 tests, treatments, and vaccines.
- **GAVI:** It is a global Vaccine Alliance created in 2000 by bringing together public and private sectors with the shared goal of creating equal access to new and underused vaccines for children living in the world's poorest countries.
- **CEPI:** It is a global partnership between public, private, philanthropic and civil society organisations launched in Davos in 2017 to develop vaccines against emerging infectious diseases and enable equitable access to these vaccines for people during outbreaks.

New Caledonia rejects independence from France

News: French territory of New Caledonia voted against independence from France in a referendum held recently. The referendum was a part of a decolonisation plan agreed in 1998 known as the Noumea Accord.

Facts:

- **New Caledonia:** It is an archipelago and special collectivity of France located in the southwest Pacific Ocean.
- **Significance:** It has large deposits of nickel, a vital component in manufacturing electronics and is seen by France as a strategic political and economic asset in the region.
- **Autonomy:** It enjoys a large degree of autonomy but depends heavily on France for matters like defence and education and still receives large subsidies from France. It is also one of the UN's 17 "non-self governing territories" where the process of decolonisation has not been completed.



Pointly for International Relations:

- **Green Strategic Partnership:** It was launched by India and the Kingdom of Denmark for delivering sustainable solutions to India. The Partnership will focus on expanding economic ties, green growth and cooperation on global challenges such as climate change.
- **Daring Cities 2020:** It is an action-oriented forum established by ICLEI and the Federal City of Bonn (Germany) to empower urban leaders including mayors and other decision-makers to tackle the climate crisis. The Daring Cities 2020 comprised high level and visionary speakers who has helped to set the course to COP26, Daring Cities 2021 and beyond.
- **Exercise Malabar:** It is an annual naval exercise which began in 1992 as a bilateral exercise between India and the U.S. Then it got expanded into a trilateral format with the inclusion of Japan in 2015. In 2020, Australia has also participated in the exercise.

ECONOMY

Government announces Compound interest waiver scheme on loan Moratoriums

News: Government of India has announced a scheme called, 'Scheme for grant of ex-gratia payment of difference between compound interest and simple interest for six months to borrowers in specified loan accounts'.

Facts:

- **Aim:** To provide major relief for individuals and MSME borrowers by waiver of the compound interest on specified loans for six months period.
- **What does it mean?** In simple words, the borrowers need to pay simple interest on their loan amount for the six month period between March and August as against the compound interest.

- **Categories:** The loans eligible under the scheme include MSME loans, education loans, housing loans, consumer durable loans, credit card dues, automobile loans, personal loans to professionals and consumption loans.
- **Eligibility:** Any borrower whose aggregate of all facilities with lending institutions is more than ₹2 crore (sanctioned limits or outstanding amount) will not be eligible for ex-gratia payment under this scheme. Also, the loan accounts should not be non-performing assets(NPA) as on the date mentioned above.
- **Lending Institutions:** The lending institution has to be either a banking company, or a public sector bank, co-operative bank or a regional rural bank, or All India Financial Institution, a non-banking financial institution, housing finance company or a micro finance institution.

Additional Facts:

Simple and Compound Interest: Simple interest is calculated on the principal, or original, amount of a loan. On the other hand, Compound interest is calculated on the principal amount and also on the accumulated interest of previous periods and can thus be regarded as "interest on interest".

Centre to borrow on behalf of States to meet GST Shortfall

News: The Central government has decided to borrow up to Rs 1.1 lakh crore on behalf of the states to meet the shortfall of Goods and Services Tax(GST) compensation.

Facts:

- **Borrowing Mechanism:** Under the Special Window, the estimated shortfall of Rs 1.1 lakh crore will be borrowed by Centre in appropriate tranches. The amount so borrowed will be passed on to the States as a back-to-back loan in lieu of GST Compensation Cess releases.
- **Will the borrowing impact the fiscal deficit of the Centre?** The borrowing will not have any impact on the fiscal deficit of the Centre as the amounts will be reflected as the capital receipts of the States and as part of the financing of its respective fiscal deficits.
- **Significance:** The Centre borrowing on behalf of states is likely to ensure that a single rate of borrowing is charged and this would also be easy to administer.

Additional Facts:

GST Compensation Cess: Under the GST (Compensation to States) Act, 2017, states are guaranteed compensation for loss of revenue on account of implementation of GST for a transition period of five years between 2017 and 2022. At present, the cess levied on products considered to be 'sin' or luxury goods.

Pointly for Economy:

- **Doing Business in India Report 2020:** It has been released by the UK India Business Council(UKIBC).The report is based on an in-depth survey of 106 UK organizations operating in India spanning manufacturing, services, and higher education sectors.
- **Future of Jobs Report, 2020:** It has been released by the World Economic Forum(WEF).The report maps the jobs and skills of the future, tracking the pace of change.
- **Poverty and Shared Prosperity Report:** It is a biennial report released by the World Bank.The report aims to provide the latest and most accurate estimates on trends in global poverty and shared prosperity.
- **Nobel Prize for Economics,2020:** It has been awarded to Paul R Milgrom and Robert B Wilson for their work on auction theory and new auction formats.
- **World Economic Outlook Report,2020:** It has been released by the International Monetary Fund(IMF).The report is published twice a year.it aims to provide analysis and forecasts of economic developments of member countries and highlights risks and uncertainty.

ENVIRONMENT**Radio-tagged Amur Falcons arrive in Manipur**

News: Chuilon and Irang, the radio-tagged Amur Falcons have arrived in Manipur after completing one migratory journey that covered 29,000 km in 361 days.

Facts:

- **The Amur Falcon** locally known as 'Akhoipuina is the world's longest travelling migratory raptors.
- **Migratory Route:** They breed in East Asia and migrate to northeast India, Sri Lanka and sometimes to Thailand, Cambodia and up to the Arabian Sea and parts of Southern Africa.
- **Doyang Lake** in Nagaland is known as a stopover for the Amur falcons during their annual migration.
- **IUCN Status:** Least Concern
- **Significance:** Nagaland Government organises Amur Falcon festival to spread awareness about the need to provide safe passage to Amur falcons.

**President signs ordinance for setting up commission to manage NCR air quality**

News: President of India has promulgated an ordinance to constitute a Commission for Air Quality Management in National Capital Region(NCR) and adjoining areas.

Facts:

- **Purpose:** To tackle air pollution and to monitor and improve air quality in the National Capital Region(NCR) and adjoining areas.
- **Composition:**
 - The Commission will be a permanent body. It will have over 20 members and will be chaired by a retired official of the level of Secretary to the Government of India or Chief Secretary of a state.
 - The members includes a representative of the Secretary of the Ministry of Environment, five Secretary level officers who will be ex officio members and two joint secretary level officers who will be full-time members.
 - The Commission will also have representation from the CPCB, ISRO, air pollution experts, and three representatives of non-government organisations(NGOs).
- **Functions and Powers:**
 - It can supersede all existing bodies such as the CPCB and even the state governments of Haryana, Punjab, Rajasthan, and Uttar Pradesh in matters of air pollution and air quality management.
 - It will have powers to restrict the setting up of industries in vulnerable areas, and will be able to conduct site inspections of industrial units.
 - If its directions are contravened, the Commission will have the power to impose a fine of up to Rs. 1 crore and imprisonment of up to 5 years.
- **Headquarters:** Delhi.

International Snow Leopard Day

News: International Snow Leopard Day is being observed on October 23 every year since 2013. The primary aim of the day is to raise awareness on conservation and protection of the snow leopards.

Facts:

- **HimalSanrakshak:** It is a community volunteer programme launched by the Government of India to protect Snow leopards.
- **Snow Leopard Conservation:**
 - **Project Snow Leopard (PSL):** It was launched by Govt of India in 2009 to promote an inclusive and participatory approach to conserve snow leopards and their habitat.
 - **Global Snow Leopard and Ecosystem Protection(GSLEP):** It is a joint initiative of range country governments, international agencies, civil society, and the private sector. Its goal is to secure the long-term survival of the snow leopard in its natural ecosystem.
 - **Snow Leopard Landscapes:** For conservation, India has identified three large landscapes namely, Hemis-Spiti across Ladakh and Himachal Pradesh; Nanda Devi – Gangotri in Uttarakhand; and Khangchendzonga – Tawang across Sikkim and Arunachal Pradesh.

- **Flagship Species:** The Government of India has also identified the snow leopard as a flagship species for the high-altitude Himalayas.

Additional Facts:

Snow leopards: It lives in the mountainous regions of central and southern Asia.

Range Countries: Snow leopard is found in 12 range countries namely Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan.

India: The states of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh constitute snow leopard Habitat range in India.

IUCN Status: Vulnerable

CITES: Appendix I

Significance: Snow leopard is the State animal of Himachal Pradesh.

Kabartal Wetland designated as Ramsar Site

News: Kabartal Wetland has been designated as Ramsar sites. With this, the total number of Ramsar sites in India is 39, the highest in South Asia.

Facts:

- **Kabartal Wetland:** It is also known as Kanwar Jheel. It covers 2,620 hectares of the Indo-Gangetic plains in the Begusarai district of Bihar.
- **Significance:** It acts as a vital flood buffer for the region besides providing livelihood opportunities to local communities.
- **Biodiversity:** Significant biodiversity is present in the wetland. It is also an important stopover along the Central Asian Flyway for migratory waterbirds.
- **Species:** It is home to species such as white rumped vulture (Critically Endangered), red-headed vulture (Critically Endangered) and two waterbirds, the sociable lapwing (*Vanellus gregarius*) and Baer's pochard (*Aythya baeri*).

Additional Facts:

- **Ramsar Convention on Wetland (1971):** It is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources
- **Montreux Record:** It is a register of wetland sites on the List of Ramsar wetlands of international importance. It shows such sites where there has been or likely to be adverse ecological changes due to anthropogenic activities. Indian sites in the Montreux Record are Keoladeo National Park (Rajasthan), Loktak Lake (Manipur).

Conservation centres in 5 states among host of ideas to protect vultures

News: National Board for Wildlife (NBWL) has approved an Action Plan for Vulture Conservation 2020-2025.

Facts:**Key Highlights of the Plan:**

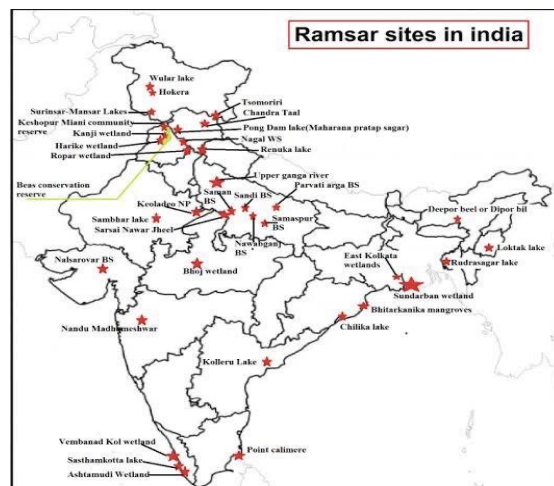
- **Vulture Conservation centre:** Uttar Pradesh, Tripura, Maharashtra, Karnataka and Tamil Nadu will get a vulture conservation and breeding centre each.
- **Vulture Safe zone:** Establishment of at least one vulture-safe zone in each state for the conservation of the remnant populations in that state.
- **Rescue Centres:** Establishment of four rescue centres, in Pinjore (Haryana), Bhopal (Madhya Pradesh), Guwahati (Assam) and Hyderabad (Telangana). There are currently no dedicated rescue centres for treating vultures.
- **Toxic Drugs:** A system to automatically remove a drug from veterinary use if it is found to be toxic to vultures with the help of the Drugs Controller General of India.
- **Vultures Census:** Coordinated nation-wide vulture counting involving forest departments, the Bombay Natural History Society, research institutes, nonprofits and members of the public. This would be for getting a more accurate estimate of the size of vulture populations in the country.
- **Database on Threats to Vulture:** A database on emerging threats to vulture conservation including collision and electrocution, unintentional poisoning.

Additional Facts:

- **Vultures in India:** Out of 23 species of vultures in the world, nine are found in India. These include:
 - White rumped vulture (Critically Endangered)
 - Slender billed vulture (Critically Endangered)
 - Long billed vulture (Critically Endangered)
 - Red headed vulture (Critically Endangered)
 - Egyptian vulture (Endangered)
 - Himalayan Griffon (Near Threatened)
 - Cinereous vulture (Near Threatened)
 - Bearded vulture (Near Threatened)
 - Griffon Vulture (Least Concern).

Asan Conservation Reserve gets Ramsar site tag

News: The Asan Conservation Reserve (ACR) was declared as a site of international importance under the Ramsar Convention becoming Uttarakhand state's first entry into the coveted list and 38th Ramsar Wetland Site of India.

Facts:

- **Asan Conservation Reserve:** It is located on the banks of Yamuna river near Dehradun district in Garhwal region of Uttarakhand.
- **Species:** It is home to species such as white rumped vulture(Critically Endangered), ruddy shelduck(Least Concern), red-headed vulture (Critically Endangered), Asian woolly neck(Vulnerable) among others.
- **Significance:** The wetland also acts as host to several migratory birds from October till March.

Additional Facts:

- **Ramsar Convention on Wetland (1971):** It is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources
- **Montreux Record:** It is a register of wetland sites on the List of Ramsar wetlands of international importance. It shows such sites where there has been or likely to be adverse ecological changes due to anthropogenic activities. Indian sites in the Montreux Record are Keoladeo National Park (Rajasthan), Loktak Lake (Manipur).

Nandankanan zoo revives 'adopt-an-animal' scheme

News: Nandankanan Zoological Park(NZP) which suffered a huge loss following its closure due to the COVID-19 pandemic has revived its innovative 'Adopt-An-Animal' programme to mobilise resources for animals.

Facts:

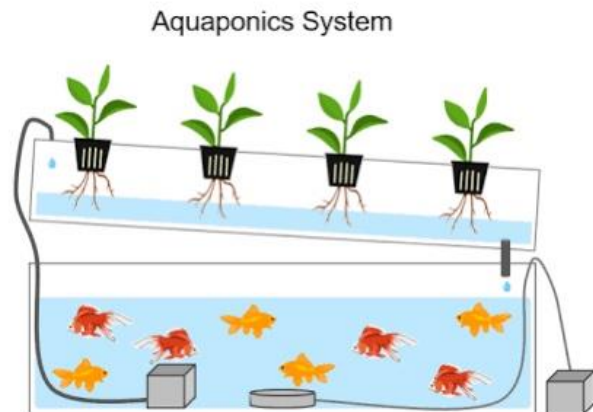
- **Nandankanan Zoological Park(NZP):** It is located in Bhubaneswar, Odisha. Unlike other zoos in the country, Nandankanan is built right inside the forest and set in a completely natural environment.
- **Uniqueness:**
 - It is the first zoo in the World to breed White tiger and Melanistic tiger and it is the only conservation breeding centre of Indian Pangolins in the world.
 - First captive breeding centre for endangered Gharials in the year 1980.
 - Kanjia Lake – A wetland of National importance (2006).
 - It is the only zoological park in India to become an institutional member of World Association of Zoos and Aquarium (WAZA).
 - It is the only zoo in India after which an express train Puri-New Delhi express has been named as "Nandankanan Express".
 - It is the first zoo in India where endangered Ratel was born in captivity.

Mohali centre develops technology for aquaponic cultivation of plants

News: The Centre for Development of Advanced Computing (C-DAC), Mohali, has developed the technology for aquaponic cultivation of plants.

Facts:

- **Aquaponics:** It is an emerging technique in which both fish as well as plants complement each other to sustain and grow. The fish waste provides organic food for plants and plants naturally filter the water, which is used to replenish the fish tank.
- **Benefits:**
 - Extremely water efficient.
 - Does not require soil.
 - Does not use fertilizers or chemical pesticides.
 - Reduces pressure on land and cuts down operational costs among others.
 - It does not require farmland with fertile soil
 - It provides Food Security and a better source of income for farmers.



Additional Facts: C-DAC: It 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.

IMD launches impact-based cyclone warning system

News: India Meteorological Department (IMD) has launched a dynamic, impact-based cyclone warning system.

Facts:

- **Aim:** To minimise economic losses and damage to property from cyclones that hit the country's coasts every year.
- **Features:**
 - Under this, district or location will issue specific warnings which will factor in the infrastructure, local population, settlements, land use as well as other elements will be disseminated and prepared.
 - All the disaster management agencies will also make the extensive use of geological, cartographic and hydrological data available for the concerned district.
 - If a district is to be hit by a wind up to 160 kmph, the system will warn about the kind of infrastructure that will likely get damaged and these can be mapped.

Additional Facts:

IMD: It was established in 1875. It is an agency of the Ministry of Earth Sciences. It is the principal agency responsible for meteorological observations, weather forecasting and seismology.

Fishing cat to be the ambassador of Chilika Lake

News: The Chilika Development Authority (CDA) has designated the fishing cat as ambassador which is being called as an important step towards conservation of the vulnerable species.

**Facts:**

- **Fishing Cat:** It is a medium-sized wildcat found in South and Southeast Asia. They are nocturnal and are an adept swimmer which enters water frequently to prey on fish and other animals.
- **Habitat:** In India, fishing cats are mainly found in the mangrove forests of the Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra river valleys and in the Western Ghats.
- **Significance:** In 2012, the West Bengal government officially declared the Fishing Cat as the State Animal.
- **IUCN Red List:** Vulnerable.
- **CITES:** Appendix II
- **Indian Wildlife Protection Act, 1972:** Schedule I
- **Threat:** Habitat Destruction, Hunting, Ritual Practices, Poaching among others.

Additional Facts:

Chilika Lake: It is Asia's largest brackish water lake spread over districts of Odisha at the mouth of the Daya River, flowing into the Bay of Bengal.

In 1981, Chilika Lake was designated the first Indian wetland of international importance under the Ramsar Convention.

Eight beaches in India to get coveted 'Blue Flag' certification

News: Eight beaches from India have received the 'coveted' Blue Flag certification.

Facts:

- **Which are those Eight Beaches?** The eight Indian beaches that have received the Blue Flag certification are:
 - Shivrampur Beach in Dwarka, Gujarat
 - Ghoghla Beach in Diu
 - Kasarkod and Padubidri beaches in Karnataka
 - Kappad Beach in Kerala
 - Rushikonda Beach in Andhra Pradesh
 - Golden Beach in Odisha and

- Radhanagar Beach in Andaman and Nicobar Islands.

Additional Facts:

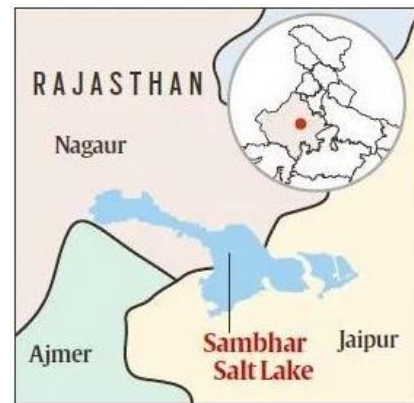
- **Blue flag certification:** It is an international recognition conferred on beaches that meet certain criteria of cleanliness and environmental propriety.
- **Who gives the certification:** The certification programme is run by international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).
- **Criteria:** The certification is based on 33 stringent criteria in four major heads (i) Environmental Education and Information (ii) Bathing Water Quality, (iii) Environment Management and Conservation and (iv) Safety and Services in the beaches.
- **Headquarters:** Copenhagen, Denmark.

Plan to build temporary bird shelters near Sambhar Lake

News: Rajasthan government has decided to build temporary shelters for migratory birds near the Sambhar Lake (near Jaipur) before 2020's winter season.

Facts:

- **Sambhar Lake:** It is India's largest inland saline water body located near Jaipur in Rajasthan.
- **Geography:**
 - The lake is surrounded on all sides by the Aravali hills and is spread across Jaipur and Nagaur districts and also a part of Ajmer district in Rajasthan.
 - The lake receives water from five rivers Medtha, Samaod, Mantha, Rupangarh, Khari and Khandela.
- **Significance:** The lake was also designated as a Ramsar site in 1990. It is also famous for salt production and is also an Important Bird Area (IBA).
- **Why there is a need for shelters:** Every year, a large number of birds from the cold northern regions of Central Asia come to Sambhar Lake. In 2019, more than 20,000 migratory birds died due to avian botulism in the lake.



Additional Facts:

- **Avian Botulism:** It is a neuro-muscular illness caused by Botulinum (natural toxin) that is produced by bacteria, Clostridium botulinum.
- The bacteria is commonly found in the soil, rivers, and seawater. It affects both humans and animals.
- The bacteria also need anaerobic (absence of oxygen) conditions and do not grow in acidic conditions.
- The illness affects the nervous system of birds, leading to paralysis in their legs and wings.

China's climate commitment: How is it significant?

News: China has announced significant climate change announcements at the virtual UN General Assembly in New York.

Facts:

- **What has China announced?** China would become carbon net-zero by the year 2060.
 - **Net-zero:** It is a state in which a country's emissions are compensated by absorptions and removal of greenhouse gases from the atmosphere.
 - Absorption can be increased by creating more carbon sinks such as forests while removal involves application of technologies such as carbon capture and storage.
- **Other announcements:** China has made a small but important change in China's already committed target for letting its emissions "peak", from "by 2030" to "before 2030". That means China would not allow its greenhouse gas emissions to grow beyond that point.
- **Significance of China's Commitment:** China is the world's largest emitter of greenhouse gases. It accounts for almost 30% of global emissions more than the combined emissions in the United States, the European Union and India, the three next biggest emitters.

Additional Facts:

Other Countries Commitment: European Union has committed itself to a net-zero emission status by 2050. South Africa has also declared its intention to become carbon-neutral by 2050.

Carbon neutrality: Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon oxide from the atmosphere and then storing it is known as carbon sequestration.

Pointly for Environment

- **Fourth India Energy Forum:** It is an annual event organized by NITI Aayog and Ministry of Petroleum & Natural Gas to understand best-practices, discuss reforms, and inform strategies for accelerating investments into the Indian Oil and Gas value chains.
- **India PV EDGE 2020:** It is a global summit on solar manufacturing organised by NITI Aayog, Ministry of New and Renewable Energy and Invest India.
- **My Ganga My Dolphin campaign:** It has been launched by National Mission for Clean Ganga (NMCG), the Wildlife Institute of India and the Forest Department. It aims to promote and boost Dolphin based ecotourism in the country and to conduct Dolphin census.
- **Bio-decomposer:** It is a decomposer capsule which could be converted into a liquid solution and sprayed on fields with crop stubble. The solution when sprayed in the fields can decompose crop residue and turn it into manure. It has been developed by the Indian Agricultural Research Institute (IARI), Pusa.
- **Brahma Kamal (Saussurea Obvallata):** It is a species of flowering plant native to the India, Mongolia, Burma and southwest China. It is also the state flower of Uttarakhand. The flower is mentioned in the scriptures and is offered in many holy shrines including Kedarnath,

Badrinath and Tunganath. It is valued in Tibetan medicine and Ayurveda for its healing properties. It is also extensively used by the local population to treat cuts and bruises.

- **Human Cost of Disasters 2000-2019 Report:** It has been released by United Nations Office for Disaster Risk Reduction (UNDRR).
- **State of Climate Services 2020 Report:** It has been released by United Nations (UN) World Meteorological Organization (WMO). It identifies where and how governments can invest in effective early warning systems that strengthen countries' resilience to multiple weather, climate and water-related hazards and provides successful examples.
- **Buldhana Pattern:** It is a water conservation pattern from Maharashtra. Under this, the synchronisation of national highway construction and water conservation was achieved by using soil from the water bodies, nallas and rivers. This consequently led to the increase in capacity of water storage across the water-bodies in Buldana district.
- **Heeng (asafoetida):** It is a herbaceous plant of the umbelliferae family. It can be grown in unutilized sloppy land of cold desert regions. It is one of the widely used spices in Indian cuisine since time immemorial. There is no production of heeng in India and currently it is being imported annually from Afghanistan, Iran and Uzbekistan.
- **State of Global Air 2020 (SOGA 2020) report:** It is released annually by the Health Effects Institute and the Institute for Health Metrics and Evaluation (IHME) Global Burden of Disease (GBD) project.
- **Climate finance shadow report 2020 :** It has been released by Oxfam. It assesses the progress that developed countries had committed in 2009 to mobilise \$100 billion every year by 2020 to help developing countries cut their carbon dioxide emissions and adapt to the effects of climate change.

SCIENCE and TECHNOLOGY

NITI Aayog & AWS Launch Frontier Technologies Cloud Innovation Center in India

News: NITI Aayog has announced the establishment of a *Frontier Technologies Cloud Innovation Center (CIC)* with Amazon Web Services (AWS)—the first of its kind in India.

Facts:

- **Frontier Technologies Cloud Innovation Center (CIC):** It is a public-private partnership that focuses on addressing societal challenges through digital innovation by using emerging technologies such as artificial intelligence (AI), Internet of Things (IoT), robotics among others.

Additional Facts:

- **What is CIC?** It is part of the AWS CIC Global Program, which provides an opportunity for government agencies, nonprofits and educational institutions to come together on pressing challenges, apply design thinking, test new ideas and access the technical expertise of AWS.
- **AWS:** It is a subsidiary of Amazon. It provides on-demand cloud computing platforms and Application Programming Interfaces (API) to individuals, companies and governments on a metered pay-as-you-go basis.
- **Frontier Technologies:** It is defined as potentially disruptive technology that can address large-scale challenges. It is an intersection where radical forward-thinking and real-world implementation meet. For example AI, robotics, 3D printing, Internet of Things among others.

NASA's SOFIA Discovers Water on Sunlit Surface of Moon

News: NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) has confirmed for the first time water on the sunlit surface of the Moon. This discovery indicates that water may be distributed across the lunar surface and not limited to cold, shadowed places.

Facts:

- **SOFIA:** It is an airborne observatory jointly built by NASA and German Aerospace Centre. It features a reflecting telescope mounted on a modified Boeing 747SP aircraft flying into the stratosphere at 38,000–45,000 feet.
- **Purpose:** It allows researchers to observe the infrared universe as many objects in space emit almost all their energy at infrared wavelengths and are often invisible when observed with visible light.
- **Significance of the discovery of water on Moon:** NASA's Artemis programme plans to send the first woman and the next man to the Moon in 2024 and hopes to establish a sustainable human presence there by the end of the decade. If space explorers can use the Moon's resources, it means they need to carry less water from Earth.

Serum Institute of India, IAVI and Merck join forces to develop COVID-19 antibodies

News: Serum Institute of India (SII) and the International AIDS Vaccine Initiative (IAVI) have announced an agreement with pharmaceutical major Merck to develop SARS-CoV-2 neutralising monoclonal antibodies (mAbs).

Facts:

- **What are Monoclonal Antibodies?** They are man-made proteins that act like human antibodies in the immune system. They are made by cloning a unique white blood cell.
- **Features:**
 - Monoclonal antibodies can have monovalent affinity, binding only to the same epitope (the part of an antigen that is recognized by the antibody).

Additional Facts:

- **Antibody:** It is a protein produced by the body's immune system when it detects harmful substances called antigens.
- **Antigen:** It is a toxin or other foreign substance which induces an immune response in the body especially the production of antibodies.
- **Epitope:** It is a portion of a foreign protein or antigen that is capable of stimulating an immune response.
 - They are designed to perform many roles like they can be used to carry drugs, toxins or radioactive substances directly to the cancer cells.

Scientists discover new organ in the human throat

News: Scientists in the Netherlands have discovered a potential new organ in the human throat named "*tubarial salivary glands*".

Facts:

- **Tubarial Salivary Glands:** It is about 3.9 centimeters in length on average and is located over a piece of cartilage called the torus tubarius, the structure that supports the entrance of the auditory tube.
- **Function:** Researchers suspect that the glands probably lubricate and moisten the upper throat behind the nose and mouth.
- **Significance:** The discovery is potentially good news for some cancer patients with head and neck cancers as radiation oncologists can circumvent these areas and protect them from the side effects of radiation.

Additional Facts:

Salivary Glands: It has three pairs of major glands (parotid, submandibular and sublingual) and over 1,000 minor glands that are spread throughout the mucosa. These glands produce saliva necessary for swallowing, digestion, tasting, mastication and dental hygiene.

MOSAIC expedition successfully completed

News: The MOSAiC Expedition which began from Norway has successfully concluded at the port of Bremerhaven, Germany.

Facts:

- **Multidisciplinary Drifting Observatory for the Study of Arctic Climate (MOSAIC):** It is an international research expedition that aims to take the closest look ever at the Arctic as the epicenter of global warming and to gain fundamental insights that are key to better understand global climate change.
- **Led by:** The project has been designed by an international consortium of leading polar research institutions led by Germany's Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI).

- **RV Polarstern (a polar research ship):** Under the mission, German research icebreaker Polarstern was set sail from Norway to spend a year drifting through the Arctic Ocean - trapped in ice.

Pointly for Science and Technology:

- **New Shephard:** It is a rocket system meant to offer flights to space over 100 km above the Earth and accommodation for payloads. The system is built by Amazon founder Jeff Bezos's space company called Blue Origin.
- **COVIRAP:** It is a cuboid-shaped Covid-19 testing device developed by Indian Institute of Technology(IIT) Kharagpur.
- **Nobel Prize for Medicine or Physiology 2020:** It has been awarded to Americans Harvey J Alter and Charles M Rice and British scientist Michael Houghton for the discovery of the Hepatitis C virus.
- **Cat Que Virus:** It is a category of Arthropod-borne viruses found in pigs and Culex mosquitoes and birds such as the Jungle Myna. The virus can be transmitted to a person when that person is bit by a mosquito. Probable symptoms among human beings can be paediatric encephalitis, meningitis and acute fever.

SOCIAL

Explained: What is Mexico's Khadi Oaxaca which PM mentioned in Mann ki Baat

News: In his Mann ki Baat address, the Prime minister has made a reference to Mexico's Khadi Oaxaca and told how khadi reached Mexico after a local resident became influenced by a film on Mahatma Gandhi.

Facts:

- **Khadi Oaxaca:** It is a farm-to-garment collective which comprises around 400 families, which live and work on traditional farms and homesteads in the Oaxaca region of southern Mexico.
- **Founded by:** It has been founded by Mark Marcos Brown, an American living in Mexico and his wife, Kalindi Attar.
- **Method:** It uses cotton produced and cultivated on the Oaxaca coast, and produces chemical-free clothing, relying on locally harvested plant-based dyes.

Union Minister launches second phase of "Thalassemia Bal Sewa Yojna"

News: Union Minister for Health and Family Welfare launched the second phase of "Thalassemia Bal Sewa Yojna" for the underprivileged Thalassemic patients.

Facts:

- **Thalassemia Bal Sewa Yojna:** It was launched in 2017 with the aim to provide a one-time cure opportunity for Haemoglobinopathies like Thalassaemia and Sickle Cell Disease for patients who have a matched family donor.
- **Funded by:** The scheme is a Coal India CSR funded Hematopoietic Stem Cell Transplantation(HSCT) program.

- **Beneficiary:** The initiative aims to provide financial assistance to a total of 200 patients by providing a package cost not exceeding Rs. 10 lakhs per HSCT.

Additional Facts:

- **Thalassemia:** It is a chronic and genetic blood disorder due to which a patient's body cannot make enough hemoglobin leading to anemia. This disease is passed from parents to children through genes and people suffering from it require blood transfusions to survive.
- **Hematopoietic stem-cell transplantation(HSCT):** It is the transplantation of multipotent hematopoietic stem cells usually derived from bone marrow, peripheral blood, or umbilical cord blood.
 - It may be autologous (the patient's own stem cells are used), allogeneic (the stem cells come from a donor) or syngeneic (from an identical twin).
 - It is most often performed for patients with certain cancers of the blood, thalassemia or bone marrow such as multiple myeloma or leukemia.

One in every 130 females globally is living in modern slavery: UN report

News: United Nations(UN) has released a report titled "Stacked odds" on the occasion of International Day of the Girl Child, 2020.

Facts:

- This report has been combined with observations, data and studies conducted by Walk Free, International Labor Organization(ILO) and the International Organization for Migration(IOM).
- **Key Takeaways from the report:**
 - Females across the world account for about 71% of all victims of Modern Slavery.
 - One in every 130 females globally is living in modern slavery. Females account for 99% of all victims of forced sexual exploitation, 84% of all victims of forced marriage, and 58% of all victims of forced labour, it added.

Additional Facts:

- **Modern slavery:** It is defined as the systematic removal of a person's freedom, where one person is exploited by another for personal or financial gain.
- **ILO:** It was established in 1919 to promote social and economic justice through setting up of international labour standards. **Headquarters:** Geneva, Switzerland.
- **IOM:** It is an intergovernmental organization established in 1951. It provides services and advice concerning migration to governments and migrants including internally displaced persons, refugees, and migrant workers.
- In 2016, it became a related organization of the United Nations.
- **Headquarters:** Geneva, Switzerland.

Pointly for Social:

- **Bundi:** It is an erstwhile capital of Hada Rajput province known as Hadauli located in south-eastern Rajasthan. It is also known as City of stepwells, blue city and also as Chotti Kashi. The Important Places of the city include Taragarh Fort, Sukh Mahal, Rani Ki Baori, 84 Pillared Cenotaph among others.
- **Anemia Mukht Bharat(AMB) Index:** It has been released by Ministry of Health and Family Welfare and UNICEF. It ranks states on the basis of measures taken to reduce the prevalence of Anemia.
- **World's Women 2020: Trends and Statistics report:** It has been released by the Statistics Division of the United Nations Department of Economic and Social Affairs(UNDESA). According to the report, in 2020, only 47% of women of working age participated in the labour market, compared to 74% of men. Further, on an average day, women globally spend about three times as many hours on unpaid domestic and care work as men (4.2 hours compared to 1.7).
- **Global Estimate of Children in Monetary Poverty Report:** It has been released by World Bank Group and UN Children's Fund(UNICEF). According to the report, 1 in 6 children globally lived in extreme poverty(surviving on less than \$1.90 a day) before the pandemic and this is set to worsen significantly.
- **Global Hunger Index 2020 report:** It is an annual report jointly published by Ireland's Concern Worldwide and Germany's Welthungerhilfe. It aims to measure and track hunger at the global, regional and country levels based on four indicators namely Undernourishment, child wasting, child stunting and Child mortality rate under 5 years of age. The report has ranked India at 94 out of 107 countries.
- **Mission Shakti:** It has been launched by the Uttar Pradesh government. It is a 6-month long women empowerment which aims to raise awareness and tackle crime against women in the state.
- **Global tuberculosis report:** It has been published annually by World Health Organization (WHO) since 1997. It provides a comprehensive and up-to-date assessment of the TB epidemic and of progress in prevention, diagnosis and treatment of the disease at global, regional and country levels.

INTERNAL SECURITY**ASW corvette INS Kavaratti commissioned in Vizag**

News: Army chief General has commissioned anti-submarine warfare(ASW) ship INS Kavaratti into the Indian Navy at the Naval Dockyard in Visakhapatnam.

Facts:

- **INS Kavaratti:** It is an anti-submarine warfare corvette of the Indian Navy built under Project 28.
- **Built by:** It has been designed by the Indian Navy's in-house organisation Directorate of Naval Design(DND) and built by Garden Reach Shipbuilders and Engineers (GRSE) in Kolkata.

- **Purpose:** The ship has up to 90% indigenously built content and is capable of detecting and destroying submarines. In addition, the ship has a credible self-defence capability and good endurance for long-range deployments.

Additional Facts:

Kamorta-class corvettes or Project 28: These are a class of anti-submarine warfare corvettes currently in service with the Indian Navy. All of the four corvettes, INS Kamorta, INS Kadmat, INS Kiltan and INS Kavaratti have been commissioned.

Anti-submarine warfare (ASW): It is a branch of underwater warfare that uses surface warships, aircraft, submarines or other platforms to find, track, and deter, damage and/or destroy enemy submarines.

DRDO successfully flight tests Indigenously Developed Anti Radiation Missile (RUDRAM)

News: Defence Research and Development Organisation (DRDO) has successfully flight tested New generation Anti Radiation Missile (RUDRAM).

Facts:

- **RUDRAM:** It is India's first indigenous anti-radiation air-to-surface missile for Indian Air Force (IAF). The missile is integrated on SU-30 Mk1 fighter aircraft.
- **Purpose:** It is designed to detect, track and neutralise the adversary's radar, communication assets and other radio frequency sources which are generally part of their air defence systems.
- **Features:**
 - The missile's navigation mechanism comprises an inertial navigation system — a computerised mechanism that uses changes in the object's own position coupled with GPS which is satellite-based.
 - For guidance, it has a "passive homing head" — a system that can detect, classify and engage targets (radio frequency sources in this case) over a wide band of frequencies as programmed.
 - The missile has an operational range of more than 100 km, based on the launch parameters from the fighter jet.

India successfully test-fired the Stand-off Anti-tank (SANT) Missile off the coast of Odisha

News: India has successfully flight tested an indigenously developed Stand-off Anti-tank (SANT) missile from a ground-based platform off Odisha coast.

Facts:

- **SANT Missile:** It is an air-to-surface missile developed by Defence Research and Development Organisation (DRDO) for the Indian Air Force.
- **Range:** The missile can destroy targets 15 km to 20 km away.

- **Upgraded Version:** The missile is an upgraded version of the Helicopter Launched Nag (HeliNa) missile which has a range of around 7 to 8km.

Pointly for Internal Security:

- **Exercise Suraksha Kavach:** It was organised by Agnibaaz Division(Southern Command of Indian army) for both Indian Army and Maharashtra Police at Pune.It aims to harmonise the drills and procedures of both Army and police for activating anti-terrorist Quick Reaction Teams(QRTs) to counter any terrorist actions in Pune.
- **Supersonic Missile Assisted Release of Torpedo(SMART):** It has been developed by Defence Research and Development Organisation(DRDO).It is a missile assisted release of lightweight Anti-Submarine Torpedo System for anti-submarine warfare(ASW) operations for far beyond torpedo range.
- **Vigraha:** It is an offshore patrol vessel(OPV) built and designed by Larsen and Toubro Shipbuilding under the 'Make in India' initiative for Indian Coast Guard(ICG).

MISCELLANEOUS

National Conference on Vigilance and Anti-Corruption

News: The Prime Minister has inaugurated the National Conference on Vigilance and Anti-Corruption.

Facts:

- **Organized by:** The conference is organised by the Central Bureau of Investigation(CBI).
- **Aim:** To raise awareness and reaffirm India's commitment to promotion of integrity and probity in public life through citizen participation.
- **Theme:** Vigilant India, Prosperous India.

Additional Facts:

CBI: It is the premier investigating police agency in India which functions under the Department of Personnel, Ministry of Personnel, Pension & Public Grievances.It is governed by the provisions of the DSPE Act,1946.

India International Science Festival 2020

News: The 6th edition of the India International Science Festival(IISF) will be held virtually in December,2020.

Facts:

- **IISF:** It is a festival launched in 2015 to celebrate the achievements of India's scientific and technological advancements with students, innovators, craftsmen, farmers, scientists and technocrats from India and abroad.

- **Aim:** To engage the public with science and celebrate the joy of science and show the ways how science, technology, engineering and mathematics (STEM) provide solutions to improve people's lives.
- **Organized by:** Ministry of Science & Technology and Ministry of Earth Sciences in association with Vijnana Bharati (VIBHA) organise IISF every year.
- **IISF 2020:** The Council of Scientific and Industrial Research(CSIR) will spearhead the IISF 2020 with support of all other concerned ministries and departments.

Additional Facts:

- **Vijnana Bharati(VIBHA):** It is a non-profit organisation which was previously known as 'Swadeshi Science Movement'. It works towards popularization of science & implementation of modern technology & ancient sciences in India.
- **Founded by:** It was founded in 1991 by the eminent scientists of Indian Institute of Science, Bengaluru led by Prof. K.I. Vasu.

Kashmir to host the 50th annual Skai International Asia Area(SIAA)

News: Kashmir has won the bid to host the 50th annual Skai International Asia Area(SIAA) Congress in 2021.

Facts:

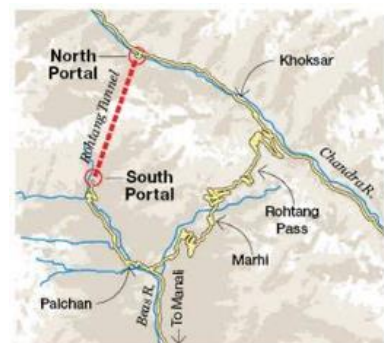
- **SIAA:** It is an organisation of tourism leaders around the world, promoting global tourism and friendship since 1934.
- **Significance:** It is an Affiliated Member of the World Tourism Organization (UNWTO).
- **Which initiatives it supports?** The organization supports the Sustainable Tourism-Eliminating Poverty Initiative(ST-EP).
- ST-EP is a programme of the UNWTO which brings together UN agencies, governments, donor agencies, NGOs and other stakeholders to unite in a concerted effort to use tourism in actively combating poverty throughout the world.

Prime minister inaugurates Atal Tunnel

News: Prime Minister has inaugurated the Atal Tunnel in Himachal Pradesh Rohtang.

Facts:

- **Atal Tunnel (earlier known as Rohtang Tunnel):** It is a 9.02 km long tunnel that connects Manali to Lahaul-Spiti valley throughout the year.
- **Significance:** The tunnel is the world's longest highway tunnel above the altitude of 10,000 feet (3000 metres).



- **Constructed by:** The tunnel has been constructed by the Border Roads Organisation(BRO).

Additional Facts:

BRO: It was formed in 1960 to secure India's borders and develop infrastructure in remote areas of the north and north-east states of the country. It has been under the control of the Ministry of Defence since 2015.

Pointly for Miscellaneous:

- **Operation Meri Saheli:** It was launched by Indian Railways with an aim to provide safety and security to lady passengers travelling by trains for their entire journey from starting station to destination station.
- **Dhulasidh Hydro Project:** It has been proposed to be constructed on the Beas river in Himachal Pradesh. The aim is to generate hydroelectricity and use water for irrigation in adjoining areas of the districts.
- **RAISE 2020- 'Responsible AI for Social Empowerment 2020:** It has been organised by the Ministry of Electronics and Information Technology in association with the NITI Aayog. It aims to bring together people to exchange ideas on the use of Artificial Intelligence for social empowerment, inclusion and transformation in industries such as education, smart mobility, agriculture and healthcare among others.
- **Gov Tech-Thon 2020:** It has been organized by Ministry of Electronics and Information Technology(MeitY), National Informatics Centre (NIC), IEEE Computer Society and Oracle.
- It aims to incubate new ideas, boost innovation and use technology in agriculture and allied sectors.
- **Parampara Series:** It is an annual festival of music and dance organised by Natya Tarangini in partnership with the United Nations.
- **Moushik:** It is an indigenous microprocessor developed by IIT Madras. It can be used for the rapidly-growing Internet of Things(IoT) devices.
- **Kisan Suryodaya Yojana:** It is a scheme launched by the Gujarat Government with an aim at providing day-time electricity to the farmers in the state of Gujarat for irrigation and farming purposes.

