

Current Affairs MONTHLY



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By
CivilsTap Himachal



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+91 7814622609

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GENERAL STUDIES 2.

INDIAN RELATIONS

WHO'S PANDEMIC TREATY TO PREVENT FUTURE GLOBAL HEALTH DISASTERS

Context

- Members of the World Health Organisation (WHO) held the first round of negotiations towards the pandemic treaty on February 24, 2022.
- The meeting was aimed at agreeing on ways of working and timelines for a “convention, agreement or other international instrument” to prevent further pandemics and to improve the preparedness and response in case of its occurrence.

What is the pandemic treaty?

- In December 2021, the World Health Assembly agreed to start a global process to draft the pandemic treaty.
- The **need for an updated set of rules** was felt after the Covid-19 pandemic exposed the shortcomings of global health systems.
- The Health Assembly adopted a decision titled “The World Together” at its second special session since it was founded in 1948.
- Under the decision, the health organisation established an **intergovernmental negotiating body (INB)** to draft and negotiate the contents of the pandemic treaty in compliance with Article 19 of the WHO Constitution.
- The pandemic treaty is **expected to cover aspects** like **data sharing** and **genome sequencing of emerging viruses and equitable distribution of vaccines** and drugs and related research throughout the world.
- Solutions to the Covid-19 pandemic have seen an inequitable distribution of vaccines so far, with poorer countries at the mercy of others to receive preventive medication. Most countries have followed the “me-first” approach which is not an effective way to deal with a global pandemic.
- The European Union (EU) also wants a ban on wildlife markets to be included in the treaty. A widely-accepted theory points that the novel coronavirus may have jumped from animals to humans in a wildlife market of China.
- While the **EU wants the treaty to be legally binding**, the **U.S., Brazil and India have expressed reservations about the same**. The legal nature of the treaty is yet to be defined.

Article 19 of the WHO Constitution

- Article 19 of the WHO Constitution gives the World Health Assembly the authority to adopt conventions or agreements on matters of health.
- A two-third majority is needed to adopt such conventions or agreements.
- The WHO Framework Convention on Tobacco Control was set up under Article 19 and it came into force in 2005.

Impact of the Covid-19 pandemic so far

- More than 437 million Covid-19 cases have been globally reported so far, and more than 5.9 million people have lost their lives.
- In India, over 34 million cases have been reported so far. Death toll stands at over five lakh.

Timeline of the treaty

- The INB held its first meeting on February 24, 2022. The second meeting, where the members are expected to discuss the progress on a working draft, is scheduled to be held by August 1, 2022.
- A progress report is expected to be delivered to the 76th World Health Assembly in 2023, and its outcome will be submitted to the 77th World Health Assembly in 2024 for consideration. Intermittent public hearings are also planned.

The Hindu link

<https://www.thehindu.com/news/international/explained-whos-pandemic-treaty-to-prevent-future-global-health-disasters/article65144675.ece?homepage=true>

Question- Write a short note on the need of a W.H.O backed pandemic treaty considering various challenges faced by the world in tackling Covid-19 pandemic.

THE INTERNATIONAL CRIMINAL COURT AND THE CASES IT DEALS WITH

Context

- In the wake of the Russia-Ukraine standoff, Karim A.A. Khan, the prosecutor of the International Criminal Court (ICC), located in The Hague, The Netherlands, said on February 28, that he will open an investigation into the situation in Ukraine “as rapidly as possible”.
- He believes that **both war crimes and crimes against humanity have been committed in Ukraine.**
- In the past few days, Ukrainian authorities have accused Russian forces of targeting civilian and residential areas.
- While Ukraine is not a state party to the ICC, it has accepted the court’s jurisdiction in its territory twice in the past, adding that the investigation will be built upon what the ICC has found since 2013, while examining possible war crimes in Ukraine.
- Russia is also not an ICC member.

Background of ICC role in the conflict

- An Investigation was opened into Ukraine first in relation to deaths of countless protesters at the hands of security forces in early 2014 before the ouster of the country’s former pro-Russian leader.
- This was followed by Russia illegally annexing Crimea and backing separatist forces in the eastern Ukraine.
- This conflict between separatist and Ukrainian forces, continuing since 2014, has killed nearly 14,000 people till the start of 2022.

About International Criminal Court

- The International Criminal Court is a **permanent court to prosecute serious international crimes committed by individuals.**
- It tries **crimes such as genocide, war crimes, crimes against humanity, and aggression.**
- The court was **established to fight global impunity and bring to justice criminals under international law,** regardless of their rank or stature.
- Before the ICC became functional in 2002, its founding treaty was adopted by the UN General Assembly in 1998 in Rome, Italy, thereby making it the **Rome Statute.**

Membership

- To become a member of the ICC or State party to the Rome Statute, **countries have to sign the statute and ratify it under their respective legislatures.**

- 123 countries are currently members of the ICC, with African countries making up the largest bloc.
- Notably, countries including **India, China, Iraq, North Korea and Turkey never signed the Rome Statute**, while others including the **US, Russia, Israel and Syria signed**, but **never ratified** it.

Functioning of ICC

- The court carries out its investigations **through the Office of the Prosecutor** and **has 18 judges**.
- Both the **judges and prosecutors hold non-renewable nine-year terms**.
- There are **pre-trial, trial, and appellate benches in the ICC**.
- The prosecutor conducts a preliminary examination in a matter, before seeking permission from pre-trial judges to open a full investigation. The initial examination must conclude that the crimes in question are of "sufficient gravity".
- The **prosecutor can open an investigation in three ways**:
 - When a case is referred by a member country in its own territory;
 - When a case is referred by the UN Security Council; and
 - When the prosecutor takes up a case *proprio motu* or on his own.
- **Non-member states can also be investigated in three ways**:
 - If alleged crimes were perpetrated by non-members in member states,
 - If the non-members accept the court's jurisdiction, or
 - When the Security Council authorises it.
- Since its inception, 30 cases, some with multiple suspects, have been opened before the ICC.
- It has so far convicted ten individuals and acquitted four; while issuing a total of 35 arrest warrants. 17 people have been detained by the ICC so far and 13 remain at large.

Past cases dealt by ICC

- In 2011, the UN Security Council had referred the situation in **Libya** to the ICC, with allegations that **Muammar Gaddafi**, the then de facto leader of Libya, and his son and brother in law, were responsible for civilian killings during the Arab Spring protests.
- Similarly, ICC had issued arrest warrants in 2009 and 2010 against former **Sudanese head of state Omar Al Bashir for alleged war crimes** related to murder, torture, rape, attacking civilian, pillaging, and other serious crimes.
- Recently in November 2021, after concluding preliminary examination, the ICC decided to open an investigation into **alleged crimes against humanity committed during Venezuela's clampdown on anti-government protesters** in 2017, when they were demonstrating against its president Nicholas Maduro's controversial actions against opposition leaders. Venezuela is an ICC member.
- In 2019, the ICC opened an investigation into alleged **persecution of the Rohingya population across the borders** of Myanmar and Bangladesh, resulting in the forceful displacement of an estimated 6,00,000 to one million Rohingyas from Myanmar to Bangladesh.
- Investigation is also going on into **alleged war crimes committed in Afghanistan** since 2003, which is when it became an ICC member, but the path of the investigation has been a rocky one.
- While investigations are ongoing into alleged war crimes committed in countries including Palestine, Burundi, Côte d'Ivoire, Kenya, Libya and Mali; some convictions have been made in cases from the Democratic Republic of Congo, Uganda and Mali.

Criticisms of the court

- The court has been criticised for the **pace of investigations and judgements**.
- After 19 years of being active, the court has convicted 10 persons accused in a small number of cases and acquitted four individuals. Some experts question whether the time, efforts and financial resources invested in the court by member countries is worth the outcome. The court's annual budget for 2021 was over \$160 million.
- Criticisms also hint at the fact that the **court may be shying away from taking on western powers like the United States**. This was pointed out first, when the court denied permission to start an investigation into

Afghanistan in 2019, and second, when the current prosecutor wanted to restart the investigation after the Taliban takeover.

- **Another point of contention** is that barring recent years, the court, since its formation, **largely took up investigations into alleged crimes committed in African countries**. All of the nearly 30 cases currently in the trial stage before the court are from African countries.

The Hindu link

<https://www.thehindu.com/news/international/expained-the-international-criminal-court-and-the-cases-it-deals-with/article65183057.ece?homepage=true>

Question- Describe the functioning of International Criminal Court and the criticism it faces.

THE EFFECTS OF THE RUSSIA-UKRAINE CONFLICT ON MARITIME TRADE

Context

- As Russia continues its military campaign in Ukraine, the Western economies and their allies have adopted punitive measures, including the imposition of crippling sanctions, in order to effectively paralyse the Russian economy and its citizens.
- As a result of interruptions in the global supply chain, the shipping industry is projected to be particularly hard hit, with delays and shipping prices expected to rise.

Impact on maritime trade so far in Ukraine

- When the war began, some 15 seaports in Ukraine were forced to close their doors. The loading and unloading of freight has been suspended.
- Approximately 140 ships that were berthed in Ukrainian ports at the time of the conflict have remained in the ports ever since. So yet, no attack has been launched on any of the ports or the ships that are berthed in them.
- Two ships were assaulted while in port, prompting traders to steer clear of the Black Sea as a shipping route for their vessels. For mariners, the safest location to be in the event of an accident is always the ship, which is equipped with electricity, food, and the ability to produce water. According to Sanjay Prashar, managing director of VR Maritime Services, although bunkers at ports have been found for the purpose of safely lodging seafarers, ship crews have not yet left their vessels.
- One of the company's ships has become trapped in a port in Ukraine. Some of the stranded ships at Ukrainian ports had crews from India on board, according to reports. Aside from a few isolated strikes, ports and nuclear power plants have not been subjected to significant warfare or attack as strategic assets. So far, the Russian Army and Air Force have been active in the conflict, with just a modest naval operation at Kerch serving as an exception, according to Pritam Banerjee, a logistics specialist.
- Port cities like as Mariupol have been assaulted from the land, but the Ukrainian people have held firm and resisted the invasion. As a result, the Ukrainian president has warned that Russian warships are preparing to strike the Odessa port. This would represent a significant escalation in the war.
- There will be a direct threat to all commerce ships in the area. As a direct result of the war, insurance rates for ships operating in the Black Sea will increase.

What has been the impact globally?

- In the previous week, crude oil prices have risen by 20% in response to worries about probable supply interruptions, particularly since Russia is a key exporter of oil and natural gas through pipelines as well as ships.
- The Black Sea is home to the few warm water ports that the nation possesses, and it also serves as the battleground for the conflict. Bunker fuel, also known as ship fuel, is increasing in price in tandem with the

rise in the price of crude oil. Fuel expenses are the most significant component to a ship's running costs, and an increase in fuel prices will have a cascading impact on shipping costs and freight rates.

- Container freight charges have increased as a result of the epidemic, and they are expected to rise much more. Pritam Banerjee, on the other hand, believes that the spike is just temporary and is mostly due to the oligopolistic dominance that select companies have over container transportation.
- He says that Russia and even Ukraine are insignificant in the container trade, and that as a result, global container freight prices should not be significantly influenced. Bulk transportation, especially oil and gas tankers, would be severely hampered by the situation. Russia and Ukraine are important traders in grains, minerals, and oil, among other commodities.
- High insurance rates and supply disruptions will cause consternation in the industry. In the event of an escalation, the Baltic Sea and the North Sea shipping traffic might be impacted as well. Insurance premiums will rise as a result of the threat of war.
- While Russia is unlikely to launch an assault in the Mediterranean, insurance premiums for ships operating on those routes, which serve as the centre of European trade, may rise as a result.

Role of Turkey in this conflict

- Turkey has authority over the entry and departure points to the Black Sea, and as a result, has a voice in the flow of ship traffic in the Black Sea. Passage over the Bosphorus Strait by Russian Navy ships has been prohibited by the Turkish government.
- Turkey is not a signatory to the United Nations Convention on the Law of the Sea, which considers the seas to be common property and permits even warships to sail across the territorial waters of a nation without being prosecuted for their actions.
- Turkey is a signatory to the Montreaux Convention, which grants it more authority over the Straits of Malacca and the surrounding waters. It is assured that commerce vessels belonging to belligerents in a conflict would have free passage, especially if Turkey is not a belligerent itself. In addition, the treaty precisely defines what constitutes a warship and what does not.
- Having stated that, any interpretation that seeks to restrict Russian commerce ship mobility will be a serious escalation of the situation and will further aggravate it.

The pandemic saw a disruption in crew change in merchant ships. Will this conflict have a similar impact?

- The war's influence on the proportion of Ukrainian and Russian sailors in the worldwide seafarer employment is a lesser-discussed consequence. The countries of China, the Philippines, and India make substantial contributions to the worldwide seafarer workforce.
- Mr. Banerjee thinks that Russia and Ukraine combined provide about 15 percent of the world's merchant marine personnel. When Russian and Ukrainian seamen operate aboard commerce ships, it is customary for them to work side by side.
- Their ability to board and leave merchant ships will be significantly hampered, posing a significant challenge to the worldwide maritime industry's manpower requirements.
- The epidemic had caused crew members to be unable to move freely, and things were only beginning to normalise.

The Hindu link

<https://www.thehindu.com/news/international/the-effects-of-the-russia-ukraine-conflict-on-maritime-trade/article65198645.ece?homepage=true>

Question- What could be the probable impacts of Russia-Ukraine conflict on maritime trade?

Context

- The global financial crime watchdog **Financial Action Task Force (FATF)** in its latest plenary meeting, decided to retain Pakistan on its terror financing 'grey list', asking the neighbouring country to expeditiously address the remaining deficiencies in its financial system.
- It has also added UAE to the list this time, which has promised to take "robust" actions in countering terror financing and money laundering.

About FATF

- The Financial Action Task Force is **an international watchdog for financial crimes such as money laundering and terror financing.**
- As per the official definition, it is an inter-governmental body that sets international standards that aim to prevent these illegal activities and the harm they cause to society.
- Origin
- The **FATF was established at the G7 Summit of 1989 in Paris**, over concerns of the member countries about growing money laundering activities. The heads of G7 countries and the president of the European Commission brought together a Task Force after addressing loopholes in the global financial system.
- Later, in the aftermath of the 9/11 terror attack on the United States, FATF also added terror financing as a main focus area. This was broadened in 2012, to include restricting the funding of weapons of mass destruction.
- The FATF currently has 39 members. The decision making body of the FATF is known as its plenary, which meets thrice a year. Its meetings are attended by 206 countries of the global network, including members, and observer organisations, such as the World Bank, some offices of the United Nations and regional development banks.

Working of FATF

- The FATF **sets standards or recommendations for countries to achieve in order to plug the holes in its financial system** and make it less vulnerable to illegal financial activities.
- According to the last update in 2012, FATF has 49 consolidated recommendations for countries to follow in order to set up an Anti-Money Laundering/Combating the Financing of Terrorism (AML/ CFT) regime.
- The FATF conducts regular peer-reviewed evaluations called Mutual Evaluations (ME) of countries, starting with member countries, to check their performance on standards prescribed by it. The reviews are carried out by FATF and FATF-Style Regional Bodies (FSRBs), which then release Mutual Evaluation Reports (MERs). For the countries that don't perform well on certain standards, the FATF and FSRBs draw up time-bound action plans to fight financial crimes.
- The FATF recommendations for countries range from assessing risks of crimes to setting up legislative, investigative and judicial mechanisms to pursue cases of money laundering and terror funding.

What are FATF's 'grey' and 'black' lists?

- At the end of every plenary meeting, FATF comes out with two lists of countries.
- **The Grey countries** are those that are "actively working" with the FATF to counter criminal financial activities. In their cases, the watchdog does not tell other members to carry out due-diligence measures vis-a-vis the listed country but does tell them to take into account the risks such countries possess.
- Currently, **there are 23 countries on the grey list**, with one new addition and one removal. The **United Arab Emirates** was added to the list at the end of this plenary meet while Zimbabwe was taken off it. Besides, some of the other countries on the list are **Pakistan, Myanmar, Morocco, Philippines, Panama, Senegal, Albania, Jamaica and Turkey.**
- As for the **black list**, it means countries designated by the FATF as '**high-risk jurisdictions subject to call for action**'. In this case the countries have considerable deficiencies in their AML/CFT regimens. For such countries, the body calls on members and non-members to apply enhanced due-diligence and in the most serious cases, apply counter-measures such as sanctions. **Currently, two countries- North Korea and Iran are on the black list.**

- Being listed under the FATF's two lists makes it difficult for countries to get aid from organisations like the International Monetary Fund (IMF), Asian Development Bank (ADB) and the European Union. According to an IMF study, it may also affect capital inflows, foreign direct investments and portfolio flows in the country.

The Hindu link

<https://www.thehindu.com/news/international/the-lists-of-the-fatf-and-pakistans-position/article65200676.ece#:~:text=Besides%2C%20some%20of%20the%20other,subject%20to%20call%20for%20action>'.

Question- Write a short note on Financial Action Task Force and its operations in prevention of money laundering and terrorism financing.

PERMANENT NORMAL TRADE RELATIONS

Context

- To punish Russia for its actions in Ukraine, the United States and other members of the Group of Seven (G7) will remove Russia's "Permanent Normal Trade Relations (PNTR)" designation.
- Taking this step would open the door for the United States to slap tariffs on a wide variety of Russian imports, increasing the pressure on a country that is on the verge of entering a serious recession.
- **A recession** is defined as a period of falling economic performance throughout an entire economy that lasts for many months or more.
- The G7 is a group of industrialised western countries (**the United Kingdom, Canada, France, Germany, Italy, Japan, and the United States**) that was created in 1975.

About PNTR

- The designation of Permanent Normal Trade Relations (PNTR) in the United States is a **legal classification for free trade with a foreign country**.
- In the United States, the designation was changed from Most Favored Nation (MFN) to Preferred Nation for Trade and Investment (PNTR) in 1998.

What is the meaning of MFN Status?

- In order to profit from each other's lowest tariffs, maximum import quotas, and fewest trade obstacles for products and services, members of the World Trade Organization (WTO) agree to treat other members equally.
- **Most Favoured Nation (MFN)** treatment is the term used to describe this concept of non-discrimination.
- This is one of the safeguards in place to ensure that there is no discrimination in commerce. 'National Treatment' is another another term to consider.
- Article 1 of the General Agreement on Tariffs and Trade (GATT), signed in 1994, mandates every member nation of the World Trade Organization (WTO) to grant MFN status to all other members.
- There are certain exceptions, such as when members enter into bilateral trade agreements or when members grant developing nations preferential access to their markets, but these are rare.
- WTO members can apply any trade sanctions they choose on countries that are not members of the organisation, such as Iran, North Korea, Syria, or Belarus, without violating global trading norms.
- In international commerce, a country's MFN status (also known as treatment) is granted to another country.
- **Example:** From the date of entry into force of the so-called Marrakesh Agreement, which established the WTO, India provided MFN status to all WTO member nations, including Pakistan; this status has been extended to all WTO member countries since.

- A nation that has been granted MFN status will not be subjected to discrimination or harsher treatment than any other nation that has been granted MFN status.
- If you provide someone a particular favour (such as a lower customs tax rate for one of their items), you must reciprocate with the same favour for all other WTO members.
- There is no official mechanism for suspending MFN treatment, and it is unclear whether countries are required to notify the World Trade Organization (WTO) if they take this action.
- In 2019, India revoked Pakistan's MFN designation following a suicide assault by a Pakistan-based Islamist organisation that claimed the lives of 40 police officers. Pakistan never requested that India be granted MFN status.

What does it mean to be stripped of MFN status?

- The revocation of Russia's MFN status sends a strong signal to the world that the United States and its Western allies do not regard Russia to be an economic partner in any form, but it does not alter the trading environment in and of itself.
- However, it does provide the Western allies the authority to increase import duties or quotas on Russian goods, or even to prohibit them entirely, as well as to restrict services that are exported from the nation.
- They may also fail to recognise the existence of Russian intellectual property rights.
- Prior to the revocation of MFN status, the United States has already imposed a prohibition on the importation of Russian oil and gas into the country.
- Furthermore, the European Union has already prohibited almost 70% of all imports from Belarus, which is not a member of the World Trade Organization and is Russia's partner in the conflict with Ukraine. These items include tobacco, potash, and wood and steel products.

The Hindu link

<https://www.thehindu.com/incoming/us-allies-to-end-normal-trade-relations-with-russia/article65215475.ece/amp/>

Question- What do you mean by Permanent Normal Trade Relations designation? How does losing this designation might impact Russia's trade with the world?

INTERNATIONAL COURT OF JUSTICE

Context

- The International Court of Justice has ruled that Russia should suspend its military operations in Ukraine immediately. The ICJ in its order said that the Russian Federation shall immediately suspend the military operations that it commenced recently in the territory of Ukraine.

About ICJ

- The ICJ is the **principal judicial organ of the United Nations (UN)**. It was established in 1945 by the Charter of the United Nations and began work in 1946.
- The court is the **successor to the Permanent Court of International Justice (PCIJ)**, which was brought into being through, and by, the League of Nations, and which held its inaugural sitting at the Peace Palace in The Hague, Netherlands, in 1922.
- After World War II, the League of Nations and PCIJ were replaced by the United Nations and ICJ respectively. The PCIJ was formally dissolved in 1946, and its last president, Judge José Gustavo Guerrero of El Salvador, became the first president of the ICJ.
- The first case, which was brought by the UK against Albania and concerned incidents in the **Corfu channel** — the narrow strait of the Ionian Sea between the Greek island of Corfu and Albania on the European mainland — was submitted in 1947.

Seat and role

- Like the PCIJ, the ICJ is based at the **Peace Palace in The Hague**. It is the **only one of the six principal organs of the UN that is not located in New York City**. (The other five organs are the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, and the Secretariat.)
- According to the ICJ's own description, its role is "to settle, in accordance with international law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by authorized United Nations organs and specialized agencies". The court "as a whole must represent the main forms of civilization and the principal legal systems of the world".
- **English and French** are the ICJ's official languages.
- **All members of the UN are automatically parties to the ICJ statute, but this does not automatically give the ICJ jurisdiction over disputes involving them.** The ICJ gets jurisdiction only if **both parties consent to it**.
- The judgment of the ICJ is **final and technically binding** on the parties to a case. There is **no provision of appeal**; it can at the most, be subject to **interpretation** or, upon the discovery of a new fact, **revision**.
- However, the ICJ has **no way to ensure compliance of its orders**, and its authority is derived from the willingness of countries to abide by them.

Judges of the court

- The ICJ has **15 judges who are elected to nine-year terms by the UN General Assembly and Security Council, which vote simultaneously but separately**. To be elected, a candidate must receive a majority of the votes in both bodies, a requirement that sometimes necessitates multiple rounds of voting.
- A **third of the court is elected every three years**. Judges are **eligible for re-election**.

Reference link

<https://newsonair.gov.in/News?title=International-Court-of-Justice-asks-Russia-to-immediately-suspend-its-military-operations-in-Ukraine&id=437348>

Question- Write a short note on International Court of Justice and its functioning.

GEOGRAPHY AND INDIA'S STRATEGIC ADVANTAGE

Context

- The Navy said it is building capacity to ensure that whatever capacity China can bring into the region, it has all those capabilities to counter that, at the parliamentary standing committee on defence.

How geography helps India

- India's **central location in the Indian Ocean** makes it the natural naval power in that ocean. India can use **historical ties, the influence of diaspora communities**, and the guarantee of security to increase its naval involvement in both the eastern and western extremities of the Indian Ocean, near the **Straits of Malacca and in the Persian Gulf** and the **Red Sea**.
- **Lord Curzon** pointed out that **India could veto any rival in Tibet, but India has lost its position** there since the People's Liberation Army (PLA) of China moved into Tibet in 1950. Having lost control of the high ground — literally — in regards to Tibet, there is little India can do to exert influence in that direction, or over a stronger China.
- India **could shore up its relations with Southeast Asia**, which shares both land and sea borders with India and the Indian Ocean.
- India's **only foreign military base is located in Tajikistan**, which **allows** it to continue to be involved in **Afghanistan and Central Asia**.
- Modern India is situated between the Middle East, Central Asia, China, Southeast Asia, and the Indian Ocean.

- India can also use its central location in the Indian Ocean to become a **hub of transportation, communication, and trade.**
- On the high seas it **commands the routes to Australia and the China Sea.**
- In the case of China, the Navy said **China's coastline is 18,000 km** and has other adversaries. So, the **number of assets** that China can bring into the Indian Ocean is much less.

What India is doing to protect Indian Ocean Region

- **Building the capacity** to match the assets that she can bring into our waters.
- India is improving the capacity to have anti-submarine warfare capability enhanced so that the Navy can detect China's submarines
- **Air surveillance and surveillance aircraft** which can carry out **Anti-Submarine Warfare (ASW)** and also carry out anti-underwater surveillance by dropping sonobuoys.
- The Navy has inducted 12 P-8I long-range **maritime patrol aircraft**
- Navy has significantly **scaled up ASW training and cooperation**, especially with the **Quad navies**
- India has also taken up **capacity building in a big way to assist littoral states** in augmenting their armed forces.

The need

- The **Chinese naval presence in the Indian Ocean Region (IOR)** has steadily been increasing since 2008 and it now has a **naval base at Djibouti** in addition to several dual use facilities across the region.
- **IOR has multiple security challenges** as it contains **major shipping lines** and nearly 1,20,000 ships transit through various choke points. Almost 13,000 ships are in IOR at any point of time and the region is the centre of gravity of **piracy and trans-national crimes** and also **locus of 70% of world's natural disasters.**

The Hindu link

<https://www.thehindu.com/news/national/geography-in-indian-ocean-is-our-basic-advantage-and-we-are-utilising-it-navy/article65240475.ece>

Question- Securing Indian Ocean Region is essential for India's strategic and economic interests. Explain.

REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP

Context

- Japan has conveyed that it still has not given up hope that India might reconsider joining the Regional Comprehensive Economic Partnership (RCEP) that it quit in 2019, indicating that India-Japan collaborations in other countries may be impacted if India continues to stay out.
- The Japanese Government said that India will be treated exceptionally as a founding member and if India is willing to negotiate its re-entry to RCEP, Japan would be happy to take a lead on that.

About RCEP

- 15 Asia-Pacific nations has signed the Regional Comprehensive Economic Partnership (RCEP) which covers over 2.2 billion people and accounts for 30 per cent of the world's economy. It came into force on January 1 this year.
- The signatory countries include **10 Association of Southeast Asian Nations (ASEAN) members** — Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam — and their five trade partners — **Australia, China, Japan, South Korea and New Zealand.**
- Described as the **"largest" regional trading agreement** to this day, RCEP was originally being **negotiated between 16 countries** — **ASEAN members** and six countries namely **Australia, China, Korea, Japan, New Zealand and India.**

- The purpose of RCEP was to make it easier for products and services of each of these countries to be available across this region. The agreement also includes rules on intellectual property, telecommunications, financial and professional services, and e-commerce.
- Negotiations to chart out this deal had been on since 2013, and India was expected to be a signatory.

India's exit

- However, in 2019, **India announced its decision to not join RCEP.**
- This came amid concerns that elimination of tariffs would open India's markets to imports, which in turn could harm local producers.

Concerns of India

- **Imbalance in the negotiations between goods and services** was the main concern for India. Member countries pressured India to commit to **zero tariffs on more than 90 percent** of tradable goods with few exemptions.
- However, they were reluctant to India's proposal to allow **free movement of Indian skilled professionals** in the RCEP region.
- Indian industries were also worried that with RCEP allowing a wide range of goods to import at zero tariffs, **Chinese goods will flood India.** It will cause serious damage to the "Make in India" programme.
- India has **trade deficits with most of the RCEP countries**, and some experts feel that India has been unable to leverage its existing bilateral free trade agreements with several RCEP members to increase exports.

Opportunities for India

- Despite these concerns, RCEP will offer India an opportunity to engage with China.
- It will give India a chance to **stall some of its unfair practices** such as giving subsidies unethically and stalling Indian products, such as pharmaceuticals, on the pretext of quality control.
- RCEP will give Indian exporters a window to be a **part of global value chains.**
- Also, there are concerns that India's decision would **impact its bilateral trade ties with RCEP member nations**, as they may be more inclined to focus on bolstering economic ties within the bloc.
- The move could potentially leave India with **less scope to tap the large market that RCEP presents** —the size of the deal is mammoth, as the countries involved account for over 2 billion of the world's population.

The Hindu link

<https://www.thehindu.com/news/international/japan-still-hopes-india-will-re-join-rcep-japan-cabinet-official-noriyuki-shikata/article65243818.ece>

Question- Joining Regional Comprehensive Economic Partnership (RCEP) can provide multiple opportunities for India. Elucidate.

WORLD HAPPINESS REPORT

Context

- In spite of the fact that India has one of the world's fastest-growing economies, it is one of the world's unhappiest countries.
- The World Happiness Report 2022, released ahead of the United Nations International Day of Happiness, which will be marked on March 20, ranks India 136th, ninth from the bottom of the list.

The World Happiness Report

- The World Happiness Report is a publication of the Sustainable Development Solutions Network that is based on data from the Gallup World Poll and is released every year.

- Beyond economic and social characteristics, the study, now in its 10th year, makes use of worldwide survey data to report on how individuals perceive their own lives, in addition to economic and social parameters.
- In order to arrive at these rankings, They used **average data from a three-year period between 2019 and 2021.**
- The World Happiness Report assesses levels of happiness throughout the world by taking into consideration characteristics such as GDP, social support, personal freedom, and degrees of corruption in each country.

Highlights of the report

- According to the 10th edition of the World Happiness Report, Finland topped the list for the fifth year in a row, surpassing the United States.
- **Finland came in first, followed by Denmark, Iceland, Switzerland, and the Netherlands. Finland was the only country to make the top five.**
- When it comes to other western countries, although the United States came in at number 16, Britain was at number 17 and France came in at number twenty.
- **India's performance in the World Happiness Measure remained weak, with its place improving just barely to 136 from 139** the previous year, according to the index.
- Only Afghanistan, which is administered by the Taliban, performed worse than India among the South Asian countries.
- Afghanistan has been rated the world's unhappiest country, placing last on a global happiness rating that includes 146 countries.
- Pakistan (121) and Sri Lanka (127) managed to improve their positions on the list, but Nepal (84), Bangladesh (94), and Pakistan (121) did not.
- The Happiness Research also revealed that India was one of the nations that had seen a decline in life ratings by more than a full point on a scale ranging from 0 to 10 over the previous ten years, according to the report.

Significance

- Over the years, happiness has emerged as a critical indicator to measure not just for countries, but also for corporations.
- The report's main purpose is to identify the most important drivers of well-being.
- This information is anticipated to assist governments in developing policies that will result in happier communities.

Interconnections between law, government, and happiness:

- Happiness has become widely recognised as a desirable objective of public policy. A new narrative in which the links between law, governance, and happiness are being explored has gotten a boost from this conversation.
- According to the findings of various countries, the countries with larger GDP and per capita income are not always the happiest countries, and that there is a relationship between the condition of happiness and the rule of law.
- Over the years, the WHRs have revealed that persons tend to have the following characteristics:
- Mental illness is a problem.
- A low level of subjective well-being is indicated.
- Despite high income levels, there is a negative opinion of government and law and order.

The Hindu link

<https://www.thehindu.com/news/international/explained-what-is-the-world-happiness-report/article65240772.ece>

Question- Establishing the interconnections between law, government, and happiness, describe the reasons for India lagging in World Happiness Index?

BIMSTEC

Context

In News

- Recently, the Minister of External Affairs of India participated in the **18th BIMSTEC Ministerial Meeting** in Colombo.
- India emphasised the **grouping's commitment** to intensify and expand areas of cooperation, especially connectivity, energy and maritime cooperation.
- Cooperation on port facilities, ferry services, coastal shipping, grid connectivity and motor vehicles movement are key.

About BIMSTEC

- The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a **regional organisation** that was established on 06 June 1997 with the signing of the **Bangkok Declaration**.
- Initially known as **BIST-EC (Bangladesh-India-Sri Lanka-Thailand Economic Cooperation)**, the organisation is now known as BIMSTEC and comprises seven Member States with the admission of Myanmar on 22 December 1997, and Bhutan and Nepal in February 2004.
- The grouping holds **annual meetings** hosted by member states based on **alphabetical rotation**. Sri Lanka is the host nation this time.
- **Focused Sectors:**
- Being a sector-driven grouping, cooperation within BIMSTEC had initially focused on six sectors in 1997 (**trade, technology, energy, transport, tourism, and fisheries**) and expanded in 2008 to incorporate agriculture, public health, poverty alleviation, counter-terrorism, environment, culture, people-to-people contact, and climate change.
- Subsequently, following steps to rationalise and reorganise sectors and sub-sectors, cooperation was reorganised in 2021 under the following **sectors and sub-sectors** led by the respective Member States:

Objectives of BIMSTEC

- To create an **enabling environment for rapid economic development** through identification and implementation of specific cooperation projects in the already agreed areas of cooperation and such other areas that may be agreed upon by the Member States.
- To accelerate the **economic growth and social progress** in the Bay of Bengal region through joint endeavours in a spirit of equality and partnership.
- To **promote active collaboration and mutual assistance** on matters of common interest in the economic, social, technical and scientific fields.
- To **provide assistance to each other in the form of training and research facilities** in the educational, professional and technical spheres.
- To **cooperate more effectively in joint efforts** that are supportive of and complementary to national development plans of the Member States which result in tangible benefits to the people in raising their living standards, including through generating employment and improving transportation and communication infrastructure.
- To **cooperate in projects that can be dealt with most productively** on a regional basis among the BIMSTEC Member States and that make best use of available synergies.
- To **maintain peace and stability in the Bay of Bengal region** through close collaboration in combating international terrorism, transnational organized crimes as well as natural disasters, climate change and communicable diseases.
- To **maintain close and beneficial cooperation** with existing international and regional organisations with similar aims and purposes.

- To **endeavour to eradicate poverty from the Bay of Bengal region.**
- To **establish multidimensional connectivity, promote synergy** among connectivity frameworks in the region, as a key enabler to economic integration for shared prosperity.
- To **promote trade and investment as a major contributing factor** for fostering economic and social development in the region.

Significance

- **The BIMSTEC region brings together 1.67 billion people and a combined GDP of around US \$ 2.88 trillion.**
- The **growing value of BIMSTEC** and its attempt to generate synergy through **collective efforts by member states** can be understood, for three key reasons.
- There is a **greater appreciation of BIMSTEC's potential** due to **geographical contiguity, abundant natural and human resources, and rich historical linkages** and a cultural heritage for promoting deeper cooperation in the region.
- **The region has the potential** to become the epicentre of the Indo-Pacific idea — a place where the strategic interests of the major powers of East and South Asia intersect.
- It serves as a **bridge between two major high-growth centres of Asia — South and Southeast Asia.**

India and BIMSTEC

- BIMSTEC connects **South and Southeast Asia** and also the **ecologies of the Great Himalayas and the Bay of Bengal.**
- BIMSTEC has special **significance for India in a changing mental map** of the region.
- India has made the **Bay of Bengal integral to India's 'Neighbourhood First' and 'Act East' policies** which can accelerate the process of regional integration. BIMSTEC matters for India and the region.
- BIMSTEC has **huge potential as a natural platform** for development cooperation in a rapidly **changing geopolitical calculus** and **can leverage its unique position as a pivot in the Indo-Pacific region.**
- India has implemented its promise to set up a **Centre for Bay of Bengal Studies (CBS) at Nalanda University, Bihar** for research on art, culture and other subjects related to the Bay of Bengal.
- The quest for economic growth and the development of the BIMSTEC region can **be achieved with single-minded focus** and cooperation among the member countries.
- In this endeavour, **India has a key role in accelerating regional cooperation under the BIMSTEC framework** and in making it vibrant, stronger and result-oriented.

Challenges

- **Persisting organisational weaknesses:** Inconsistent levels of commitment and a general ambiguity regarding how to engage with other institutional actors have been the **key reasons hampering the functioning of the organisation.**
- **Poor connectivity:** It is troubled by poor road and rail connectivity, insufficient last-mile links and cumbersome customs and clearance procedures which hamper trade.
- **Lack of Cohesion & coordination:** Cohesion among the members has been difficult to achieve mainly because of the **Rohingya refugee crisis** which created bitterness between Myanmar and Bangladesh.
- This affected the working of the organisation to some extent as it could not develop a common charter.
- **China's financial hegemony:** As China has undertaken a massive drive to finance and build infrastructure in South and Southeast Asia through the Belt and Road Initiative in almost all BIMSTEC countries, except Bhutan and India, BIMSTEC is a new battleground in the India-China battle for dominance.
- **Other issues**
- The pressing challenges that confront the region include the emergence of a **dead zone with zero oxygen** where no fish survive; leaching of plastic from rivers as well as the Indian Ocean; destruction of natural protection against floods such as mangroves; sea erosion; growing population pressure and industrial growth in the coastal areas and consequently, huge quantities of untreated waste flow.

Way Forward

- **BIMSTEC might be a viable option for India to maintain its foreign policy discourse.** However, India will have to take into account the fact that in Asia, **economics and politics have historically** been deeply integrated, and not fall into the trap.
- BIMSTEC could develop **codes of conduct that preserve freedom of navigation and apply existing law of the seas regionally.**
- In addition, BIMSTEC could stem the region's creeping militarisation by instituting, for instance, a Bay of Bengal Zone of Peace that seeks to limit any **bellicose behaviour of extra-regional power.**
- BIMSTEC leaders should **reinforce their commitments and efforts** in building the **momentum of collaborations in the Bay of Bengal region** for the security and development of all.
- **BIMSTEC Nations must also collectively combat terrorism, violent extremism, transnational crime, cyber-attacks and narco-trafficking.**
- **The BIMSTEC Summit must create** a new regional mechanism for coordinated activities on **maritime issues of a transboundary nature.**
- This mechanism **must initiate urgent measures** to strengthen fisheries management, promote sustainable fishing methods, establish protected areas and develop frameworks to prevent and manage pollution, especially industrial and agricultural waste as well as oil spills.
- There is also a **need for greater scientific research** on the impact of climate change in general and on fisheries in particular.
- **Participatory approaches must be evolved for near-real-time stock assessment** and the creation of an regional **open fisheries data alliance.**
- The **Bay of Bengal Programme (BOBP)**, an inter-governmental organisation based in Chennai, is doing good work to promote sustainable fishing.
- A Bay Of Bengal Large Marine Ecosystem (BOBLME) project is also being launched by the FAO with funding from the Global Environmental Facility (GEF) and others.
- The BIMSTEC summit must express **full support for both BOBP and BOBLME.**

The Hindu link

<https://www.thehindu.com/todays-paper/tp-national/india-seeks-closer-bimstec-partnership/article65272287.ece>

https://bimstec.org/?page_id=3917

Question- Describe the significance of BIMSTEC in present times where minilaterals are rising as mini power blocs. Also describe challenges to India's integration with BIMSTEC.

CivilsTap Hlmachal

POLITY AND GOVERNANCE

THE ASSAM-MEGHALAYA BOUNDARY DISPUTE RESOLUTION

Context

- Assam and Meghalaya signed a draft resolution on January 29, partially resolving a 50-year-old dispute along their 884.9 km boundary.
- An agreement in this regard, termed historic, was signed between Assam Chief Minister and Meghalaya Chief Minister in the presence of Home Minister.
- The agreement is expected to pave the way for resolving disputes in the remaining sectors of the Assam Meghalaya boundary and similar areas of difference between Assam and three other north eastern States.

Existing Inter-State Boundary Disputes arising out of Demarcation of Boundaries:

- Andhra Pradesh-Odisha
- Haryana-Himachal Pradesh
- Union Territory of Ladakh-Himachal Pradesh
- Maharashtra-Karnataka
- Assam-Arunachal Pradesh
- Assam-Nagaland
- Assam-Meghalaya
- Assam-Mizoram

Historical Background of the Assam-Meghalaya Boundary Dispute:

- Meghalaya, carved out of Assam as an autonomous State in 1970, became a full-fledged State in 1972.
- The creation of the new State was based on the **Assam Reorganisation (Meghalaya) Act of 1969**, which the Meghalaya government refused to accept. This was because the Act followed the recommendations of a 1951 committee to define the boundary of Meghalaya.
- On that panel's recommendations, areas of the present-day East Jaintia Hills, RiBhoi and West Khasi Hills districts of Meghalaya were transferred to the Karbi Anglong, Kamrup (metro) and Kamrup districts of Assam.
- Meghalaya contested these transfers after statehood, claiming that they belonged to its tribal chieftains. Assam stance mentions Meghalaya government could neither provide documents nor archival materials to prove its claim over these areas.
- After claims and counterclaims, the dispute was narrowed down to 12 sectors on the basis of an official claim by Meghalaya in 2011.

Major Point of Contention:

- Major point of contention between Assam and Meghalaya is the **district of Langpih in West Garo Hills** bordering the Kamrup district of Assam.
- Langpih was part of the Kamrup district during the British colonial period but post-Independence, it became part of the **Garo Hills** and Meghalaya.
- Assam considers it to be part of the **Mikir Hills in Assam**.
- Meghalaya has questioned Blocks I and II of the Mikir Hills -now Karbi Anglong region - being part of Assam. Meghalaya says these were parts of erstwhile United Khasi and Jaintia Hills districts.

Vision for Future

- Prime Minister calls the North East as Ashtalakshmi and with more efforts, the North East will not only become part of the national main stream, but will also become a driving force in national development.

- Many initiatives has been taken including
- Narcotics Free
- Flood Free and
- Infiltrator Free North East.
- The Centre and the Governments of the North East are moving forward in a time bound manner on all these fronts.

Way Forward

- Boundary disputes between the states can be **settled by using satellite mapping of the actual border locations**.
- Reviving the **Inter-state council** can be an option for resolution of an Inter-state dispute.
- Under **Article 263 of the Constitution**, the Inter-state council is expected to inquire and advise on disputes, discuss subjects common to all states and make recommendations for better policy coordination.
- Similarly, **Zonal councils** need to be revived to discuss the matters of common concern to states in each zone—matters relating to social and economic planning, border disputes, inter-state transport, etc.
- In order to strengthen India’s unity, **both the centre and state governments, need to imbibe the ethos of cooperative federalism**.

The Hindu link

<https://www.thehindu.com/news/national/other-states/the-assam-meghalaya-boundary-dispute-resolution/article65273908.ece>

Question- Write a short note on historical background of the Assam-Meghalaya boundary dispute.

DEMOCRACIES ON THE SLIDE

Context

- According to the latest report from the **V-Dem Institute at Sweden’s University of Gothenburg**, the **level of democracy enjoyed by the average global citizen in 2021 is down to 1989 levels**, with the democratic gains of the post-Cold War period eroding rapidly in the last few years.
- The study, titled **‘Democracy Report 2022: Autocratisation Changing Nature?’** states that more than twice as many countries (32) are undergoing autocratisation as are witnessing democratisation (15). Noting that India is one of the top ten ‘autocratisers’ in the world, the **V-Dem (Varieties of Democracy) report classifies India as an autocracy** (‘electoral autocracy’) rather than a democracy, **ranking it 93rd on the liberal democracy index**, out of 179 countries.

V-Dem report’s methodology

- V-Dem uses aggregate expert judgments to produce estimates of critical concepts.
- It gathers data from a pool of over 3,700 country experts who provide judgments on different concepts and cases.
- Leveraging the diverse opinions, the V-Dem’s measurement model algorithmically estimates both the degree to which an expert is reliable relative to other experts, and the degree to which their perception differs from other experts to come up with the most accurate values for every parameter.

Parameters were used to assess the status of a democracy

- V-Dem’s conceptual scheme takes into account not only the electoral dimension (free and fair elections) but also the liberal principle that a democracy must protect “individual and minority rights against both the tyranny of the state and the tyranny of the majority”.

- The V-Dem report classifies countries into four regime types based on their score in the **Liberal Democratic Index** (LDI): Liberal Democracy, Electoral Democracy, Electoral Autocracy, and Closed Autocracy.
- The LDI captures both liberal and electoral aspects of a democracy based on 71 indicators that make up the Liberal Component Index (LCI) and the Electoral Democracy Index (EDI).
- The LCI measures aspects such as protection of individual liberties and legislative constraints on the executive, while the EDI considers indicators that guarantee free and fair elections such as freedom of expression and freedom of association. In addition, the LDI also uses an Egalitarian Component Index (to what extent different social groups are equal), Participatory Component Index (health of citizen groups, civil society organisations), and Deliberative Component Index (whether political decisions are taken through public reasoning focused on common good or through emotional appeals, solidarity attachments, coercion).

Main findings of the report

- While Sweden topped the LDI index, other Scandinavian countries such as Denmark and Norway, along with Costa Rica and New Zealand make up the **top five** in liberal democracy rankings.
- Autocratisation is spreading rapidly, with a record of 33 countries autocratising.
- Signaling a sharp break from an average of 1.2 coups per year, 2021 saw a record 6 coups, resulting in 4 new autocracies: Chad, Guinea, Mali and Myanmar.
- While the number of **liberal democracies** stood at 42 in 2012, their number has shrunk to their lowest level in over 25 years, with just 34 countries and 13% of the world population living in liberal democracies.
- **Closed autocracies**, or dictatorships, rose from 25 to 30 between 2020 and 2021.
- While the world today has 89 democracies and 90 autocracies, **electoral autocracy** remains the most common regime type, accounting for 60 countries and 44% of the world population or 3.4 billion people. Electoral democracies were the second most common regime, accounting for 55 countries and 16% of the world population.

What does the report say about India?

- The report notes that India is part of a broader global trend of an anti-plural political party driving a country's autocratisation.
- Ranked 93rd in the LDI, India figures in the "bottom 50%" of countries.
- It has slipped further down in the Electoral Democracy Index, to 100, and even lower in the Deliberative Component Index, at 102. In South Asia, India is ranked below Sri Lanka (88), Nepal (71), and Bhutan (65) and above Pakistan (117) in the LDI.

Changing nature of autocratisation

- One of the biggest drivers of autocratisation is "**toxic polarisation**" — defined as a phenomenon that erodes respect of counter-arguments and associated aspects of the deliberative component of democracy — a dominant trend in 40 countries, as opposed to 5 countries that showed rising polarisation in 2011.
- The report also points out that "**toxic levels of polarisation contribute to electoral victories of anti-pluralist leaders and the empowerment of their autocratic agendas**".
- Noting that "polarisation and autocratisation are mutually reinforcing", the report states that "**measures of polarisation of society, political polarisation, and political parties' use of hate speech tend to systematically rise together to extreme levels.**"
- The report identified "**misinformation**" as a key tool deployed by autocratising governments to sharpen polarisation and shape domestic and international opinion.
- **Repression of civil society and censorship of media** were other favoured tools of autocratising regimes.
- While freedom of expression declined in a record 35 countries in 2021, with only 10 showing improvement, repression of civil society organisations (CSOs) worsened in 44 countries over the past ten years, "putting it at the very top of the indicators affected by autocratisation". Also, in 37 countries, direct government control over CSOs' existence moved in an authoritarian direction — "evidence of the far-ranging weakening of civil society around the world."

- Significantly, the report also found that **decisive autonomy for the electoral management body (EMB) deteriorated in 25 countries.**

The Hindu link

<https://www.thehindu.com/news/national/democracies-on-the-slide/article65198992.ece?homepage=true>

Question- As per V-Dem Institute's latest report, democracies are giving way to autocratisation in recent times. Give reasons of rising autocratic tendencies and methods employed by authoritative regimes in driving autocratisation.

FILLING THE PHYSICAL GAPS IN INDIA'S DIGITAL PUSH

Context

- One aspect in 2022 Union Budget that hasn't been talked about as much is the importance given in the budget to **digital public infrastructure (DPI)** — the idea that **cross-sectoral "digital rails"** like ID, payments and data exchanges **when combined with open interconnected data systems** in sectors like health, education and social protection, **can transform service delivery.**

Developments in India

- India is seen as a **global trendsetter** in the DPI movement, having set up multiple **large-scale dpis like Aadhaar, UPI and sector-specific platforms** like DIGIT for e-governance and DIKSHA for education.
- These have **helped push the frontier of public service delivery.**
- This year's budget adds to the growing discourse on dpis by **making four key announcements:**
- In health**, an open platform with digital registries, a unique health identity and a robust consent framework;
- In skilling**, a **Digital Ecosystem for Skilling and Livelihood (DESH-Stack)** to help citizens upskill through online training;
- A Unified Logistics Interface Platform (ULIP)** to streamline movement of goods across modes of transport; and
- For **travel**, an "open source" mobility stack for facilitating seamless travel of passengers.

Expected outcomes

- Research shows that the **creation of national digital ecosystems in sectors like health, jobs and skilling, agriculture and justice can lead to economic opportunities worth Rs 35 lakh crore by 2030.**
- Similar analysis estimates that national digital ecosystems could add over 5 per cent to India's GDP.

Further suggestions

- To truly unlock the value of these platforms it is necessary to differentiate between the "tech" and "non-tech" layers of our digital infrastructure — while India seems to have made significant headway on the "tech" layers, the "non-tech" layers of community engagement and governance need a lot more work.
- The combination of these three layers is what is critical to making tech work for everyone. Together, they embody what we call the **open digital ecosystems (ODE)** approach.
- To unleash the true potential of India's ODEs, we need to get the "non-tech" layers right, by prioritising principles around data protection, universal access and accountability. While this presents a large menu, **three specific non-tech levers are critical.**
- Protecting the data of all users** and giving them agency over how their data gets used. The **passage of a robust Data Protection Bill is imperative.**

- We also need to go beyond the mere requirement of “consent” and focus on nudging users towards privacy conscious decisions by providing standardised privacy ratings, presenting privacy policies more visually, and mandating users to stay on the privacy page for at least a few minutes.
- It is important to **address the digital divide**. Research by ORF, for instance, shows that **Indian women are 15 per cent less likely to own a mobile phone and 33 per cent less likely to use mobile internet services** than men.
- So, we **need a “phygital” approach** that **provides services through both online and offline options** and strong grievance redressal mechanisms. **Leveraging trusted local intermediaries** who are embedded in communities can significantly improve access to tech platforms for marginalised groups.
- Finally, as we push the frontier on digitisation, India must also **focus on developing anchor institutions and robust governance frameworks**.
- Just as **Aadhaar is anchored by UIDAI** under an Act of Parliament, and the **Ayushman Bharat Digital Mission** is anchored by the **National Health Authority**, **every new ODE requires an accountable institutional anchor**.
- These institutions are critical for setting standards, ensuring a level playing field and safeguarding consumer interest. The sector-specific institutions also need to be complemented by a “National ODE Council” to inform coordinated policies and keep the focus on citizen-centricity.
- From Aadhaar and UPI to DBT and CoWin, **India’s tech stacks are grabbing global attention**. It is now critical to bring the gaze on to the non-tech layers of the stack, so that the potential of these platforms can be unlocked for every Indian.

The Indian Express link

<https://indianexpress.com/article/opinion/columns/filling-physical-gaps-india-digital-push-7804112/>

Question- India’s initiatives in digital public infrastructure like Aadhar, UPI etc can help in improving service delivery across sectors. Explain

MORE WOMEN IN POLITICS WILL STRENGTHEN DEMOCRACY

Context

- Covid-19 pandemic has brought to the fore the growing role of women in strengthening the political and civic life of democracy in South Asia.
- **At the global level**, much has already been written about the superior performance of women leaders, such as Jacinda Ardern (New Zealand), Tsai-Ing Wen (Taiwan), Sanna Marin (Finland) and KK Shailaja (Kerala), in handling the pandemic.
- Likewise, the highly effective contributions of **local-level panchayat sarpanches** and **health officials** has been documented.
- However more systemic and ground-level realities of women are fraught with various contradictions, contestations, and quiet calamities.

Democracy and women

- For a proper appraisal of the relations between gender and democracy, we ought to examine the links between violence, representation, and the political participation of women.
- Historically, **one of the peculiar paradoxes of South Asian democracy** has been the continued **presence of strong women leaders at the executive centre** coupled with a generally **appalling condition of women in society at large**.
- **Example**-South Asia has had the largest number of women heads of state — including Sirimavo Bandaranaike, Chandrika Kumaratunga, Indira Gandhi, Khaleda Zia, Sheikh Hasina, and Benazir Bhutto — of any region in the world till recently.

- However, this **seemingly empowering image is disproved when we take a broader view of the electoral representation and social condition of women in the region**. While women have played very visible and important roles at the higher echelons of power and at the grassroots level in social movements, they have been under-represented in political parties as officials and as members of key decision-making bodies.
- In **electoral representation**, India, for instance, has fallen several places in the **Inter-Parliamentary Union's global ranking of women's parliamentary presence**, from 117 after the 2014 election to 143 as of January 2020. India is currently behind Pakistan (106), Bangladesh (98) and Nepal (43) and ahead of Sri Lanka (182).
- Prior to the 2019 election, scholars have estimated that **it would take another 40 years to have 33 per cent women in the Lok Sabha**, based on historical election trends and assuming that no gender quota is introduced.
- However, **there are two main points to be noted** here.
- In India, **women currently make up 14.6 per cent of MPs (78 MPs)** in the Lok Sabha, which is a historic high. Although the percentage is modest, it is remarkable because women barely made up 9 per cent of the overall candidates in 2019. Also has been noted that the **winnability** (the basis on which political parties claim to give tickets) **of women is much higher than of men**.
- In terms of **electoral quotas**, there were two outstanding exceptions in the 2019 general elections. West Bengal under Mamata Banerjee and Odisha under Naveen Patnaik opted for voluntary parliamentary quotas, fielding 40 per cent and 33 per cent women candidates, respectively.

Women as voters

- In countries such as India and Bangladesh, the presence of women may be more powerfully felt as voters than as candidates.
- In 1962, the male voter turnout in India was 16 percentage points higher than for women.
- In the 2019 Lok Sabha elections, women's participation exceeded that of men for the first time.
- This suggests **an increasing assertion of citizenship rights among women**. The growing turnout of women voters **could influence political parties' programmatic priorities and improve their responsiveness to women voters' interests, preferences, and concerns**, including sexual harassment and gender-based violence.

Women centric schemes

- The TMC ran and highlighted many women-centric schemes that potentially played a central role in their victory. Schemes such as **Swasthya Sathi**, which issued health cards in the name of female heads of the family, and **Kanyashree Prakalpa** and **Rupashree Prakalpa**, which provided financial support for girls' education and marriage respectively, proved immensely popular.
- The **central government** must be **commended for its achievements in two areas** in particular:
- Its DBT schemes such as the Pradhan Mantri Vaya Vandana Yojana and the Pradhan Mantri Surakshit Matritva Abhiyan, due to which maternal mortality rate has reduced from 167 (2011-13) to 113 (2016-18).
- The Maternity Benefit (Amendment) Bill, 2017 is another landmark achievement that extended the paid maternal leave to 26 weeks from the existing 12 weeks.
- Also the strength of civil society initiatives is not entirely dependent on the strength of political institutions — a case in point would be the **Aurat marches in Pakistan**. Another is the **Shaheen Bagh protest** that proved remarkably active in mobilising women.

Way forward

- The current party in power must use its parliamentary majority to finally pass the Women's Reservation Bill, as was promised in their 2014 election manifesto.
- Moreover the initiative taken by the governments of west Bengal and Odisha to increase women's parliamentary presence must serve as an inspiration to other Indian states.

The Indian Express link

<https://indianexpress.com/article/opinion/columns/more-women-politics-strengthen-democracy-7805628/>

Question- Describe how women participation in politics as electoral representatives, voters and as a part of civil society can help in strengthening democracy.

WHAT THE PLIGHT OF STUDENTS IN UKRAINE REVEALS ABOUT MEDICAL EDUCATION IN INDIA

Context

- Odisha's Chief Minister Naveen Patnaik has written to Prime Minister Narendra Modi, requesting the Centre to direct the National Medical Commission (NMC) to ensure uninterrupted education for medical students who have been evacuated from Ukraine.
- He has requested him to enable their admission to Indian medical colleges.
- There is a **partial precedent in the post-Partition "transfers" provided to refugee medical students who migrated from medical colleges located in the newly-created Pakistan.**
- The plight of 18,000 Indian medical students trapped in Ukraine's war zones has led to widespread concerns. While efforts are being made for their evacuation and early return to India, several questions arise. Why did they need to go to Ukraine to study? What will happen to their interrupted education? What are the alternatives available to them on their return to India?

Medical education scenario in India

- The number of seats available for medical education in India is far less than the number of aspirants who leave school with the dream of becoming doctors.
- Of the **1.6 million students who appeared** in the National Eligibility cum Entrance Test (NEET) in 2021, only **88,120 made it into the 562 medical colleges** in the country.
- Others had to enrol in non-medical courses in India or seek admission to foreign medical colleges. While the number of medical colleges has now increased to 596 (with 89,875 seats), the entry barrier is still high.
- **China, Russia, Ukraine, Kyrgyzstan, the Philippines and Kazakhstan** are among the countries where Indian students pursue their dreams to become doctors.
- On return, they need to pass a qualifying examination before they are permitted to intern in the institutions recognised by the Medical Council of India (MCI) — its functions have been taken over by the recently-constituted NMC.
- The task of conducting this screening test was assigned to the National Board of Examinations (NBE). The **passing rates were disappointingly low (mostly below 20 per cent), for several reasons-**
- **Training standards** varied widely across foreign institutions.
- The **language of instruction** was not English.
- The **curriculum** in foreign colleges differed in several respects from that taught in India. A student training in Russia or Ukraine is unlikely to learn much about kala-azar or malaria.
- The **screening examination** in India used to cover the **vast syllabus** encompassing the entire gamut of medical education.. So, **foreign medical graduates** started taking **coaching classes**. That spawned another industry.

What should be done?

- We need to offer **more opportunities** to students who seek a medical career since **our health system is woefully short of both basic doctors and specialists.**
- This is partly a legacy of the MCI boards imposing rigid conditions to restrict the number of medical colleges, and partly due to limited government investment in the health sector.
- A recent analysis estimates that India has only 4.8 fully qualified and actively serving doctors per 10,000 population. Those too are inequitably distributed across the states, with a further tilt towards urban centres.

- It is essential that **we increase the number of medical colleges**, especially in states that have a **low number of such seats**.
- The **critical needs** for a medical college are a general hospital with different specialities needed for the **MBBS course, classrooms, laboratories, community engagement and adequate faculty**.
- The **availability of suitable faculty** is a **critical barrier** at present.

Private sector role

- Even if the **private sector** is provided land at a concessional rate for starting new medical colleges, they **will face a faculty crunch and poach from government medical colleges**.
- **Handing over district hospitals to the private sector**, as proposed by some, will **exacerbate inequities in healthcare** and disconnect secondary care from organised primary care which is principally delivered through the public sector.
- **Private medical colleges are also exorbitantly expensive** in their fee structure — even in comparison to foreign medical colleges.

Role of State governments

- State governments must be **supported to invest in the upgradation of district hospitals**.
- Specialist posts in many clinical disciplines that are needed for the MBBS programme already exist in the district hospitals. These **specialists can be designated as faculty for a new medical college attached to the district hospital**.
- These **hospitals can be linked downstream to primary healthcare services and upstream to tertiary care hospitals** to provide the students with a **full range of clinical exposure** while functioning as the main centre of education.
- **Common classrooms can be created by virtually linking several of the medical colleges in a state**, to share some of the faculty for classroom teaching, especially for pre- and para-clinical subjects where there is considerable faculty shortage.
- **State governments must be financially assisted** to undertake this transformation of district hospitals.
- A **centrally sponsored scheme** aims to set up 157 new medical colleges attached to existing district/referral hospitals in areas that do not have any medical college.
- This will reduce urban-rural disparities in healthcare and also help to scale-up training in the much needed but greatly neglected discipline of family medicine. Nursing colleges and allied health professional training centres (for paramedical courses) may also be added to district hospitals to create a multi-layered, multi-skilled health workforce.

About returning students

- It is unlikely that they will be able to resume their education there — the political turmoil is likely to continue even if the war ends soon.
- Their families too will be reluctant to send them back.
- Present regulations do not permit them to continue their education in Indian medical colleges.
- Even if the NMC permits it as a special case, other students who qualified the NEET but did not make the cut for medical admission, and stayed back in India, might protest.

Solution

- The government could support these students by enrolling them in a **BSc (Public Health) programme** that can be run by schools of public health and medical colleges.
- They can graduate in three years to commence careers in public health, where their earlier medical education can add value.
- Since the **National Health Policy of 2017 calls for Public Health Management cadres** to be established in **every state**, this could initiate a programme for large-scale training of public health professionals.
- In any case, the sad state of the students in Ukraine must catalyse reforms in Indian medical education.

The Indian Express link

<https://indianexpress.com/article/opinion/columns/what-the-plight-of-students-in-ukraine-reveals-about-medical-education-in-india-7805640/>

Question- Students returning from war hit Ukraine reveal the issues and need of reforms in medical education in India. Comment.

WORKING WOMEN TOO, WITH A DREAM OF GOOD CHILDCARE

Context

- The participation of women in the workforce in India has remained low.
- In 2019, 21% of women were either working or looking for work, compared to 32% in 2005.
- India's female labour force participation (FLFP) rate is the lowest among the BRICS countries and is also lower than some of its neighbours in South Asia such as Sri Lanka and Bangladesh.

India's demographic dividend

- India's population is among the youngest in the world.
- In 2020, the median age in India was about 29. Women and girls form a significant part of India's demographic dividend.
- Countries like China, Singapore, Taiwan and South Korean are examples of how the demographic dividend can be reaped to achieve fast-paced economic growth.

Potential sectors

- Access to higher education, skill training and digital technology are the three great enablers in helping India reap the potential of its female labour force.
- According to United Nations Women estimates, women make up a significant proportion of all healthcare workers and more than 80% of nurses and midwives.
- The care service sector, which includes health, education, and other personal care services, is more labour-intensive than sectors such as manufacturing, construction or other service sectors.
- Greater investments in better health and care facilities improve the well-being of India's people and hence the economic productivity.
- The International Labour Organization (ILO) also suggests that it will lead to more employment opportunities for women.
- The ILO Report on Care work and Care Jobs for the Future of Decent Work: Key findings in Asia and the Pacific (2018) indicated that increasing investment in the care economy has the potential to generate a total of 69 million jobs in India by 2030.
- The gig economy comprises platforms that offer innovative solutions in different sectors such as transport, retail, personal and home care.
- Platform jobs have low-entry barriers and cater to the needs and aspirations of workers with varying degrees of skill sets.
- Studies indicate that women appreciate the income-generating potential of the gig economy.
- The ILO Global Survey (2021) noted that working from home or job flexibility are particularly important for women.
- According to the GSMA Mobile Gender Gap Report, only 25% of women owned smartphones compared to 41% of men in India in 2020.
- Closing this gap can be significant in boosting women's employment in the gig and platform sector.

Policies and measures

- Women and girls' access to higher education (beyond secondary education) and skill training is critical to improve their employment outcomes.

- Women need to be motivated to take up higher education through incentives such as scholarships as well as transport and hostel facilities.
- Online skill training can also be beneficial to women who face constraints in physical mobility due to social norms, domestic responsibilities or concerns over safety.
- Women must be mentored to take up employment opportunities in emerging sectors.
- Governments, skill training partners, private firms, corporates and industry associations as well as civil society organisations all need to come together to create enabling measures for women.

Conclusion

- Policies supporting the expansion of care services along with gig and platform sectors can serve as an effective strategy to strengthen aggregate demand, while simultaneously improving long-term economic growth, gender equality and societal well-being.

The Hindu link

<https://www.thehindu.com/opinion/op-ed/working-women-too-with-a-dream-of-good-childcare/article65202368.ece>

Question- Women need to be supported in all spheres to ensure their contribution to workforce. Explain the measures which can help in achieving such goals.

WATER MANAGEMENT NEEDS A HYDRO-SOCIAL APPROACH

Context

- The Global Water System Project, which was launched in 2003 as a joint initiative of the Earth System Science Partnership (ESSP) and Global Environmental Change (GEC) programme, epitomizes global concern about the human-induced transformation of fresh water and its impact on the earth system and society.

Fresh water, water valuation:

- Fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC) in 2007 highlighted the link between societal vulnerability and modifications of water systems.
- It is globally estimated that the gap between demand for and supply of freshwater may reach up to 40% by 2030 if present practices continue.
- The latest UN World Water Development Report, 2021, titled 'Valuing Water', has laid stress on the proper valuation of water by considering five interrelated perspectives:
 - Water sources
 - Water infrastructure
 - Water services
 - Water as an input to production
 - Socio-economic development and socio-cultural values of water.

Inter-basin transfer projects:

- The intra- and inter-basin transfer (IBT) of water is a major hydrological intervention to rectify the imbalance in water availability due to naturally prevailing unequal distribution of water resources within a given territory.
- The National River Linking Project of India is under construction which is one of the projects of IBT initiatives across the world.
- These projects, if executed, will create artificial water courses that are more than twice the length of the earth's equator and will transfer 1,910 km³ of water annually.

- The World Wildlife Fund/World Wide Fund for Nature (2009) has suggested a cautious approach and the necessity to adhere to sustainability principles set out by the World Commission on Dams while taking up IBT projects.

Some of the key assumptions:

- The Ken Betwa river link project which is a part of the National River Linking project (mooted in 1970 and revived in 1999) raises larger questions about hydrological assumptions and the use and the management of freshwater resources in the country.
- The basic premise of IBT is to export water from the surplus basin to a deficit basin.
- However, there is contestation on the concept of the surplus and deficit basin itself as the exercise is substantially hydrological.
- Water demand within the donor basin by factoring present and future land use, especially cropping patterns, population growth, urbanisation, industrialisation, socio-economic development and environmental flow are hardly worked out.
- Besides this, rainfall in many surplus basins has been reported as declining. The status of the surplus basin may alter if these issues are considered.
- There is concern about the present capacity utilisation of water resources created in the country.
- By 2016, India created an irrigation potential for 112 million hectares, but the gross irrigated area was 93 million hectares.
- There is a 19% gap, which is more in the case of canal irrigation.
- In 1950-51, canal irrigation used to contribute 40% of net irrigated area, but by 2014-15, the net irrigated area under canal irrigation came down to less than 24%.
- Ground water irrigation now covers 62.8% of net irrigated area.
- The average water use efficiency of irrigation projects in India is only 38% against 50%-60% in the case of developed countries.

Agriculture, grey water use:

- The agriculture sector uses a little over 90% of total water use in India.
- In industrial plants, consumption is 2 times to 3.5 times higher per unit of production of similar plants in other countries.
- Similarly, the domestic sector experiences a 30% to 40% loss of water due to leakage.
- Grey water is hardly used in our country.
- It is estimated that 55% to 75% of domestic water use turns into grey water depending on its nature of use, people's habits, climatic conditions, etc.
- At present, average water consumption in the domestic sector in urban areas is 135 litres to 196 litres a head a day.
- The discharge of untreated grey water and industrial effluents into freshwater bodies is cause for concern.
- The situation will be further complicated if groundwater is affected.
- Apart from the inefficient use of water in all sectors, there is also a reduction in natural storage capacity and deterioration in catchment efficiency.

Planning ahead:

- Looking into these issues may not be adequate to address all the problems.
- Nevertheless, these measures will help to reduce demand supply gap in many places, and the remaining areas of scarcity can be catered to using small-scale projects.
- A hybrid water management system is necessary, where (along with professionals and policy makers) the individual, a community and society have definite roles in the value chain.

Conclusion:

- To help achieve the Sustainable Development Goal (SDG) on water availability and sanitation for all by 2030 (SDG 6) it says: “to ensure safe drinking water and sanitation for all, focusing on the sustainable management of water resources, wastewater and ecosystems....”

The Hindu link

<https://www.thehindu.com/opinion/op-ed/water-management-needs-a-hydro-social-approach/article65208277.ece>

Question- Freshwater management in India needs anthropological and technical solutions to ensure sustainable use for present and future generations. Elucidate.

A NEW VISION FOR OLD AGE CARE

Context

- The care of elderly people is managed by a set of professionals or voluntary organisations interested in geriatric services.
- These homes are run by NGOs, religious or voluntary organisations with support from the government, or by local philanthropists.
- The quality of service varies as these homes lack regulatory oversight.
- Many homes lack clearly established standard operating procedures, and their referral paths to health care are informal.

A rapidly growing section:

- A formal approach to homes for the elderly is an important policy and planning issue for India.
- The UN World Population Ageing Report notes that India’s ageing population (those aged 60 and above) is projected to increase to nearly 20% by 2050 from about 8% now.
- It is essential that our policy framework and social responses are geared to meet this reality.
- A recent set of research papers from Hyderabad focusing on the quality of health in homes for the elderly has some interesting insights.
- About 30% of the residents who were part of the study (over 1,500 participants from 40 homes) had a vision impairment of some sort, but nearly 90% of this vision impairment could be addressed by simple, relatively low-cost health interventions: issuing better eye glasses or cataract surgery.
- The study also found some ‘unseen’ effects of vision impairment: many were prone to depression.
- In fact, those with both vision and hearing impairment had a rate of depression that was five times higher than those without.

Public policy support:

- Building formal pathways for basic health screening such as screenings for blood sugar, blood pressure, periodic vision and hearing screening, and a simple questionnaire to assess mental health.
- Such interventions are inexpensive (think of all the motorcycle-operated screenings outside public grounds for morning-walkers) and could go a long way in identifying health issues and offering support.
- Homes for the elderly must be guided, again by policy, to make their facilities and buildings elderly and disabled-friendly.
- Design, architecture and civic facilities must be thought from the ground up and these innovations must be available for all residents, not just those living in expensive ones.

Conclusion:

- Three major themes “sense of well-being,” “having good physical health,” and “preserving good mental health” must be the goal of the government in promoting the elderly care to achieve SDG goals

The Hindu link

<https://www.thehindu.com/opinion/op-ed/a-new-vision-for-old-age-care/article65208185.ece>

Question- Rising old age population in the country needs new approach towards social security and geriatric care. Explain.

WHAT IS MANUAL SCAVENGING, AND WHY IS IT STILL PREVALENT IN INDIA?**Context****Why in News?**

- Recently, three labourers in Mumbai, allegedly hired for manual scavenging, died after inhaling toxic fumes in a septic tank.
- Even though manual scavenging is banned in India, the practice is still prevalent in many parts of the country.

What is manual scavenging?

- Manual scavenging is the practice of removing human excreta by hand from sewers or septic tanks.
- India banned the practice under the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR)**.
- The Act bans the use of any individual for manually cleaning, carrying, disposing of or otherwise handling in any manner, human excreta till its disposal.
- In 2013, the definition of manual scavengers was also broadened to include people employed to clean septic tanks, ditches, or railway tracks.
- The Act recognizes manual scavenging as a “dehumanizing practice,” and cites a need to “correct the historical injustice and indignity suffered by the manual scavengers.”

Why is manual scavenging still prevalent in India?

- The **lack of enforcement of the Act and exploitation of unskilled labourers** are the reasons why the practice is still prevalent in India.
- The Mumbai civic body charges anywhere between Rs 20,000 and Rs 30,000 to clean septic tanks. The unskilled labourers, meanwhile, are much cheaper to hire and contractors illegally employ them at a daily wage of Rs 300-500.

The Indian Express link

<https://indianexpress.com/article/explained/explained-what-is-manual-scavenging-and-why-is-it-still-prevalent-in-india-7815400/>

Question- Write a short note on manual scavenging, reasons for its prevalence and legal remedies available to curb it.

RASHTRIYA GRAM SWARAJ ABHIYAN**Context**

- During the current financial year, Annual Action Plans of 33 States/ Union Territories (UTs) have been approved under RGSA and an amount of Rs. 547.411 crore has been released to 23 States/ UTs for undertaking approved activities including Capacity Building & Training of ERs and other stakeholders. Nearly 25, 75,636 participants have been trained during the current financial year.

Rationale of the Scheme

- **Mahatma Gandhi envisioned villages as mini-republics** and advocated that true democracy should begin with participation from the grass-root level by the people of every village.
- The **73rd Constitutional Amendment** mandated the **three tier Panchayati Raj Institutions (PRIs)** to function as units of local self-government and envisioned a people-led development at the grass roots level.
- Panchayati Raj System was mandated with the **twin objectives of ensuring economic development and social justice for the people living in the rural areas.**

About Rashtriya Gram Swaraj Abhiyan (RGSA)

- The **Union Budget 2016-17** announced the Rashtriya Gram Swaraj Abhiyan (RGSA) as a **Centrally Sponsored Scheme for building capabilities of Panchayati Raj Institutions for achieving Sustainable Development Goals (SDGs).**
- Key **local development challenges** faced by the country viz. poverty, public health, nutrition, education, gender, sanitation, drinking water, livelihood generation, etc. are in sync with SDGs and fall within the realm of Panchayats.
- The Panchayats have therefore been designated as a key player for implementation of the United Nations SDGs to be achieved by 2030.
- The scheme **extends to all States and UTs including non-Part IX areas** where Panchayats do not exist.

Focus of the scheme

- The scheme has a focus on ensuring **basic orientation training for the Elected Representatives (ERs) of Panchayats**, within six months of their election and **refresher training** within 2 years.
- RGSA will have thrust for **PRI-SHG (Self-Help Group) convergence** to ensure effective community mobilisation and greater public ownership of flagship programs of the government.
- **Use of e-governance and technology driven solutions** at Panchayat level will be increased to attain administrative efficiency, improved service delivery, and greater accountability.
- RGSA also aims at **enhancing capabilities of Panchayats to raise their own sources of revenue.**
- **Strengthening Gram Sabhas** to function effectively as the basic forum of people's participation is also a focus area of RGSA.
- It also aims at **promoting devolution of powers and responsibilities to Panchayats** according to the spirit of the Constitution and Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996.

Components of the scheme

The scheme consists of Central and State Components:

- The Central component comprises
- National level activities viz. National Plan for Technical Assistance in collaboration with academic institutions/ institutions of excellence for various activities of Capacity Building & Training (CB&T) for PRIs,
- Mission Mode Project (MMP) on e-Panchayat and
- Incentivization of Panchayats.
- The State component relates to
- Activities to be undertaken by State Governments for CB&T
- Strengthening of Gram Sabhas in PESA areas,
- Distance Learning Facility,
- Support for Innovations,
- Technical support to PRIs,
- Other activities for strengthening of Panchayats.

The PIB link

<https://pib.gov.in/PressReleasePage.aspx?PRID=1806652>

Question - Give out the rationale behind and objectives of Rashtriya Gram Swaraj Abhiyan. Also explain the challenges associated with rural development.

PRINCIPLE OF REASONABLE ACCOMMODATION

Context

- Recently, the Karnataka High Court decided in favour of the state's circular requiring students at educational institutions to only wear uniforms that were specified by the school. The ruling came in response to the hijab dispute.
- Accordingly, the ruling effectively supported the restriction of access to students who were wearing the hijab.
- When it came to Muslim females wearing head scarves, the court rejected an argument based on the concept of '**reasonable accommodation**' in favour of the practise.

The '**Reasonable Accommodation**' principle is defined as follows:

- '**Reasonable accommodation**' is a principle that promotes equality, allows for the giving of positive rights, and prohibits discrimination on the basis of a disability, health condition, or personal belief.
- Its primary application is in the field of disability rights.
- It highlights the affirmative duty of the state and private parties to give additional help to people with disabilities in order to enable them to participate fully and effectively in society.
- It is impossible for a disabled person to claim the constitutionally established fundamental rights to equality (Article 14), the six freedoms (Article 19), and the right to life (Article 21) without receiving the additional support that helps to make these rights real and meaningful for themselves.
- Article 2 of the **United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)** states that it is necessary and appropriate modification and adjustments that do not impose a disproportionate or undue burden on persons with disabilities in order to ensure that they can enjoy or exercise all human rights and fundamental freedoms on an equal basis with others (including voting).

In India, what is the legal status on this issue?

- "**Reasonable accommodation**" is defined as "necessary and appropriate modification and adjustments, without imposing a disproportionate or undue burden in any particular case, to ensure that persons with disabilities can enjoy or exercise rights on an equal basis with others" under the Rights of People with Disabilities Act, 2016.
- The term "**denial of reasonable accommodation**" is included in the definition of "**discrimination**" in Section 2(h).
- As a result of **Jeeja Ghosh and Others v. Union of India and Others (2016)**, the Supreme Court of India determined that equality does not only mean preventing discrimination; it goes beyond that to include remedying discrimination against groups that are subjected to systematic discrimination in society.
- This entails adopting the notions of positive rights, affirmative action and reasonable accommodation in tangible terms."
- According to the court's decision in **Vikash Kumar v. UPSC (2021)**, benchmark disability, which is a defined disability to the amount of 40%, is exclusively connected to special reservation for the handicapped in work and does not have to be a restriction for other types of accommodation.
- It further stated that failure to make reasonable accommodations amounted to discriminatory treatment.

The Hindu link

<https://www.thehindu.com/news/national/explained-did-the-karnataka-high-courts-hijab-verdict-overlook-reasonable-accommodation/article65240144.ece>

Question- Write a short note on Principle of Reasonable Accommodation and its impact on religious freedom in India.

NATIONAL COMMISSION FOR SCHEDULED TRIBES

Context

- During the last four years, the National Commission for Scheduled Tribes has been dysfunctional, according to a new report by a parliamentary committee.
- During that time, the commission has failed to provide a single report to Parliament.

About NCST

- The National Commission for Scheduled Tribes (NCST) was founded by modifying Article 338 of the Constitution and introducing a **new Article 338A** into the Constitution by the **Constitution (89th Amendment) Act, 2003**.
- The old National Commission for Scheduled Castes and Scheduled Tribes was abolished and replaced by two independent commissions, namely, the National Commission for Scheduled Castes (NCSC), and the National Commission for Scheduled Tribes (NCST), which were established by this amendment.
- **Organizational structure:** The Chairperson, Vice-Chairperson, and each member serve three-year terms beginning on the day they are appointed to their positions.
- The Chairperson has been elevated to the level of Union Cabinet Minister, while the Vice-Chairperson has been elevated to the post of Minister of State, and the other members have been promoted to the rank of Secretary to the Indian Government.
- They are appointed by the President by a warrant signed by him and sealed with his seal.
- At the very least, one of the members should be a woman.
- The Chairperson, the Vice-Chairperson, and the other Members serve three-year terms in their respective positions.
- Members are not eligible for re-appointment after serving for more than two consecutive terms.

The following reports are still pending:

- According to the Commission, the Indira Sagar Polavaram Project in Andhra Pradesh has had an adverse impact on the tribal community, which was investigated.
- A specific report on the rehabilitation and resettlement of tribals who have been displaced as a result of the Rourkela Steel Plant is available.

Challenges and challenges linked with the operation of the NCST include:

- There is a scarcity of manpower and funds.
- Because the eligibility criterion has been set excessively high, there will be fewer candidates.
- Its percentage of complaints and cases that are pending resolution is similarly close to 50 percent, according to the organization's data.
- **Authorities:** The NCST is entitled to examine and supervise matters pertaining to protections granted for STs under the Constitution, other laws, or government orders. The Commission is also empowered to investigate specific complaints relating to the rights and safeguards of STs, to participate in and provide advice in the Planning Process relating to the socio-economic development of STs, and to assess the progress of their development under the Union and its member states' jurisdiction.
- **Report:** The commission makes an annual report to the President on the effectiveness of safeguards and measures necessary for the proper execution of Programmers/ Schemes connected to the welfare and socio-economic development of STs, as well as on the working of the Commission.

The Hindu link

<https://www.thehindu.com/news/national/national-commission-for-scheduled-tribes-is-dysfunctional-house-panel/article65238335.ece>

<https://ncst.nic.in/>

Question- Explain the organisational structure and working of National Commission for Scheduled Tribes. Also discuss challenges associated with its smooth functioning.

FOREST RIGHTS ACT

Context

- To create awareness among the tribal people about their rights under effective implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, several measures have been taken.
- Ministry of Tribal Affairs in collaboration with National Resource Center, at TRI Campus, Odisha and National Tribal Research Institute, Delhi has prepared **various training modules** viz. Forest Rights Act Training Manual for Government functionaries and members of Gram Sabha, Training Manual on Delineation and Mapping of Community Rights and Community Forest Resources and Interactive Self Learning Training Module for capacity building of the Gram Sabhas.
- The TRI Odisha and NTRI regularly conduct **national and State level programs to augment the capacity of States** for effective implementation of FRA and train master trainers.
- The course material is available to these trainers and trainees on **Adiprashikshan Portal**.

About the Act

- The **Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights) Act, 2006** is a people-centric law for forests, which **recognises the rights of forest-dwelling communities to use and manage forest resources**.
- With more than 150 million forest dwellers, the scope of FRA is immense to protect their livelihoods, and engage them in sustainable forest management.

Objective

- To **undo the historical injustice** occurred to the forest dwelling communities;
- To **ensure land tenure, livelihood and food security** of the forest dwelling Scheduled Tribes and other traditional forest dwellers;
- To **strengthen the conservation regime of the forests** by including the responsibilities and authority of Forest Rights holders for sustainable use, conservation of biodiversity and maintenance of ecological balance.

Rights under FRA

- **Title rights** – Ownership to land that is being farmed by tribals or forest dwellers subject to a maximum of **4 hectares**; ownership is only for land that is actually being cultivated by the concerned family, meaning that no new lands are granted.
- **Use rights** – to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.
- **Relief and development rights** – to rehabilitation in case of illegal eviction or forced displacement; and basic amenities, subject to restrictions for forest protection.
- **Forest management rights** – to protect forests and wildlife.

Eligibility

- To qualify as **Other Traditional Forest Dweller (OTFD)** and be eligible for recognition of rights under FRA, two conditions need to be fulfilled:
 - Primarily resided in forest or forests land for three generations (75 years) prior to 13-12-2005, and
 - Depend on the forest or forest land for bonafide livelihood needs.
- To qualify as a **Forest Dwelling Scheduled Tribe (FDST)** and be eligible for recognition of rights under FRA, three conditions must be satisfied by the applicant/s, who could be **“members or community”**:
 - Must be a Scheduled Tribe in the area where the right is claimed; and
 - Primarily resided in forest or forests land prior to 13-12-2005; and

- Depend on the forest or forest land for bonafide livelihood needs.
- The FRA provides that a forest right conferred under the Act shall be **heritable but not alienable or transferable**, and shall be registered jointly in the name of both the spouses in case of married persons and in the name of the single head in the case of a household headed by a single person.

Process of recognition of rights

- The Act provides that the **gram sabha**, or village assembly, will initially pass a resolution recommending whose rights to which resources should be recognised.
- This resolution is then screened and approved at the **level of the sub-division** (or taluka) and subsequently at the **district level**.
- The **screening committees** consist of three government officials (Forest, Revenue and Tribal Welfare departments) and three elected members of the local body at that level. These committees also hear appeals.
- The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Rules, 2008, notified by the Ministry of Tribal Affairs for implementing the provisions of the Act, provide for **constitution of Forest Rights Committee** by the Gram Sabha for assisting it in its functions to –
- Prepare a list of claimants on forest rights;
- Verify claims as provided in the rules;
- Present their findings on the nature and extent of the claim before the gram sabha for its consideration;
- Prepare the claims on behalf of gram sabha for community forest rights in the prescribed form.

The PIB Link

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810605>

Question- Describe the operational procedures of Forest Rights Act. To what extent has it been able to protect tribal livelihoods, and engage the tribal population in sustainable forest management?

VOTING RIGHTS FOR OVERSEAS CITIZENS

Context

- Union Minister for Law and Justice in response to a question in the Lok Sabha stated that the government was exploring the possibility of allowing online voting for non-resident Indians (NRI).

Background

- In 2017, the government proposed to **remove the restriction imposed by Section 20A of the Representation of the People Act**, which required them to be **physically present to vote in their constituencies**.
- **The Bill provided for overseas voters to be able to appoint a proxy** to cast their votes on their behalf, subject to conditions laid down in the **Conduct of Election Rules, 1961**.
- **The Bill was later passed in 2018** but lapsed with the dissolution of the 16th Lok Sabha.
- **The ECI then approached the government to permit NRIs to vote via postal ballots** similar to a system that is already used by service voters, (a member of the armed Forces of the Union; or a member of a force to which provisions of the Army Act, 1950 which is the Electronically Transmitted Postal Ballot System or ETPBS).

Current Status of Voting for Overseas Citizens

- **After the passing of the Representation of the People (Amendment) Act, 2010:** NRIs who had **stayed abroad beyond six months** have been able to vote, but **only in person at the polling station where they have been enrolled as an overseas elector**.

- However, only a very low proportion of overseas residents actually registered or turned up to vote.
- The provision of having to visit the polling booth in person has discouraged eligible voters from exercising their mandate.
- The Conduct of Election Rules, 1961 was amended in 2016: to allow service voters to use the Electronically Transmitted Postal Ballot System (ETPBS).
- Under this system, postal ballots are sent electronically to registered service voters.
- The service voter can then register their mandate on the ballot and send it back via ordinary mail.
- The ECI proposed to extend this facility to overseas voters as well.
- In the case of overseas voters: their address mentioned in the passport is taken as the place of ordinary residence and chosen as the constituency for the overseas voter to enroll in.

Previous mandate

- Prior to 2010: an Indian citizen who is an eligible voter and was residing abroad for more than six months would not have been able to vote in elections.
- This was because the NRI's name was deleted from electoral rolls if he or she stayed outside the country for more than six months at a stretch.

How has the existing facility worked so far?

- From merely 11,846 overseas voters who registered in 2014, the number went up to close to a lakh in 2019.
- But the bulk of these voters (nearly 90%) belonged to just one State, Kerala.
- The Representation of the People Act: envisaged voters as only the "ordinary residents" in a constituency who will choose representatives to represent their local interests while meditating on larger issues in the legislature.
- Some democracies that already allow absentee voting stipulate that overseas electors are eligible to vote provided they are not abroad for a specified period of time and/or if they mention "intent to return".
- Section 20-1A, Part III of the Representation of the People Act addresses this to some extent by qualifying "a person absenting himself temporarily from his place of ordinary residence shall not by reason thereof cease to be ordinarily resident therein".
- And in essence provides for NRIs who are temporarily staying abroad to be eligible to vote in their local constituencies.

What is ETPBS and how does it function?

- The Conduct of Election Rules, 1961 was amended in 2016 to allow service voters to use the ETPBS.
- Under this system: postal ballots are sent electronically to registered service voters.
- The service voter can then download the ETPB (along with a declaration form and covers), register their mandate on the ballot and send it to the returning officer of the constituency via ordinary mail.
- The post will include an attested declaration form (after being signed by the voter in the presence of an appointed senior officer who will attest it).
- The ECI proposed to extend this facility to overseas voters as well.
- For this to commence, the Law Ministry has to amend the Conduct of Election Rules, 1961.
- In the case of NRI voters those seeking to vote through ETPBS will have to inform the returning officer at least five days after notification of the election.
- The returning officer will then send the ballot electronically via the ETPBS.
- The NRI voter can then register her/his mandate on the ballot printout and send it back with an attested declaration in a process similar to the service voter.
- Except in this case: the senior officer would be appointed by the Indian diplomatic or consular representative in the resident country of the NRI.
- The ECI has not specified whether the voter should send in the ballot through ordinary post to the returning officer or drop it off at the Indian consular office/embassy, which will then send the envelopes constituency-wise to the returning officers.

Viability of postal ballots

- **The ETPBS method allowed for greater turnout** among service voters in the 2019 Lok Sabha election.
- **With increasing mobility of citizens across countries** for reasons related to work, the postal ballot method has been recognised by the International Institute for Democracy and Electoral Assistance (an intergovernmental organization that works to support democratic processes and institutions) as a means to allow overseas voters to **exercise their right**, subject to certain conditions normally related to the time spent abroad or the work carried out abroad.
- **A postal ballot mechanism** that allows for proper authentication of the ballot at designated consular/embassy offices and an effective postal system should ease this process for NRIs, but rules must be clearly framed for eligibility on the basis of time spent away from the country.

The Hindu link

<https://epaper.thehindu.com/Home/ShareArticle?OrgId=GLG9L69V7.1&imageview=0>

Question- What are the challenges and implications of giving voting rights to overseas citizens. Explain.

SMILE SCHEME**Context**

- The Ministry of Social Justice & Empowerment has reviewed the SMILE scheme recently.

About the Scheme

- The **Ministry of Social Justice & Empowerment** has launched the **Central Sector Scheme “SMILE- Support for Marginalised Individuals for Livelihood and Enterprise”**.
- The umbrella scheme is designed to **provide welfare measures to the Transgender community and the people engaged in the act of begging**.
- The Ministry has allocated 365 crore rupees for the scheme from 2021-22 to 2025-26.
- It includes **two sub-schemes** – ‘**Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons**’ and ‘**Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in the act of Begging**’.
- It aims to strengthen and expand the reach of the rights that give the targeted group the necessary legal protection and a promise to a secured life.
- The Sub-scheme – ‘**Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons**’ includes the following components-
 - Scholarships for Transgender Students;
 - Skill development/vocational training will be provided to attain capacity, capability and desirability so that they can sustain and live a life of dignity by engaging in self-employment;
 - Composite Medical Health supporting Gender-Reaffirmation surgeries through selected hospitals;
 - Housing in the form of ‘GarimaGreh’ where food, clothing, recreational facilities, skill development opportunities, recreational activities, medical support etc. will be provided;
 - Setting up of Transgender Protection Cell in each state to monitor cases of offences and to ensure timely registration, investigation and prosecution of offences;
 - E-Services (National Portal & Helpline and Advertisement) and other Welfare Measures.
- The focus of the sub-scheme ‘**Comprehensive Rehabilitation of persons engaged in the act of Begging**’ are as follows-
 - Survey and identification;
 - Outreach work to mobilise the persons engaged in begging to avail the services available in the Shelter Homes;
 - The Shelter Homes will facilitate education for children engaged in the act of Begging and children of persons engaged in the act of Begging.

- Comprehensive resettlement.
- The scheme strengthens and expands the reach of the Rights that give the targeted group the necessary legal protection and a promise to a secured life.
- It also keeps in mind the social security that is needed through multiple dimensions of identity, medical care, education, occupational opportunities and shelter.

The PIB Link

<https://pib.gov.in/PressReleaseframePage.aspx?PRID=1797968>

Question- Write a short note on SMILE Scheme.



CivilsTap Hlmachal

GENERAL STUDIES 3.

ECONOMY

MARKET INFRASTRUCTURE INSTITUTION

Context

- The **Securities and Exchange Board of India (SEBI)** has said that the **National Stock Exchange (NSE)**, which is the country's largest equities and derivatives exchange, is a systemically significant market infrastructure institution that should be protected (MII).

Market Infrastructure Institution

- Institutions like **stock exchanges, depositories, and clearing houses** are all examples of Market Infrastructure Institutions, and they all play an important role in the nation's economic infrastructure.
- Market infrastructure, according to a panel established (in 2010) under the supervision of former Reserve Bank of India Governor Bimal Jalan, refers to the essential facilities and mechanisms that support the Indian capital market.
- The basic function of the securities and capital markets is to facilitate the allocation and reallocation of money and financial resources.
- MIIs contribute to the efficient use of money in the economy and the promotion of economic growth.
- It is they who provide the foundation of the capital allocation system, and they are essential for economic progress. They also have a net beneficial impact on society, just like any other infrastructural organisation would do.

Systematic Importance

- As evidenced by the extraordinary growth experienced by these institutions in terms of market capitalization of listed businesses, capital raised, investor accounts, and the value of assets kept in their depositories' account, MIIs are considered systemically significant in India.
- Any failure of such a MII might result in even more catastrophic breakdowns, which could result in an entire economic downturn that could conceivably extend beyond the borders of the securities market and the country itself.
- In light of the potential for a domino effect that a collapse of a MII might have on the broader market and economy, governance and supervision are extremely important, and they must be of the greatest possible quality.

Indian institutions that qualify as MIIs

- The SEBI lists seven stock exchanges, including the Bombay Stock Exchange, the National Stock Exchange, the Multi Commodity Exchange of India, and the Metropolitan Stock Exchange of India.

- **There are two depositories that have been designated as MIs:** the Central Depository Services Ltd. and the National Securities Depository Ltd., both of which are tasked with the safeguarding of securities as well as the facilitation of their trading and transfer.
- There are **seven clearing houses listed on the regulator's website**, including the Multi Commodity Exchange Clearing Corporation.
- Clearing houses, on the other hand, assist in the validation and finalisation of securities deals, as well as ensuring that both buyers and sellers adhere to their contractual commitments.

The Hindu link

<https://www.thehindu.com/business/markets/explained-what-are-market-infrastructure-institutions/article65086889.ece>

Question- Write a short note on Market Infrastructure Institutions and their importance.

THE RUSSIAN INVASION IS MAKING THE GLOBAL CHIP SHORTAGE SITUATION WORSE

Context

- A worsening of the worldwide chip scarcity situation is being caused by the ongoing war between Russia and Ukraine.
- Previously, it had been expected that the chip scarcity would last until at least the year 2023.
- The forecast was based on the pandemic's impact on a component that has become critical to the operation of the vast majority of the electronic devices we use on a daily basis.
- It is expected that the global semiconductor market will grow by 8.8 percent to USD 601 billion in 2017, driven by double-digit growth in the sensors and logic category; in addition, with the recent trends in electric mobility, automotive safety, and the Internet of Things (IoT), the demand for semiconductors will only increase going forward.

What caused the Shortage Crisis to erupt?

- Increased sales of laptop computers as a result of lockdowns reached levels not seen in a decade.
- As office work migrated out of the office, home networking equipment, cameras, and monitors were in high demand, and laptops were in high demand for a short period of time while schools were out.
- As a result of the mandatory stay-at-home laws, numerous people have turned to console gaming.
- These devices, which are in great demand, are based on a **thumbnail-sized semiconductor piece** (or parts at times), and may execute a variety of operations on a single device. Manufacturers create them on 200mm or 300mm wafers, depending on the application. These are then further divided into little pieces.
- While bigger diameter wafers are more expensive and are mostly utilised for high-end equipment, the gadgets that were in high demand required smaller diameter wafers to be manufactured.
- However, even before to the outbreak of the pandemic, the industrial equipment necessary to produce them was in limited supply. The reason for this was that the industry was going in the direction of 5G, which required the pricey silicon wafers.
- Chip manufacturers were suffocated by high customer demand for low-end items, along with massive orders from technology companies, which forced their plants to close as well during the lockdowns.
- As the industry attempted to progressively pull itself out of the supply constraint, logistical complexity added to the difficulty of the endeavour.
- After then, the expense of transporting containers around the world drove up the price of a critical component used in the majority of electronic products and autos worldwide.

What is the cause of the Russian invasion's impact on the chip shortage?

- **Ukraine provides rare gases required in the production of semiconductor fab lasers**, while **Russia sells rare metals such as palladium**, which are utilised in the production of semiconductors.

- In order to design chipsets that can power a wide range of devices ranging from autos to smartphones, this combination is essential.
- **Palladium is produced in huge quantities in Russia and South Africa**, which are the two main producers. Russia is expected to supply 2.35 million ounces (66 million grammes) of palladium in 2021.
- If those supplies were not available, the silvery-white market would experience a severe shortage, causing the price to rise.
- In addition to producing platinum and rhodium, **Russia is also a major producer of the other platinum group metals**, which might be swapped for palladium.
- As Russia's invasion of Ukraine progresses, the nation is being targeted by Western sanctions, which might cause a disruption in the country's exports, leaving semiconductor companies with less alternatives for sourcing raw materials to manufacture chip sets in the near future.

What steps are being taken by businesses and governments to adapt to these shifts?

- Businesses are reversing their intentions to outsource their operations. They are looking at the possibility of reshoring as a means of protecting themselves from global supply chain interruptions.
- **Reshoring, also known as onshoring, is the polar opposite of offshore and entails** bringing back the production and manufacture of items to the nation in which the firm was founded, rather than to a foreign location.
- A total of USD20 billion would be invested in two new chip production facilities in the state of Ohio, Intel said in February 2022. (US). The corporation intends to invest USD100 billion over the next decade and to construct eight more fab plants in the state during that time.
- **Intel is one of the few firms that both designs and manufactures its own chipsets, making it unique in the industry.**
- The opposite end of the spectrum is government assistance in creating an environment that is favourable to the establishment of facilities for the construction of semiconductor plants.
- The United States government is attempting to approve the **CHIPS Act**, which would provide semiconductor companies with USD52 billion in subsidies in order to expand chip manufacturing in the United States.

The Hindu link

<https://www.thehindu.com/news/international/the-russian-invasion-is-making-the-global-chip-shortage-situation-worse/article65183693.ece>

Question- How Russia Ukraine crisis has worsened the global chip shortage situation? Explain.

WHAT IS THE RBI'S MONETARY POLICY COMMITTEE, AND WHAT DOES IT DO?

Context

- Recently, a **dissident member** of the Reserve Bank of India's (RBI's) Monetary Policy Committee (MPC) has said that the central bank's accommodative policy stance "carries with it the **risk of falling behind the curve in future** because the stance limits the MPC's freedom of action in ensuing meetings".
- The MPC fixes the **benchmark interest rate** — or the base or reference rate that is used to set other interest rates — in India.
- An **accommodative stance** indicates a **willingness on the part of the central bank to expand money supply and cut interest rates**.

Monetary policy

- The **primary objective of the RBI's monetary policy** is to **maintain price stability** while keeping in mind the **objective of growth**.
- Price stability is a necessary precondition to sustainable growth.

- In May 2016, the **RBI Act was amended** to provide a legislative mandate to the central bank to operate the country's monetary policy framework. The framework, according to the RBI website, "**aims at setting the policy (repo) rate based on an assessment of the current and evolving macroeconomic situation; and modulation of liquidity conditions to anchor money market rates at or around the repo rate.**"
- Repo rate changes transmit through the money market to the entire the financial system, which, in turn, influences aggregate demand – a key determinant of inflation and growth.

The Committee

- Under **Section 45ZB** of the amended RBI Act, 1934, the central government is empowered to constitute a **six-member Monetary Policy Committee (MPC)** to determine the policy interest rate required to achieve the inflation target.
- The first such MPC was constituted on September 29, 2016.
- **Section 45ZB** lays down that "**the Monetary Policy Committee shall determine the Policy Rate required to achieve the inflation target**", and that "**the decision of the Monetary Policy Committee shall be binding on the Bank**".

Members of MPC

- Section 45ZB says the **MPC shall consist of the RBI Governor** as its ex officio **chairperson**, the **Deputy Governor** in charge of monetary policy, **an officer of the Bank** to be nominated by the Central Board, and **three persons to be appointed by the central government.**
- The last category of appointments must be from "persons of ability, integrity and standing, having knowledge and experience in the field of economics or banking or finance or monetary policy". (Section 45ZC)
- The members of the present MPC were notified by the Centre on October 5, 2020. The three members from outside the RBI are Prof Ashima Goyal, professor at the Indira Gandhi Institute of Development Research, Prof Jayanth R Varma, professor IIM-Ahmedabad, and Dr Shashanka Bhide, senior advisor at the National Council of Applied Economic Research.

The Hindu link

<https://indianexpress.com/article/explained/everyday-explainers/what-is-rbi-mpc-and-what-does-it-do-7801244/>

Question- Write a short note on composition and functioning of Monetary Policy Committee.

IF WOMEN ARE NOT EMPOWERED, THE ECONOMY LOSES

Context

- On international women's day, there is a need to emphasize on role of women in the economy.

Benefits of women participation

- With women participation in the workforce, economies grow faster.
- When women are empowered, the battle to eradicate poverty is more fruitful.
- Studies conducted in various nations have proven that there is a **direct correlation between greater gender diversity and higher GDPs.**

If women are not empowered, the nation's economy loses.

- A recent **study by the World Bank** found that **countries lose \$160 trillion in wealth due to the differences in lifetime earnings between men and women.**
- Women's participation in the workforce **in India is still among the lowest in the world at 19.9 per cent** (according to World Bank's data of 2020).

- Only **3.7 per cent of the leadership positions** in corporate India are occupied by women.
- Right from boardroom representation to entry-level roles, India is striving hard to ensure a balance in gender diversity.

Changing scenario

- In India women are breaking the glass ceiling in all sectors.
- In India, women have made it to the top as ministers and chief ministers, administrators in the government system and financial sector CEOs.
- Women are entering the world's third-largest startup ecosystem.
- According to a report by Bain & Company, female entrepreneurs can generate 150-170 million job opportunities in India by 2030 – that's more so why such entrepreneurs must be supported.
- More and more women take up unconventional roles, whether it be working at mining sites, in manufacturing or security outfits.
- Glass ceilings are beginning to shatter but there is a lot more to be done.
- But just as women begin to enter other male-dominated professions like the armed forces — women are now getting commissioned as fighter pilots — they are doing so in mining as well.

Conclusion

- Traditionally **male-dominated sectors like mining** need to **improve not only in terms of their gender representation but also in terms of the work culture they foster**.
- It is the culture at the workplace that determines not just whether a woman gets a seat at the table, but also whether her voice is heard.
- Every woman in our country deserves equal access to opportunities.
- It is only when we level up the playing field, do we see the true potential of our Bhartiya naari. Their success will define our nation's success.
- As a nation, we need to continue empowering our women to achieve our full potential as a superpower.
- We must ensure that all of India's women get equal access to education, equal access to opportunities, and equal pay at work.
- By empowering women, we increase their right to economic resources, as well as their decision-making powers.
- This, in turn, benefits their households and their communities. Women begin investing more in their children's education, the quality of human capital improves, and we as a nation reap the benefits of economic prosperity.
- The Union government has emphasized on the empowerment of women, beginning from their education and health, improving their quality of life to providing them loans to set up businesses.
- The private sector and civil society must pitch in to make this a mass movement.

The Indian Express link

<https://indianexpress.com/article/opinion/columns/if-women-are-not-empowered-the-economy-loses-7807503/>

Question- Increased women participation in economy will result multi-fold benefits to the society ranging from human capital formation to GDP growth. Elucidate.

REVIVING THE INLAND WATER TRANSPORT SYSTEM FOR THE NORTHEAST

Context

- The MV Lal Bahadur Shastri, which had sailed up the Ganga from Patna a month before, landed in Guwahati's Pandu port on the southern bank of the Brahmaputra on March 6, carrying 200 metric tonnes of food grains for the Food Corporation of India (FCI).

- It is thought that the event propelled inland water transport on two of India's most important river systems into the future.

Why is a Ganga-Brahmaputra cargo vessel in focus?

- When a cargo vessel sets sail from or docks at any river port, it is not unusual for people to take notice. However, a large number of VIPs gathered to greet the MV Lal Bahadur Shastri, a cargo vessel operated by the IWAI (Inland Waterways Authority of India), as it docked at Guwahati's Pandu port on March 6. Sarbananda Sonowal, Union Minister for Ports, Shipping, and Waterways, Assam Chief Minister Himanta Biswa Sarma, Guwahati MP Queen Oja, and IWAI Chairman Sanjay Bandopadhyay were among those who attended the ceremony.
- The vessel had begun sailing from Patna on the National Waterway 1 on February 5th (NW1, river Ganga). In India, it passed through Bhagalpur, Manihari, Sahibganj, Farakka, Tribeni, Kolkata, Haldia, Hemnagar, and Chilmari, while in Bangladesh, it passed through Khulna, Narayanganj, Sirajganj, and Chilmari before returning to India via National Waterway 2 (NW2, river Brahmaputra) via Dhubri and Jogighopa, a distance of 2,350 In India's landlocked northeast, which was highly reliant on India's inland water transport system before independence in 1947, the arrival of a vessel carrying 200 MT of food grains for the FCI has renewed optimism for the inland water transport system.

Is this the first such shipping of cargo?

- The shipment of freight from Patna to Pandu via Bangladesh was the first enterprise undertaken by FCI. Two 1,000-tonne barges carrying 1,233 tonnes of bagged fly ash travelled 2,085 kilometres (more than a month) from Kahalgaon in Bihar to Pandu in Uttar Pradesh in a similar experiment in 2018.
- A private company had purchased fly ash from the National Thermal Power Corporation's facility in Bihar for use in its cement mills in Assam and Meghalaya, which were located in those states. According to expectations, regular services between NW1 and NW2 will be established, "heralding a new age of inland water transport" for the northeast. A 252 MT shipment bound for eastern Assam's Numaligarh biorefinery arrived at Silghat in central Assam on February 15 after travelling from Haldia in West Bengal.
- According to the Indian Wind Energy Association, the process has already begun. Another vessel, the MV Ram Prasad Bismil, which is transporting two barges named Kalpana Chawla and APJ Abdul Kalam, began its trip from Haldia on February 17 and is anticipated to arrive in Pandu within a few days.

How would regular inland water service impact the northeast?

- Around the time of independence, Assam had the highest per capita income in the country, owing to the state's tea, lumber, coal, and oil industries' proximity to seaports on the Bay of Bengal through the Brahmaputra and Barak River systems (in southern Assam).
- Ferry services continued intermittently after 1947, but were discontinued during the 1965 war with Pakistan, because Bangladesh was formerly known as East Pakistan.
- As a result of the closure of the river channels, transportation by rail and road across the "Chicken's Neck," a short strip of West Bengal, became more expensive options.
- "The commencement of cargo transportation through the **Indo-Bangladesh Protocol (IBP)** route will present the corporate community with a viable, cost-effective, and environmentally friendly alternative." A seamless cargo transportation system has been deemed essential for the northeast," Mr Sonowal explained. "
- India has invested 80% of ₹305.84 crore to improve the navigability of the two stretches of the IBP (Indo-Bangladesh Protocol) routes. Attributed the resurgence of historical trade routes through Bangladesh to the Prime Minister's Gati Shakti initiative, which aims to gradually transform the northeast into a connectivity hub while increasing the speed with which cargo can be transported on the Brahmaputra, which meets the Ganga in Bangladesh. In that nation, these rivers are referred to as the Jamuna and the Padma.

What led to the establishment of the water cargo service via Bangladesh?

- Since the signing of the Protocol on Inland Water Transit and Trade between the two nations, the return of freight transport services over Bangladesh's waterways has come at a high cost. India has committed a total of 305.84 crore, or 80 percent of the total, to improving the navigability of two lengths of the IBP (Indo-Bangladesh Protocol) routes in Bangladesh — Sirajganj-Daikhowa and Ashuganj-Zakiganj, respectively.
- In addition, the seven-year dredging project on these two segments, which is projected to be completed by 2026, is likely to result in continuous transportation to the north-eastern area.
- IWAI authorities have said that once the IBP routes are opened for navigation, the distance between NW1 and NW2 will be reduced by over 1,000 kilometres. The government has also invested Rs. 4,600 crore on the Jal Marg Vikas project, which would increase the capacity of the National Waterway No. 1 to allow for the sustainable transit of boats weighing up to 2,000 tonnes.
- However, there are a few difficulties that need to be addressed. It has been difficult for the sailors who made the cargo journeys feasible to avoid being caught in fishing nets or being attacked by furious fisherman in Bangladesh. Officials believe that these difficulties will be resolved in due course.

The Hindu link

<https://www.thehindu.com/news/national/reviving-the-inland-water-transport-system-for-the-northeast/article65207285.ece>

Question- Reviving the inland water transport system for the Northeast will help in ensuring opportunities for development of the northeast. Elucidate.

NATIONAL LAND MONETISATION CORPORATION

Context

- The establishment of the National Land Monetization Corporation has been approved by the Union Cabinet (NLMC).
- A totally owned Government of India corporation, the NLMC would have an initial authorised share capital of Rs 5000 crore and a paid-up share capital of Rs 150 crore.
- **The National Land Management Corporation (NLMC)** would be responsible for the monetization of surplus land and building assets owned by 'Central Public Sector Enterprises' (CPSEs) and other government entities.
- The proposal is in accordance with the Budget Announcement for the fiscal years 2021-22.

The following are the primary functions of the NLMC:

- The National Land Management Corporation (NLMC) is anticipated to acquire, retain, manage, and monetize surplus land and building assets of CPSEs that are being closed, as well as surplus non-core land assets of government-owned CPSEs that are being strategically disinvested.
- This would expedite the closure of CPSEs and make the process of strategic disinvestment in CPSEs held by the government more seamless.
- It is possible to transfer these assets to NLMC in order for them to be held, managed, and monetized.
- Additionally, NLMC will provide advice and help to other government bodies (including CPSEs) in identifying their surplus non-core assets and monetizing them in a professional and efficient way in order to get the greatest possible value from those assets.
- In certain instances, the National Land Management Corporation (NLMC) will perform surplus land asset monetization as an agency function.
- It is anticipated that the National Land Monetization Center (NLMC) would serve as a repository of best practises in land monetization, as well as assist and give technical assistance to the government in the execution of the asset monetization programme.

Composition:

- The National Land Management Corporation (NLMC) will have the technical knowledge required to competently manage and monetize land assets on behalf of CPSEs and other government bodies.
- The Board of Directors of NLMC will be comprised of top Central Government officials and prominent specialists to ensure that the company's operations and management are conducted in a professional manner.
- Members of the NLMC's Board of Directors, including the Chairman and non-government directors, will be nominated through a merit-based selection procedure.

What does monetisation mean?

- Monetisation of government assets fundamentally implies that the government transfers the revenue rights of the asset (which might be idle land, infrastructure, or a public-sector undertaking) to a private party for a fixed length of time.
- In such a deal, the government receives an upfront payment from the private firm, a regular portion of the revenue generated by the asset, a commitment of continued investment in the asset, and the title rights to the monetised asset in exchange for the asset.
- **There are a variety of methods for monetizing government assets;** in the case of land monetization for specific spaces such as offices, this can be accomplished through the use of a Real Estate Investment Trust (REIT), which is a company that owns and operates a land asset and, in some cases, provides funding for income-producing real estate properties.
- The **Public Private Partnership (PPP)** model allows for the monetisation of government assets as well as the privatisation of public assets. There are a variety of reasons why the government chooses to liquidate its assets. One of them is the development of new streams of revenue for the company.
- Although the economy has already suffered as a result of the coronavirus epidemic, income is required in order to achieve the Narendra Modi government's goal of building a **\$5 trillion economy**. It is also done to unlock the potential of underutilised or unneeded assets by incorporating institutional investors or private parties in the process of monetization.
- Third, it is done in order to produce resources or **cash for future asset development**, such as leveraging the money created through monetisation to fund the construction of new infrastructure projects, among other things.

How much land is currently available for monetisation?

- According to the Economic Survey 2021-2022, CPSEs have put approximately 3,400 acres of land up for grabs for prospective monetisation as of right now, according to the report.
- These lands have been sent to the Department of Investment and Public Asset Management for further investigation (DIPAM). According to the survey, the monetisation of non-core assets by public sector undertakings (PSUs) such as MTNL, BSNL, BPCL, B&R, BEML, HMT Ltd, Instrumentation Ltd, and others is at various levels.
- In March 2020, for example, BSNL said that it has identified a total of 24,980 crore worth of properties that may be monetised. Railways and Defence Ministries, on the other hand, own the majority of government land in the country.
- In all, the railways have more over 11 lakh acres of land accessible, with 1.25 lakh acres of that property being unoccupied. It is estimated that the Defence Ministry has 17.95 lakh acres of land under management.
- Around 1.6 lakh acres of this land is included inside the 62 military cantonments, with the remaining more than 16 lakh acres lying beyond the cantonment limits.

What are the possible challenges for NLMC?

- Furthermore, the effectiveness and productivity of the NLMC will be influenced by the government's ability to meet its disinvestment objectives.
- During the first quarter of fiscal year 2021-22, the government has only been able to raise a total of 12,423.67 crore from different types of disinvestment.

- In the budget for fiscal year 2021-22, the government first set a disinvestment target of 1.75 lakh crore, which was later reduced to 78,000 crores after public feedback. The Life Insurance Corporation initial public offering (IPO), which was expected to raise Rs. 60,000 crores, is now clouded in doubt as a result of the **Russia-Ukraine situation**, which has caused stock markets to become unpredictable. If the initial public offering (IPO) does not hit the markets by the end of March, the government will fall well short of its disinvestment objectives.
- The process of finding a buyer for the state-owned airline Air India required a significant amount of time and talks before the Tata Group entered the picture.
- Furthermore, the process of asset monetisation does not come to an end when the government transfers revenue rights to private players; identifying profitable revenue streams for the monetised land assets, ensuring adequate investment by the private player, and establishing a dispute resolution mechanism are all critical tasks.
- Another potential problem would be **the adoption of Public-Private Partnerships (PPPs) as a monetisation mechanism**, which might provide a significant obstacle.
- For example, the outcomes of the Centre's public-private partnership (PPP) project for the railways, which was started in 2020, were not positive. While the Indian Railways had asked private firms to run 150 trains, when bids were opened, nine clusters of trains saw no bidders, while three clusters had only two interested bidders, indicating that the invitation to bid had failed.
- In the case of these three clusters, the only serious bidder was IRCTC, which is owned by the Indian Railways. The inclusion of only a few serious bids would also raise the likelihood of a less competitive environment, which would mean that a small number of private organisations may establish a monopoly or duopoly in the operation of surplus government property.
- In the case of airports, for example, concerns were raised when the government removed the limit on the number of airports that could be bid for by a single entity, resulting in the Adani Group acquiring control of six city airports from the Airports Authority of India for a total of Rs. 2,440 crore.

The Hindu link

<https://www.thehindu.com/news/national/the-national-land-monetisation-corporation/article65223601.ece>

Question- Describe the roles and functions of National Land Monetisation Corporation.

SWARNAJAYANTI FELLOWSHIPS SCHEME

Context

- The Ministry of Science and Technology has shortlisted applications for the Swarnajayanti Fellowships Scheme.

About the scheme

- The Government of India under the **Ministry of Science and Technology** had instituted “**The Swarnajayanti Fellowships**” to commemorate India’s fiftieth year of Independence in **1997**.
- Under this scheme a **selected number of young scientists**, with proven track record, are provided **special assistance and support to enable them to pursue basic research in frontier areas of science and technology**.
- Scientists selected for the award will be allowed to pursue unfettered research with freedom and flexibility in terms of expenditure as approved in the research plan.
- The project should contain **innovative research ideas** and it should have a potential of making an impact on R&D in the discipline.
- The fellowships are **scientist specific and not institution specific**, very selective and have close academic monitoring.

Nature of Support

- The award consists of a Fellowship of **Rs 25000/- per month** in addition to the salary drawn from the parent Institute for a period of 5 years.
- The fellows selected along with their projects will be considered for funding by the **Science & Engineering Research Board (SERB)** as per SERB norms, for fellowship.
- SERB is a statutory body of the Department of Science and Technology (DST), Ministry of Science and Technology, established through the SERB Act, 2008.
- Supporting basic research in emerging areas of Science & Engineering is the primary and distinctive mandate of the Board.
- The duration of the fellowship will be for a **period not exceeding five years**.

Article link

<https://dst.gov.in/scientific-programmes/scientific-engineering-research/human-resource-development-and-nurturing-young-talent-swarnajayanti-fellowships-scheme>

Question- Write a short note on Swarnajayanti Fellowships Scheme.

CivilsTap Hlmachal

ENVIRONMENT

IPCC SOUNDS ANOTHER CLIMATE WARNING

Context

- Recently, the Intergovernmental Panel on Climate Change (IPCC) published a report in which it reviewed scientific evidence in the natural and social sciences as well as the economy.
- The IPCC came to the **conclusion that climate change has already caused irreversible losses and damage to land, coastal and marine ecosystems and that these losses and damages are likely to continue in the future.**
- As per report, if global average surface temperature rises by more than 1.5 degrees Celsius above pre-industrial levels, it warns of severe consequences for food supply, human health, biodiversity loss, and the integrity of the natural environment.

Key features of the report

- A series of urgent steps that global leaders must take are proposed by Working Group II, based on time frames for the near-term, mid-term, and long-term implications of climate change produced by average temperatures surpassing 1.5 degrees Celsius.
- The **IPCC's Working Group II study, titled "Impacts, Adaptation, and Vulnerability,"** is one of three expert publications that will contribute to the IPCC's overall Assessment Report 6, which is scheduled to be released in September of next year.
- The results of one study were published last year. According to scientific estimates, between 3.3 and 3.6 billion people **"live in environments that are particularly vulnerable to climate change."**
- Residents in coastal areas who are endangered by rising sea levels and extreme weather events such as cyclones and floods are included in this category. Naturally, India has numerous major coastal cities, like Mumbai and Chennai that play key roles in the country's manufacturing, exports, and services industries.
- The IPCC's assessment indicates that a policy review is needed to assist these cities in adapting to climate change. As a result, IPCC's judgments are categorised as having varying degrees of "very high confidence" to "low confidence," depending on how strong the evidence is.
- Human impacts on habitat are one area in which the data provides 'high confidence,' according to the researchers. Environmental scientists have shown that "unsustainable use of natural resources, habitat fragmentation, and ecosystem degradation caused by pollution, both globally and within protected areas, enhance ecosystem sensitivity to climate change." When taken as a whole, fewer than 15 percent of the world's land, 21 percent of its freshwater, and 8 percent of its ocean are designated as protected areas.

Threats

- Climate change poses a challenge to food production, which is a crucial factor of human well-being and advancement.
- A comparison is made between agricultural development that contributes to food security and **"unsustainable agricultural expansion, driven in part by unbalanced diets,"** which the scientists describe as a stressor that increases ecosystem and human vulnerability, resulting in competition for land and water.
- There is a dire outlook for a world that warms by 2 degrees Celsius (or more), and the report states that if global warming continues to rise at its current rate until 2041-60, food security risks will "become more severe, leading to malnutrition and micronutrient deficiencies, primarily in Sub-Saharan Africa, South Asia, Central & South America, and Small Islands." There are, however, adaption possibilities that should be considered as part of an inclusive strategy.

- Crop enhancement, agroforestry, community-based adaptation, farm and landscape diversity, and urban agriculture are all examples of methods for increasing food production. The principles of agroecology (a holistic approach that incorporates ecological and social concepts for sustainable agriculture), ecosystem-based management in fisheries and aquaculture, and the use of natural processes can all help to improve food security, nutrition, health, livelihoods, biodiversity, sustainability, and ecosystem services, according to the Intergovernmental Panel on Climate Change.
- If global temperatures rise by only 1.5 degrees Celsius, between 3 and 14 percent of all species on the planet would become extinct, with disastrous consequences if temperatures rise by more than 1.5 degrees Celsius. Likewise, ecological calamities will have an influence on the situation.

Are there any policy prescriptions?

- According to the research, **between 2010 and 2020, human mortality from floods, droughts, and storms was 15 times greater** in extremely susceptible regions than in places with very low susceptibility, which should serve as a warning.
- **South Asia**, along with **South East Asia and East Asia, and Sub-Saharan Africa**, is a **hotspot** because it has the highest absolute numbers of people displaced by extreme weather, followed by South East Asia and East Asia.
- There are some recommendations for India. Hefty rainfall has risen over most of the Indian subcontinent; Chennai, as well as Chittagong, Dhaka and Mumbai, and other cities on the Gangetic Plain and the Delhi-Lahore corridor, are all expected to become major migration hotspots in the near future.
- **Heat Health Action Plans**, which incorporate early warning and response systems for excessive heat, are one type of corrective action that might be implemented.
- To address the threat of water-borne and food-borne disease in densely populated areas, measures such as
 - Increasing access to potable water,
 - Lowering the vulnerability of water and sanitation systems to flooding and extreme weather events, and
 - Enhancing early warning systems are needed.
- The **IPCC recommends that adaptation initiatives be integrated into institutional budget and policy planning, that legislative mechanisms be established**, that monitoring and evaluation frameworks be established, and that recovery measures be implemented following catastrophes.
- Furthermore, the introduction of "behavioural incentives and economic instruments that address market failures, such as climate risk disclosure, inclusive and deliberative processes, strengthen adaptation actions by public and private actors," according to the report, "will strengthen adaptation actions by public and private actors."

Options for climate resilient development

- According to the IPCC's estimate, the window of opportunity to limit the global temperature rise below 1.5 degrees Celsius is closing rapidly. In fact, there is already widespread agreement that, based on the current promises made by states who signed the **Paris Agreement**, this target is unachievable to achieve, and that the average temperature might climb by as much as 3°C, with potentially disastrous effects.
- **Climate Resilient Development** is the solution, and it would connect all approaches toward significant reductions in greenhouse gas emissions, the establishment of mechanisms to absorb a significant portion of the CO₂ stock in the atmosphere, and the raising of adequate climate financing for adaptation.
- According to the IPCC, the worldwide trend of urbanisation presents an urgent and crucial opportunity to enhance climate-resilient development in this area. Coastal cities and communities play a particularly crucial role in this process.
- What will not work, though, is urbanisation that is both energy-intensive and market-driven. The same cannot be said for insufficient and mismatched financial resources, as well as a mistaken emphasis on grey infrastructure rather than environmentally and socially responsible measures.
- Wrong policies in sectors like as housing, for example, might actually lock in maladaptation, which would have a disproportionate impact on impoverished populations. Poor land use regulations,

compartmentalised approaches to health, ecological and social planning, and other factors all contribute to the lack of resilience in a society.

- According to the assessment, the remainder of the present decade is critical in directing the globe toward a low-carbon future.

The Hindu link-

<https://www.thehindu.com/sci-tech/energy-and-environment/ipcc-sounds-another-climate-warning/article65183951.ece#:~:text=Sounding%20a%20warning%2C%20the%20report,regions%20with%20very%20low%20vulnerability.>

Question- Intergovernmental Panel on Climate Change (IPCC) in a recently published report has given stringent warnings of risks associated with climate change and given policy prescriptions to counter it adverse effects. Elucidate.

CLIMATE OF DENIAL

Context

- The IPCC, a body of almost 270 experts from 67 countries, brought together by the United Nations, gave a bleak assessment of the future of our planet and species.
- In its **sixth assessment report**, titled '**Impacts, Adaptation and Vulnerability**', the **IPCC discusses the increasing extreme heat, rising oceans, melting glaciers, falling agricultural productivity, resultant food shortages and increase in diseases like dengue and zika.**
- Antonio Guterres, the United Nations Secretary General, describes the **IPCC report as being "an atlas of human suffering and a damning indictment of failed climate leadership."** He added, "With fact upon fact, this report reveals how people, and the planet are get-ting clobbered by climate change".

Situation in India

- In India, we are living in the future that the IPCC predicts. Our cities are experiencing more frequent **extreme heat waves.**
- In Delhi, the **AQI for winter months averages between 300-500**, akin to smoking one to two packs of cigarettes every day. Delhi, Mumbai and Kolkata are in the list of the top 15 most polluted cities of the world, as per the Switzerland-based climate change group IQAir.
- The IPCC warns that **should our planet get warmer than 1.5 degrees Celsius from pre-industrial times** (we are at 1.1 degrees at present), then there will be **irreversible impact on "ecosystems with low resilience"** such as **polar, mountain and coastal ecosystems** "impacted by glacier melt, and higher sea level rise".
- This will cause devastation to "infrastructure in low-lying coastal settlements, associated livelihoods and even erosion of cultural and spiritual values."
- The **increased heat** will lead to **an increase in diseases like diabetes, circulatory and respiratory conditions**, as well as **mental health challenges.**
- Clearly, adverse climate change is an all-encompassing condition damaging our minds, our lungs and our livelihoods.

Unequal impact

- The IPCC also highlights that **climate "maladaptation" will especially affect "marginalised and vulnerable groups adversely, indigenous people, ethnic minorities, low-income households and informal settlements"** and those in rural areas.
- Therefore, India, with a majority of its people falling in these categories, will be especially devastated.
- The IPCC **highlights India as a vulnerable hotspot**, with **several regions and cities facing climate change phenomena like flooding, sea-level rise and heatwaves.** For instance,
- Mumbai is at high risk of sea-level rise and flooding, and Ahmedabad faces the danger of heat waves — these phenomena are already un-derway in both cities.

- Vector-borne and water-borne diseases such as malaria and dengue will be on the rise in sub-tropical regions, like parts of Punjab, Assam and Rajasthan.
- When the concentration of carbon dioxide in the atmosphere increases, the grains we consume, including wheat and rice, will have diminished nutritional quality. But this presumes we will not face a crisis in food.

Declining yields

- Annexure I of the IPCC report says that over the past 30 years, **major crop yields have de-creased by 4-10 per cent** globally due to climate change. Consequently, India, which continues to be predominantly agrarian, is likely to be especially hurt.
- Yet, it is not just our agrarian segments that will be impacted. **Urban India** is at greater risk than other areas with a projected population of 877 million by 2050 nearly double of 480 million in 2020.
- The **concentration of population** in these cities will **make them extremely vulnerable to climate change**.

The Indian express link

<https://indianexpress.com/article/opinion/columns/ipcc-report-climate-change-india-politicians-7801706/>

Question- Adverse impacts of climate change are already visible in India with rising cases of extreme weather events. Explain. What could be the possible impacts of such events on various strata of population in India?

INDIA COOLING ACTION PLAN (ICAP)

Context

- Recently, Minister of State, Ministry of Environment, Forest & Climate Change in Lok Sabha gave information on ICAP.

About ICAP

- The India Cooling Action Plan (ICAP) was launched in 2019 by the **Ministry of Environment, Forests and Climate Change**. The ICAP provides a 20-year perspective and outlines actions needed to provide access to sustainable cooling.
- The plan describes cooling as a “**developmental need**” and seeks to address the rising demand in cooling, from buildings to transport to cold-chains, through sustainable actions.
- The overarching goal of ICAP is **to provide sustainable cooling and thermal comfort for all** while securing environmental and socio-economic benefits for the society. This will also help in reducing both direct and indirect emissions.
- The plan estimates that the national cooling demand would grow eight times in the next 20 years, which would result in a corresponding five to eight-fold rise in the demand for refrigerants that involve the use of HFCs.
- The Plan seeks to
 - **Reduce cooling demand across sectors by 20% to 25% by 2037-38,**
 - **Reduce refrigerant demand by 25% to 30% by 2037-38,**
 - **Reduce cooling energy requirements by 25% to 40% by 2037-38,**
 - **Recognise “cooling and related areas”** as a thrust area of research under national Science and Technology Programme,
 - Training and certification of 100,000 servicing sector technicians by 2022-23, synergizing with Skill India Mission.
- As part of the ICAP, the government has also announced **targeted R&D efforts** aimed at developing low-cost alternatives to HFCs.

Government Initiatives

- With regard to **reduction of cooling and energy demand in Space Cooling in building sector**, a list of action points have been finalised after mapping of the recommendations of the India Cooling Action Plan with the ongoing government programmes/ schemes of the various Ministries.
- Towards promoting passive cooling in buildings, **Bureau of Energy Efficiency (BEE) has brought out the Energy Conservation Building Code (ECBC) for all large commercial (non-residential) buildings and Eco-Niwas Samhita (ECBC-R) for the residential buildings.**
- Studies on **promoting non-Ozone Depleting Substances (ODSs) and low Global Warming Potential based technologies in Cold Chain**, Building sector and Public Procurement have been undertaken and reports have been published.
- To promote indigenous development of low global warming potential refrigerants, the Department of Science and Technology, Government of India has funded a **research project to the Council of Scientific and Industrial Research (CSIR)- Indian Institute of Chemical Technology**, Hyderabad.
- Indian Institute of Technology, Delhi, in collaboration with Bureau of Indian Standards has undertaken a **simulation study for developing safety standards for flammable refrigerants** in the Refrigeration and Air-conditioning sector.
- Up-skilling and certification of 43,450 Refrigeration and Air-conditioning (RAC) service technicians has been undertaken under the national skill qualification framework (NSQF) of the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** of the Ministry of Skill Development and Entrepreneurship (**MSDE**). In addition, 29,000 RAC service technicians are being trained as part of implementation of Hydrochlorofluorocarbons (HCFCs) phase out Management Plans under the Montreal Protocol.

Benefits:

- The following benefits would accrue to the society over and above the environmental benefits:
- **Thermal comfort for all** – provision for cooling for EWS and LIG housing,
- **Sustainable cooling** – low GHG emissions related to cooling,
- **Doubling Farmers Income – better cold chain infrastructure** – better value of produce to farmers, less wastage of produce,
- **Skilled workforce** for better livelihoods and environmental protection,
- **Make in India** – domestic manufacturing of air-conditioning and related cooling equipments,
- Robust R&D on alternative cooling technologies – to provide push to innovation in cooling sector.
- Cooling is also **linked to human health and productivity**. Linkages of cooling with **Sustainable Development Goals (SDGs)** are well acknowledged.
- The cross-sectoral nature of cooling and its use in development of the economy makes provision for cooling an important developmental necessity.
- The development of ICAP has been a multi-stakeholder inclusive process encompassing different Government Ministries/Departments/Organizations, Industry and Industry Associations, Think tanks, Academic and R&D institutions.

The PIB Link

<https://pib.gov.in/PressReleasePage.aspx?PRID=1805795>

Question- Describe India Cooling Action Plan (ICAP), government initiatives in this direction and potential benefits that can accrue from this plan.

FAME SCHEME

Context

- Under the FAME-India Scheme, incentives are provided to buyers of electric vehicles in the form of an upfront reduction in the purchase price of electric vehicles.

- The incentive is linked to battery capacity i.e. Rs. 10,000/KWh for e-3W and e-4W with a cap 20% of the cost of vehicle. Further, the incentive/ subsidies for e-2W has been increased to Rs. 15,000/KWh from Rs. 10,000/KWh with an increase in cap from 20% to 40% of the cost of vehicle w.e.f. 11th June, 2021.

About the Scheme

- The **National Electric Mobility Mission Plan (NEMMP) 2020** is a National Mission document providing the vision and the roadmap for the faster adoption of electric vehicles and their manufacturing in the country.
- As part of the NEMMP 2020, the **Department of Heavy Industry** (under the Ministry of Heavy Industries & Public Enterprises) formulated a Scheme viz. Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme in 2015.
- The objective of the FAME India scheme is to **promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same.**
- The scheme encourages adoption of Electric and hybrid vehicles by **offering upfront incentives** on purchase of Electric vehicles and establishing a necessary charging Infrastructure for electric vehicles.
- The scheme aims at **addressing the issue of environmental pollution and fuel security.**

Phase-I

- The Phase-I of this Scheme was initially launched for a period of 2 years, commencing from 1st April 2015, which was subsequently extended up to 31st March 2019.
- The 1st Phase of FAME India Scheme was implemented through four focus areas namely (i) Demand Creation, (ii) Technology Platform, (iii) Pilot Project and (iv) Charging Infrastructure.

Phase-II

- Phase-II of FAME India Scheme is being implemented for a period of 3 years w.e.f. 01st April, 2019.
- This phase focuses on **supporting electrification of public & shared transportation** and aims to support, through subsidies, approximately 7000 e-Buses, 5 lakh e-3 Wheelers, 55000 e-4 Wheeler Passenger Cars and 10 lakh e-2 Wheelers.
- In addition, **creation of charging infrastructure** is also supported for electric vehicles.

Key Objectives

- Encourage faster adoption of electric and hybrid vehicles by way of offering **upfront Incentive on purchase of Electric vehicles.**
- Establishing necessary charging Infrastructure for electric vehicles.
- To address the issue of environmental pollution and fuel security.

The PIB link

<https://pib.gov.in/PressReleasePage.aspx?PRID=1806139>

Question- Write a short note on Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India (FAME India) scheme.

INDIA'S SOLAR CAPACITY: MILESTONES AND CHALLENGES

Context

- In 2021, India will have added a record 10 Gigawatts (GW) of solar energy capacity to its total installed capacity. This has been the most significant 12-month capacity expansion, with approximately a 200 percent increase in capacity year on year. As of the 28th of February, in 2022, India has achieved a total installed solar capacity of more than 50 GW.
- This is a significant step forward in India's goal of generating 500 GW of renewable energy by 2030, with solar power accounting for almost 30% of the total. India's capacity increases place the nation sixth in the

world in terms of solar power deployment, accounting for roughly 6.5 percent of the world's total cumulative solar power capacity of 709.68 Gigawatts (GW).

Why is India falling short in roof-top solar installations?

- It is symptomatic of the significant drive to increase the number of utility-scale solar projects across the country that there has been a rapid increase in big, ground-mounted solar energy installations. The deployment of RTS is expected to reach 6.48 GW in 2021, falling well short of the Union Government's aim of 40 GW of RTS by the end of the year 2022. Due to the emphasis on large-scale solar PV, the various benefits of decentralised renewable energy (DRE) choices, such as the decrease in transmission and distribution (T&D) losses, are not being fully exploited.
- One of the key advantages of solar PV technology is that it can be deployed close to the point of consumption, hence avoiding the need for big, capital-intensive transmission system facilities. As a result, India must deploy large-scale solar PV together with smaller-scale solar PV, and it must increase its efforts in renewable transportation systems (RTS). Residential users and Small and Medium-Sized Enterprises (SMEs) that wish to install RTS, on the other hand, may find it difficult to obtain financing.
- As a result of this, and the tepid response from power distribution companies (**DISCOMS**) to adopting net metering, RTS adoption continues to be low across the country. Governments, utilities, and banks will all need to look at new financial systems that will lower the cost of loans while also lowering the risk of investing on the part of investors.
- Increased awareness, as well as inexpensive financing for RTS projects, have the potential to enable the widespread adoption of RTS by thousands of SMEs and households across the country. Roof space consolidation might also assist to lower the overall cost of RTS installations by allowing for the development of economies of scale.

What are the challenges to India's solar power capacity addition?

- Despite large increases in installed solar capacity, the contribution of solar energy to the country's electricity output has not kept pace with the increase in installed solar capacity.
- Solar power, for example, generated just 3.6 percent (50 billion units) of India's total electricity output in 2019-20, which was 1390 billion units. Utility-scale solar PV continues to confront issues such as high land prices, significant T&D losses and other inefficiencies, and difficulty in integrating solar PV into the power grid.
- There have also been clashes with local populations and violations of biodiversity conservation laws and regulations. In addition, while India has achieved record-low solar power generating costs in the utility-scale segment, this has not translated into lower electricity prices for end-users in the residential sector.

What's the state of India's domestic solar module manufacturing capacity?

- The country's current production capacity in the solar energy industry are insufficient to meet the country's current prospective demand for solar energy. According to a research by Crisil on the issue, India has a 3 GW capacity for solar cell manufacture and an 8 GW capacity for solar panel production as of March 31, 2021, according to the report.
- Furthermore, there is no backward integration in the solar value chain since India does not have the ability to manufacture solar wafers or polysilicon, as is the case in China. During the fiscal year 2021-22, **India imported solar cells and modules worth about \$76.62 billion from China alone, accounting for 78.6 percent of India's** total imports during that year.
- Reduced manufacturing capacity, combined with lower-cost imports from China, has made Indian products uncompetitive in the local market. A circular economy model for solar energy systems may, however, help to rectify the current issue if India adopted it. This would allow solar PV trash to be recycled and used across the solar PV supply chain, which would be beneficial. By the end of 2030, India is expected to create roughly 34,600 metric tonnes of trash from solar PV installations.
- The International Renewable Energy Agency (IRENA) predicts that the worldwide value of recoverable elements from solar PV waste might be in excess of \$15 billion, according to their estimations. At the moment, only the European Union has taken significant measures to address the issue of solar PV waste.

- Developing proper criteria for **Extended Producer Responsibility (EPR)**, which entails holding manufacturers accountable for the whole life cycle of solar PV devices and defining standards for waste recycling, should be a priority for India. This might provide a competitive advantage to domestic businesses while also contributing to the reduction of waste and the alleviation of supply-chain limitations.

The Best Way Forward

- **Identification of Geographical Areas:** Renewable resources, particularly wind, cannot be installed everywhere; they require a specific geographic area.
- The identification of these precise areas, the integration of these locations into the main grid, and the distribution of power are the three elements that will propel India into the future.
- **Exploration:** It is necessary to investigate other storage options.
- In order to guarantee that just the necessary quantity of energy is utilised, the agricultural subsidies should be amended.
- Electric vehicles and hydrogen fuel cell-based vehicles are the most suited solutions when it comes to transitioning away from fossil fuels and toward renewable sources of energy, and it is in this area that we must focus our efforts.

The Hindu link

<https://www.thehindu.com/sci-tech/energy-and-environment/indias-solar-capacity-milestones-and-challenges/article65227709.ece>

Question- Despite showing promising growth solar power capacity addition suffers from various challenges. Explain.

THE COMPLEXITIES OF INTRODUCING AFRICAN CHEETAHS TO INDIA

Context

- Asiatic cheetah is classified as a **“critically endangered”** species by the IUCN Red List, and is believed to survive only in **Iran**.
- Asiatic cheetahs were once widespread across India but were eradicated in the country as they were hunted for sport.
- Historically, Asiatic cheetahs had a very wide distribution in India. There are authentic reports of their occurrence from as far **north as Punjab to Tirunelveli district in southern Tamil Nadu, from Gujarat and Rajasthan in the west to Bengal in the east**.
- The cheetah’s habitat was also diverse, favoring the more open habitats: **scrub forests, dry grasslands, savannas and other arid and semi-arid open habitats**.
- In 1952, Asiatic cheetah was **declared extinct** from India, after decades of human intervention, hunting and habitat degradation.
- In Iran, the last surviving population of wild Asiatic cheetahs are found in **hilly terrain, foothills and rocky valleys within a desert ecosystem**, spread across seven provinces of Yazd, Semnan, Esfahan, North Khorasan, South Khorasan, Khorasan Razavi and Kerman.
- The current estimate of the population of wild Asiatic cheetahs is about 40 with 12 identified adult animals.
- It is recorded that the last cheetahs were shot in India in 1947, but there are credible reports of sightings of the cat till about 1967.
- Asiatic cheetahs are almost identical in appearance to their better known African cousins. However, there are subtle differences.
- The Asiatic cheetah is slightly smaller and paler than its African cousin.

African Cheetah

- The African cheetah is spread out across Africa from Northwest Africa, East Africa, and Southern Africa. With a bigger territory, the African cheetahs have higher populations compared to Asiatic cheetahs.
- They are categorized as **Vulnerable** in the IUCN Red List.

Conservation efforts

- The Government of India decided to **reintroduce cheetahs, under the 'Action Plan for Introduction of Cheetah in India'**.
- Project Cheetah aims to bring back independent **India's only extinct large and fastest mammal – the cheetah**. As part of the project, 50 cheetahs will be introduced in various National Parks over five years."
- The stated goal is to establish viable cheetah metapopulation in India that allows the cheetah to perform its **functional role as a top predator** and to provide space for the expansion of the cheetah within its historical range thereby contributing to its global conservation efforts.
- **Madhya Pradesh's Kuno National Park** is all set to reintroduce African Cheetahs as part of India's first **inter-country big cat relocation project**. The cheetahs will be donated by Endangered Wildlife Trust (EWT) of South Africa.

Why do conservationists want to reintroduce cheetahs?

- A section of conservationists has long advocated the reintroduction of the species in the country.
- They argue that introductions of large carnivores have increasingly been recognised as a **strategy to conserve threatened species and restore ecosystem functions**.
- The cheetah is the only large carnivore that has been extirpated, mainly by over-hunting in India in historical times. India now has the **economic ability** to consider restoring its lost natural heritage for ethical as well as ecological reasons.

Complexities in introducing African Cheetahs in India

- According to some experts, it was more important to **conserve species that were still extant such** as the lion and tiger, rather than trying to re-establish an extinct species that had little chance of **surviving** in a greatly transformed country.
- African cheetahs are not required to perform the role of the top predator in these habitats when the site (Kuno) that they have identified already has a **resident population of leopards, transient tigers and is also the site for the translocation of Asiatic lions** as ordered by the Supreme Court of India in 2013.
- One of the goals is to enhance India's capacity to sequester carbon through ecosystem restoration activities in cheetah conservation areas and thereby contribute towards the global climate change mitigation goals. Experts contend that this objective does not require the introduction of African cheetahs, at a cost of ₹40 crore, with the **attendant risks of diseases** which haven't really been dealt with.
- The **lack of extensive areas** extending in hundreds if not thousands of square kilometers with sufficient density of suitable prey, it is very unlikely that African cheetahs would ever establish themselves in India as a truly wild and self-perpetuating population.
- A major consequence of the project will be the **diversion of scarce conservation resources**, distraction from the real conservation priorities and a further delay in the translocation of lions to Kuno.

The Hindu link

<https://www.thehindu.com/sci-tech/energy-and-environment/the-complexities-of-introducing-african-cheetahs-to-india/article65243065.ece>

Question- Introducing African Cheetahs in India is marred by many complex issues. Explain.

CORAL BLEACHING

Context

- According to the **Great Barrier Reef Management Authority**, which oversees the world's biggest coral reef system, Australia's Great Barrier Reef, the reef is now suffering a widespread coral bleaching event.
- For the **sixth time in six years**, the coral reef system has been attacked by a widespread and **destructive bleaching event**, and it is the fourth time in the last six years that such an event has taken place. In conjunction with the bleaching event, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is now conducting a scientific mission in Australia for a period of ten days.

About corals

- Corals are **made up of polyps**, which are creatures that are genetically similar to one another. The microscopic algae zooxanthellae, which live within the tissues of these polyps, are responsible for their existence.
- Corals and algae have a mutualistic interaction with one another.
- **Zooxanthellae** rely on the coral to give them with essential nutrients and chemicals for **photosynthesis to occur**.
- In exchange, the zooxanthellae provide the coral with organic products of photosynthesis, such as carbohydrates, which are used by the coral polyps in the production of their calcium carbonate skeletons, as well as other nutrients.
- Zooxanthellae, in addition to providing corals with critical nutrients, are responsible for the vibrant colours and patterns found in corals' natural habitat.
- As such, they are referred to as "**rainforests of the oceans.**"

There are two types of corals:

- Corals that are **stony and shallow-water** in nature—the sort that form reefs.
- **Soft corals and deep water corals** are corals that reside in dark, cold water and are soft to the touch.

What is Coral Bleaching and how does it work?

- When corals are stressed by changes in environmental circumstances such as temperature, light, or nutrients, they eject the symbiotic algae zooxanthellae that live in their tissues, resulting in the corals turning entirely white in colour. Coral bleaching is the term used to describe this event.
- The **transparent calcium carbonate tissues**, which are visible due to the lack of pigment-producing zooxanthellae, have a faint white colour due to the loss of pigment.
- It is possible for corals to recover from stress-induced bleaching if the bleaching is not severe.
- Coral bleaching has been occurring on a regular basis in the Caribbean, Indian, and Pacific oceans for some years.

What are the causes of coral bleaching?

- **Increase in Sea Temperature:** Because most coral species reside in seas that are close to the hottest temperature they can endure, even a minor increase in ocean temperature can be detrimental to corals. El Nino raises the temperature of the ocean and causes coral reefs to die.
- **Ocean Acidification:** As carbon dioxide levels rise, the seas absorb an increasing amount of carbon dioxide. This raises the acidity of ocean water and reduces the capacity of corals to build calcareous skeletons, which is critical for their survival in the ocean.
- **Solar radiation and UV radiation:** Shifts in tropical weather patterns result in reduced cloud cover and increased radiation, both of which contribute to coral bleaching and coral reef degradation.
- **Infectious Diseases:** The penetration of bacteria such as *Vibrio shiloi* affects the photosynthesis of zooxanthellae, which is a kind of algae. Because of the increased potency of these bacteria, higher sea temperatures are being seen.

- **Chemical Pollution:** Increased nutrient concentrations have an adverse effect on corals because they encourage phytoplankton development, which in turn encourages a rise in the number of species that compete with coral for space.
- **Significant Sedimentation:** Land clearance and coastal development cause high rates of erosion and a larger density of suspended silt particles, which can cause a variety of problems.
- **Overfishing, pollution from agricultural and industrial runoff,** coral mining, and the growth of industrial zones near coral ecosystems are all examples of human-induced threats that have a negative influence on corals.

Consequences

- Changes in coral ecosystems can have an impact on the species that rely on them for food and shelter, such as the fish and invertebrates that rely on living coral for protection and food. The extinction of such marine species has the potential to disrupt the whole food chain.
- When corals perish as a result of bleaching, it is possible that genetic and species diversity may decline.
- Divers and other tourists are attracted to healthy coral reefs. Tourism might be discouraged by bleached and deteriorated reefs, which can have a negative impact on the local economy.
- Coral bleaching has the potential to create significant alterations in fish populations. This can result in fewer catches for fishermen, which has a knock-on effect on the availability of food and the economic activities that support it.
- By absorbing continual waves from the ocean, coral reefs shield coasts from increased storm damage, erosion, and floods. People who live near the shore are therefore protected from increased storm damage, erosion, and flooding.

Way Forward

- Solutions for ensuring the **long-term viability of coral reefs** must cross social, economic, and cultural borders to be effective.
- Putting a **stop to uncontrolled coastal development** would go a long way toward reversing the degradation of coral reefs in some areas.
- **Coral conservation** may be aided by encouraging sustainable fishing practises and giving chances for ecotourism.
- There is a pressing need to **reduce the use of chemically enhanced fertilisers,** insecticides, pesticides, and herbicides, which are non-biodegradable and can destroy corals and other marine organisms and ecosystems.
- **Industrial waste** that is harmful to the environment **must be processed** before it may be dumped in bodies of water.
- **Water pollution** should be avoided wherever feasible by **refraining from discharging chemicals** or oils into bodies of freshwater.
- The **implementation of all feasible steps to prevent acts that aggravate global warming,** given that climate change is the most serious worldwide danger to coral reef ecosystems.

The Hindu link

<https://www.thehindu.com/sci-tech/energy-and-environment/great-barrier-reef-coral-bleaching-australia-explained/article65261961.ece#:~:text=Bleaching%20happens%20when%20corals%20experience,not%20beneficial%20to%20the%20corals.>

Question- Explain the composition of coral reefs and phenomenon of coral bleaching.

SCIENCE AND TECHNOLOGY

XENOTRANSPLANTATION

Context

- The **first person to receive a heart transplant from a pig has died**, two months after the groundbreaking experiment.
- Prior attempts at **such transplants — or xenotransplantation —** have failed largely because patients' bodies rapidly rejected the animal organ. This time, **surgeons used a heart from a gene-edited pig**.
- Scientists had modified the animal to remove pig genes that trigger the hyper-fast rejection and add human genes to help the body accept the organ.

About Xenotransplantation

- **Xenotransplantation** is any procedure that involves the **transplantation, implantation or infusion into a human recipient** of either (a) live cells, tissues, or organs from a **nonhuman animal source**, or (b) human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs. The development of xenotransplantation is, in part, driven by the fact that the demand for human organs for clinical transplantation far exceeds the supply.

Significance

- This breakthrough may bring us one step closer to **resolving the worldwide organ scarcity**.
- Xenotransplantation, if found compatible in the long run, could help provide an alternative supply of organs to those with life-threatening diseases.
- It can eliminate illegal organ trafficking.
- In **India, between 25,000 and 30,000 liver transplants are required** each year. However, just **approximately 1,500 people receive them**.
- According to the health ministry, **over 0.18 million individuals in India suffer from renal failure** each year, but **only about 6,000 kidney transplants are performed** in the nation.
- In the case of the heart, **50,000 patients have heart failure** and require a heart transplant.
- Despite this, **barely 10-15 heart transplants** are performed in India each year.
- **Pigs have an edge over primates** when it comes to organ harvesting since they are **easy to grow and reach mature human size in six months**.
- **Pig heart valves are frequently transplanted** into humans, and some diabetic patients have received pancreatic cells from pigs.
- Pigs have long been used in human medicine, **including pig skin grafts and implantation of pig heart valves**.

Why pigs?

- The **pig's anatomical and physiological parameters are similar to that of humans**, and the **breeding of pigs in farms is widespread and cost-effective**. Also, many varieties of pig breeds are farmed, which provides an opportunity for the size of the harvested organs to be matched with the specific needs of the human recipient.
- Also, the **pig's heart is similar to the human heart**.

How pig heart is made compatible for a human?

- The **molecular incompatibility between pigs and humans can trigger several immune complications after the transplant**, which might lead to **rejection of the xenograft**.

- To preempt that situation, **genetic engineering** is used to **tweak the genome of the pig** so as to 'disguise' it, so that **the immune system of the human recipient fails to recognise it**, and the reactions that lead to xenograft rejection are not triggered.

Issues associated with xenotransplantation

- **Animal rights:** Many people, especially animal rights organisations, are highly opposed to murdering animals in order to harvest their organs for human use.
- **Reduced life expectancy:** In the 1960s, many organs were harvested from chimps and transplanted into terminally ill individuals, who did not live much longer as a result.
- **Religious violations:** In Islam and many other religions, some animals, such as pork, are absolutely banned.
- **Informed consent:** When considering the future uses of xenotransplantation, autonomy and informed consent are critical.
- **Zoonosis dangers:** The safety of public health is an important element to consider. We are already dealing with the most serious zoonotic disease danger.

Related laws

- In India, we have the **Human Organs Transplant Act 1994**, but it **doesn't mention animal transplants** even as a possibility in extreme emergencies.

Way Forward

- Instead of outright prohibiting xenotransplantation, the **government should examine** the possibilities and conduct **research and trials before legalising xenotransplantation in India**.
- India should **adopt the Spanish concept of "presumed consent,"** in which everyone is deemed a donor after death unless they opt out during their lifetime.

The Indian Express link

<https://indianexpress.com/article/explained/everyday-explainers/what-is-xenotransplantation-7814612/>

Question- What is xenotransplantation? Describe the process, technical and ethical issues involved with it.

MISSION GAGANYAAN

Context

- The current status of Gaganyaan programme is as follows:
- An **Astronaut training facility** has been commissioned in Bengaluru. Training activities are progressing well at the newly commissioned Astronaut training facility.
- The design of all systems and sub-systems for Gaganyaan has been completed. Realisation of the same is in different stages of progress.
- Long duration qualification test of human rated cryogenic engine and First phase testing of human rated **VIKAS Engine** completed. First phase of demonstration tests for Gaganyaan service module propulsion system completed.
- The MoU, Contracts and Implementation Arrangements (IA) related activities with both national and international agencies are progressing well. The design of various human centric products has been completed and various prototypes are under realization.
- Roles and responsibility for crew recovery operations and rehearsals finalized. Detailed operational requirements for nominal missions scenarios worked out.

- The activities related to development of microgravity experiments have commenced. The conceptual design for experiments is under review.

About the Mission

- Announced by Prime Minister Narendra Modi in 2018, Gaganyaan is the **first Indian Human Space Flight Programme (HSP)** with the objective to demonstrate the capability to send humans to **low earth orbit** on board an Indian launch vehicle and bring them back to earth safely.
- A **geosynchronous orbit** is a high Earth orbit that allows satellites to match Earth's rotation. Located at 22,236 miles (35,786 kilometers) above Earth's equator, this position is a valuable spot for monitoring weather, communications and surveillance.
- The spacecraft, which is being developed by the **Indian Space Research Organisation (ISRO)**, consists of a service module and a crew module, collectively known as the Orbital Module.
- With this, **India could potentially become the fourth country to send a man to space**, after the erstwhile USSR, the US and China. (Denmark also has a manned space flight scheduled for 2022)
- The first of the two pre-Gaganyaan flights with a **humanoid** will be launched soon along with some of the six shortlisted micro-gravity experiments.
- **GSLV Mk III**, the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability.

Recent developments

- Four pilots from the Indian Air Force (IAF) were shortlisted to receive training as astronauts of Gaganyaan.
- The chosen astronauts have begun their 12-month training at the **Gagarin Research and Test Cosmonaut Training Centre (GCTC)** in Moscow.
- ISRO unveiled its first 'woman' astronaut '**Vyomamitra**', a **Lady robot**. It is a **half-humanoid**. Vyommitra will ride to space in the first test flight of the human space mission, Gaganyaan.
- The humanoid will simulate the human functions required for space before real astronauts take off.
- Recently, Government of India announced that the final crewed Gaganyaan mission will be launched in 2023.

The PIB Link

<https://pib.gov.in/PressReleasePage.aspx?PRID=1808586>

Question- Write a short note on Gaganyaan mission.

THE ARTEMIS PROGRAMME, NASA'S NEW MOON MISSION

Context

- National Aeronautics and Space Administration (NASA) rolled out its Artemis I moon mission to the launchpad.
- Along with NASA, Canadian Space Agency, European Space Agency, Japan Aerospace Exploration Agency are also involved in the Artemis programme

What is the Artemis mission?

- NASA's Artemis mission is touted as the next generation of lunar exploration, and is named after the twin sister of Apollo from Greek mythology. Artemis is also the goddess of the moon.
- Artemis I is the first of NASA's deep space exploration systems. It is an uncrewed space mission where the spacecraft will launch on Space Launch System (SLS) — the most powerful rocket in the world
- The SLS rocket has been designed for space missions beyond low-earth orbit and can carry crew or cargo to the moon and beyond. With the Artemis programme, NASA aims to land humans on the moon by 2024, and it also plans to land the first woman and first person of colour on the moon.

- NASA will establish an Artemis Base Camp on the surface and a gateway in lunar orbit to aid exploration by robots and astronauts.

Key Technical Aspects

- **Orion Spacecraft**- The NASA spacecraft that will carry astronauts from Earth to lunar orbit and back. The Orion spacecraft is going to remain in space without docking to a space station.
- **Space Launch System Rocket**- The only rocket that can send Orion, astronauts, and cargo to the Moon on a single mission.
- **Artemis Base Camp**- To give astronauts a place to live and work on the moon, the Artemis Base Camp concept includes a modern lunar cabin, a rover, and a mobile home.

Future missions in the Artemis programme

- **Artemis I** will be an uncrewed test flight of the Space Launch System (SLS) and the Orion spacecraft around the Moon.
- **Artemis II**, the second flight under the programme, will have crew on board and will test Orion's critical systems with humans onboard. Eventually, the learnings from the Artemis programme will be utilised to send the first astronauts to Mars.
- **Artemis III** spacecraft will land people on the Moon's South Pole. NASA plans on using the lunar orbit to gain the necessary experience to extend human exploration of space farther into the solar system.

The Hindu link

<https://www.thehindu.com/sci-tech/the-artemis-programme-nasas-new-moon-mission/article65237662.ece>

Question- Write a short note on Artemis mission.

UNDERSTANDING HYPERSONIC WEAPONS

Context

- Recently the Russian Ministry of Defence announced that it used the hypersonic missile for the first time in the conflict with Ukraine.

About hypersonic weapons

- They are manoeuvrable weapons that can fly at speeds of at least Mach 5, five times the speed of sound.
- The speed of sound is Mach 1, and speeds above Mach 1 are supersonic and speeds above Mach 5 are hypersonic.
- They are different from Ballistic missiles which, even though they travel much faster, follow a fixed trajectory and travel outside the atmosphere to re-enter only near impact. Once the ballistic missiles are launched they cannot alter their course.
- On the other hand, hypersonic weapons travel within the atmosphere and can maneuver midway which combined with their high speeds make their detection and interception extremely difficult. This means that radars and air defences cannot detect them till they are very close and have only little time to react.

Types of hypersonic weapons

- There are two classes of hypersonic weapons, Hypersonic glide vehicles (HGV) and Hypersonic Cruise Missiles (HCM).
- HGVs are launched from a rocket before gliding to a target, while HCM are powered by high-speed, air-breathing engines, or scramjets, after acquiring their target.

- The HGV leaves the Earth's atmosphere and then plunges back into it. To fool the enemy's radar, this hypersonic vehicle glides through the upper layers of the atmosphere, through a random series of curves and turns.
- HCM is not as fast as HGV, but is designed to fly low and at extremely high speed. This is to take the enemy by surprise. And there is hardly any time for the enemy to hit back.

What is different about hypersonic technology?

- Hypersonic missiles are a new class of threat because they are **capable both of manoeuvring and of flying faster than 5,000 kilometres per hour**, which would enable such missiles to **penetrate most missile defences** and to further **compress the timelines for response by a nation under attack**.

Challenges in developing the technology

- **Friction** is the key challenge as the temperatures go up to as high as 2,200 degrees Celsius. And these missiles have to be designed from highly advanced materials which have the capability of withstanding such high temperatures.
- **Communication** is another issue, as it becomes difficult to connect in these hypersonic weapons as the heat builds up a **cloud of super-charged particles known as plasma**. There is a blackout moment in communications when a spacecraft is re-entering the atmosphere.
- Another challenge faced is maneuverability at high speeds, as it puts a lot of pressure on the structure of the missile.

India and Hypersonic technology

- **India** became the **fourth country** to have demonstrated this technology **after the USA, Russia and China**
- India is also **developing** an indigenous, dual capable (conventional as well as nuclear) **hypersonic cruise missile as part of its Hypersonic Technology Demonstrator Vehicle programme** and has successfully tested a Mach 6 scramjet
- In addition, the **DRDO established a Hypersonic Wind Tunnel (HWT)** test facility
- HWT test facility is a pressure vacuum driven enclosed free jet facility having nozzle exit diameter of one metre and will simulate Mach No. 5 to 12 speeds. Wind tunnels are enormous tubes through which air rushes at great speeds. Air is directed around an item in these tunnels, allowing it to reach the flying stage. The hypersonic wind tunnel is **used to test flight characteristics in a hypersonic region** of Mach number 5 or more.
- A hypersonic version (BrahMos-II) of the BrahMos supersonic cruise missile, a joint development of India and Russia, is also under development.

Its significance in protecting the interest of our nation

- Hypersonic technological advancements, along with a **rising US-China rivalry** and a year-long **stalemate with Indian soldiers in eastern Ladakh**, pose a significant danger to India's space and surface capabilities.
- To maintain a minimum **credible deterrence**
- It can provide **advanced security** as they are tough to be detected
- As interception is tough, it gives a **strategic advantage during war**
- As the speed is high, it **can avoid interception** and can have increased **efficiency over hitting the target**
- The technology that is needed to develop the hypersonic technology can be used for **developing other scientific discoveries** that can help our country
- In 2021, China had launched a rocket and it had carried a hypersonic glide vehicle (HGV).

The Hindu link

<https://www.thehindu.com/news/national/understanding-hypersonic-weapons/article65249442.ece>

Question- Write a short note on Hypersonic weapons.



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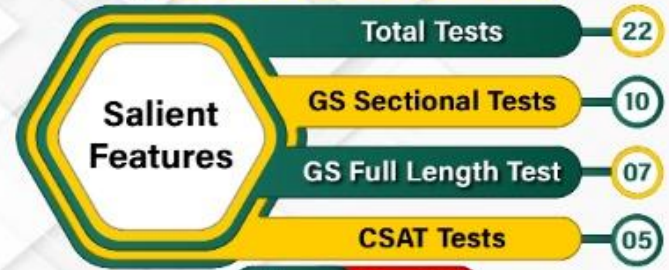
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