

IQRA IAS



CURRENT AFFAIRS

MARCH 2021

INDEX

TOPICS	PAGES
1) Polity and Governance	03-13
2) International Relations	14-35
3) Security and Defence	36-42
4) Economy	43-53
5) Science and Technology	54-65
6) Ecology and Environment	66-80
7) Social Issues	81-87
8) Miscellaneous	88-92

POLITY AND GOVERNANCE

Paper II: This section is relevant to Polity and Governance Section of GS Paper II

1.1 LATERAL ENTRY

Topic: Functions and Responsibilities of Various Constitutional Bodies

Why in News: Recently, the Union Public Service Commission (UPSC) sought applications for three posts of Joint Secretary and 27 posts of Director in central government Departments. These individuals, who would be recruited under “lateral entry” into the government secretariat, would be contracted for three to five years.

Post of Joint Secretary and Director

A Joint Secretary has the third highest rank (after Secretary and Additional Secretary) in a Department. The Joint Secretary functions as the administrative head of a wing in the Department and Directors are one rank below the rank of Joint Secretary.

Lateral entry into the government

Lateral entry means the appointment of specialists from the private sector in government organisations. Government is looking for outstanding individuals, with expertise in revenue, financial services, economic affairs, agriculture, cooperation and farmers' welfare, road transport and highway, shipping, environment, forests and climate change, new and renewable energy, civil aviation and commerce.

The Sectoral Group of Secretaries (SGoS) on Governance in its report submitted in 2017 and NITI Aayog recommended the recruitment of personnel at middle and senior management levels in the central government. These ‘lateral entrants’ would be part of the central secretariat which normally only has bureaucrats from the All India Services/ Central Civil Services.

Reasons for conducting lateral recruitment

Lateral recruitment is aimed at achieving the twin objectives of adding new talent in the government as well as to increase the availability of manpower in the government. They are generally recruited for specific assignments in government, due to their specialised knowledge and expertise in a particular domain area.

Advantages of Lateral Entry

- **Complexity:** Governance is becoming more and more complex requiring specialised skills. Generalist officer cannot be always expected to be up-to-date with the specialized

knowledge. Therefore, people with expertise and specialist domain knowledge are required to navigate the complex needs of present day administrative challenges.

- **Personnel shortage:** According to Department of Personnel and Training data there is shortage of about 1500 IAS officers. Lateral entry will help bridge this gap.
- **Organisation culture:** It will help in bringing change in organisation culture in Government sector culture. It will help in bringing the values of economy, efficiency and effectiveness in Government sector. It will help in building culture of performance with in Government sector.
- **Liberalisation Policy and Civil services:** The generalist Civil Services was designed for a time when the State was all-powerful. After liberalisation in 1991, markets are playing critical role in administration. In such environment, regulatory capacity of govt. is critical which depend upon the up to date knowledge of administrators, which require fresh intake from private sector.
- **Participatory Governance:** In the present times governance is becoming more participatory and multi actor Endeavour, thus lateral entry provides stakeholders such as the private sector and non-profits an opportunity to participate in governance process.

Issues Involved

- **Need for transparent process:** The key again to the success of this scheme would lie in selecting the right people in a manner which is manifestly transparent. Constitutional role of UPSC should not be ignored as it will provide legitimacy to the entire process of selection
- **Difference in Organisational values:** The value systems between the government and the private sector are quite different. It is important to ensure that the people who come in are able to have the skills to adjust to a totally different system of functioning. This is because government imposes its own limitations.
- **Profit motive vs. Public service:** Private sector approach is profit oriented on the other hand motive of Government is public service. This is also a fundamental transition that a private sector person has to make while working in government.
- **Internal Resistance:** Lateral entry is likely to face strong resistance from in service Civil Servants and their associations. There are already reports
- **Constitutional mandate for affirmative action:** On the constitutional mandate for affirmative action as a result of the creation of a new recruitment channel at a senior level,
- **Issue of conflict of interest:** The movement from private sector raises issues of potential conflict of interest. This issue requires stringent code of conduct for entrants from private sectors to ensure conflict of interest is not detrimental to public good.

- **Narrow scope:** Lateral entry at only at top level policy making positions may have little impact on field level implementation, given the multiple links in the chain of command from the Union Government to a rural village.
- **Lack of specific criteria:** The criteria laid out in the advertisement were broad-based, and so failed to provide a narrow window to attract people of eminence or domain experts in the fields advertised for.

Earlier lateral entry appointments

The current round of recruitment is the second round of such recruitments. Earlier, the government had decided to appoint experts from outside the government to 10 positions of Joint Secretary in different Ministries/Departments and 40 positions at the level of Deputy Secretary/Director. After a selection process by the UPSC, nine individuals were recommended for appointment in nine different Ministries/Departments in 2019.

Reservation provisions for lateral recruitment

All the posts under the current lateral recruitment are “unreserved”, meaning there are no quotas for Scheduled Caste, Scheduled Tribe and Other Backward Class. As per a 2018 circular of Department of Personnel and Training (DoPT), there should be reservation for SC/ST/OBC candidates, for appointments to Central Government posts, that last for more than 45 days. However, as per information provided by DoPT, reservation does not apply in a single post cadre.

Since each post to be filled under the current lateral recruitment is a Single Post (as they have been advertised/considered separately for each Department), reservation is not applicable. In the current recruitment, if the 27 Directors would have been considered as a single group, seven posts would have to be reserved for OBCs, four for SCs, one for ST, and two for EWS category. Similarly, each of the nine individuals appointed in 2019 was recruited as a separate appointment and there was no reservation under it.

Way Forward

An intensive training program for entrants from the private sector to civil services need to be formulated which help them understanding the complex nature of work in Government.

There should be open competition for the Lateral entry with due transparent process including all necessary checks and balances to ensure persons with integrity and political neutrality enters the government service.

Lateral entry as done in the past was on an ad hoc basis it cannot be considered a suitable model of manpower planning. There is therefore a need to institutionalize the process of induction of outside talent into the government.

1.2 SANSAD TV

Why in News: The Lok Sabha Television (LSTV) and Rajya Sabha Television (RSTV) have been merged into a single 'Sansad TV'. This merger has been finalised nearly after two years of work. On March 1, retired IAS officer Ravi Kapoor was appointed the Chief Executive Officer of the channel.

History of telecast of Parliament proceedings

Since 1989, select parliamentary proceedings had been televised. For example the Presidential Address to the joint session that takes place on the first day of the first session of the year would be telecast live.

In April 1994, the entire proceedings of Lok Sabha started to be filmed. And in August that year, a Low Power Transmitter (LPT) was set up and made operational in Parliament House to telecast the proceedings live. From December 1994, Question Hour in both Houses were telecast live on alternate weeks on Doordarshan.

It was arranged in such a manner that during the telecast of the Question Hour of one House by Doordarshan, the Question Hour of the other House was broadcast by All India Radio. When the DD News channel was launched, Question Hour in both Houses started getting telecast simultaneously on DD channels.

Lok Sabha TV (LSTV)

- It is the first parliamentary channel of India. It started operating in 2006. It is dedicated to the Lower House of the Parliament. Owned and operated by Lok Sabha Secretariat, LSTV has the mandate to telecast uninterrupted live proceedings of the Lok Sabha.
- It is a dedicated 24x7 satellite free to air channel which is aimed at broadcasting live proceedings of Lok Sabha of Parliament and other programs.
- In its role as a Public Broadcaster, the channel produces and showcases program revolving around different facets of democracy. It broadcasts in Hindi and English language.

Rajya Sabha TV (RSTV)

It was launched in 2011. Apart from telecasting live proceedings in Rajya Sabha, it also brings analysis of parliamentary affairs, and provides a platform for knowledge-based programs. With RSTV using better technology, its budget is bigger than that of LSTV.

Background to the merger of LSTV and RSTV

- In November 2019, after deliberations between Lok Sabha Speaker Om Birla and Rajya Sabha Chairman Venkaiah Naidu, a six-member committee headed by former Prasar Bharati Chairman Surya Prakash was set up.
- The aim of setting up the committee was cutting costs, streamlining management of the channel and to make content more attractive product for viewers and advertisers.
- It submitted its report in February 2020, on modalities for pooling resources, manpower and technology through the merger of the two channels.

News Summary:

- The Lok Sabha Television (LSTV) and Rajya Sabha Television (RSTV) have been merged into a single 'Sansad TV'. There was a lot of duplicity on efforts and resources between the channels and this was leading to an additional financial burden.
- This merger will provide a more integrated approach to the parliamentary content which is broadcasted. It will reduce additional burden on finances by pooling in the resources of both the channels and synergising the broadcast of parliamentary proceedings through an integrated channel.
- Three different sub-committees are currently examining the report to finalise the integration of technical and manpower resources of both channels.
- The Sansad TV umbrella will be headed by a single person. If two different channels are set up under one umbrella as per the recommendations of the panel, then the two are likely to have separate editorial heads.

1.3 LEGAL FRAMEWORK IN INDIA FOR FOREIGNERS

Why in News: The Jammu and Kashmir administration has shifted 168 Rohingya refugees, including women and children, living in Jammu to a holding centre.

News Summary

The holding centre had been set up in the Hiranagar sub-jail in Kathua by a Home Department notification under Section 3(2)e of Foreigners Act.

The holding centre was readied a week before Rohingyas were shifted there. The prisoners and under trials in this sub-jail were shifted to other prisons of Jammu. As per the prescribed process after sending these refugees to the holding centre, their nationality verification will be done and on that basis the procedure for deportation will be initiated.

The refugees shifted to the holding centre were not holding valid passports required in terms of Section (3) of the Passports Act.

Legal Framework in India regarding Foreigners

Foreigners Act, 1864

The first enactment made for dealing with foreigners was the Foreigners Act, 1864. It provided for the expulsion of foreigners and their arrest, detention pending removal and for a ban on their entry into India after removal.

Passport (Entry into India) Act, 1920

The Passport (Entry into India) Act, 1920 was one of the early set of rules made against illegal migrants and it empowered the government to make rules requiring persons entering India to be in possession of passports. This rule also granted the government the power to remove from India any person who entered without a passport.

Foreigners Act, 1940

During the Second World War, the Imperial Legislative Assembly enacted the Foreigners Act, 1940, under which the concept of “burden of proof” was introduced.

Foreigners Act, 1946

- By repealing the 1940 Act, the legislature enacted the Foreigners Act, 1946, conferring wide powers to deal with all foreigners. It also restricted the rights enjoyed by foreigners in terms of their stay in the country if any such orders are passed by the authority.
- The Act empowered the government to take such steps as are necessary, including the use of force for securing compliance with such directions.
- **Definition:** The act defines foreigner as a person who is not a citizen of India.
- **Powers under Foreigners Act, 1946:**

It empowered the government to make provisions for:

- Prohibiting, regulating or restricting the entry of foreigners into India
- Departure of foreigners from India or their presence in India

Deportation

Central Government is vested with powers to deport a foreign national under section 3(2)(c) of the Foreigners Act, 1946. These powers to identify and deport illegally staying foreign nationals have also been delegated to the State Governments/ Union Territory Administrations and the Bureau of Immigration.

Burden of proof

The most important provision of the 1946 law, which is still applicable in all States and Union Territories, is that the 'burden of proof' lies with the person and not with the authorities.

Foreigners (Tribunals) Order

- Under Section 3 of The Foreigners Act, 1946 the government brought in the Foreigners (Tribunals) Order. It is applicable to the whole country.
- The tribunal has the authority to decide whether a person is a foreigner within the ambit of the Foreigners Act, 1946. The tribunal, which has powers similar to those of a civil court, gives reasonable opportunity to the person alleged to be a foreigner to produce evidence in support of his case, before passing its order.
- In 2019, the Home Ministry made certain amendments in the Foreigners (Tribunals) Order, 1964. It was to empower district magistrates in all States and Union Territories to set up tribunals to decide whether a person staying illegally in India is a foreigner or not.

1.4 NATIONAL CAPITAL TERRITORY OF DELHI (AMENDMENT) BILL

Why in News: The Centre recently passed the National Capital Territory of Delhi (Amendment) Bill, 2021 in the Lok Sabha. The Bill proposes certain amendments to the Government of National Capital Territory of Delhi (GNCTD) Act, 1991.

Delhi's status

- **Article 239AA of the Constitution granted special status to Delhi among Union Territories (UTs) in the year 1991 through the 69th constitutional amendment.** It provided Delhi the status of a National Capital Territory (NCT) with a Legislative Assembly.
- As per Article 239AA, land, public order, police, and services in Delhi fall under the control of Central Government which has the power to make laws on these matters.

- The GNCTD Act, 1991 was passed simultaneously to supplement the constitutional provisions relating to the Assembly and the Council of Ministers in Delhi.
- The GNCTD Act outlines the powers of the Assembly, the discretionary powers of the L-G, and the duties of the Chief Minister with respect to the need of sharing information with the L-G.
- However, over the years, there has been a lack of clarity between the government in Delhi and the Centre over policy decisions and the powers of the L-G.

Supreme Court's view on LG

In its 2018 verdict, the Supreme Court had held that the L-G's concurrence is not required on issues other than police, public order and land. However, the SC said that the decisions of the Council of Ministers will have to be communicated to the L-G.

It further held that the status of the Lieutenant Governor of Delhi is that of an administrator and not of a Governor of a State.

LG's power: The SC had observed the LG was bound by the aid and advice of his council of ministers in matters where the assembly has legislative powers. However, the LG does have the power to refer any matter, over which there is a disagreement with the elected government, to the President under Article 239AA(4).

The SC had also pointed that the LG should not act in a mechanical manner to refer every decision of the Council of Ministers to the President.

National Capital Territory of Delhi (Amendment) Bill, 2021

Amendments proposed in the Bill

- **"Government" to mean "Lieutenant Governor (LG)":** The expression 'Government' referred to in any law to be made by the Legislative Assembly shall mean the Lieutenant Governor (LG).
- **Widening of Discretionary Powers of LG:** The Bill gives discretionary powers to the LG even in matters where the Legislative Assembly of Delhi is empowered to make laws.
- **Necessarily Granted an Opportunity to LG:** It seeks to ensure that the LG is "necessarily granted an opportunity" to give her/his opinion before any decision taken by the Council of Ministers (or the Delhi Cabinet) is implemented.
- **Related to Administrative Decisions:** The amendment also says that "Legislative Assembly shall not make any rule to enable itself to consider the matters of day-to-day

administration of the Capital or conduct inquiries in relation to the administrative decisions”.

Impacts

- The Bill makes it clear that the term ‘Government’ in any law made by the Legislative Assembly of Delhi shall mean the Lieutenant Governor. Further, the elected government will have to obtain the opinion of the LG before taking any executive action based on the decisions of the Cabinet to any individual minister. Moreover, the LG can specify the matters on which his opinion should be taken.
- Encouraged by the Supreme Court verdict, the elected government had stopped sending files on executive matters to the L-G before the implementation of any decision. It used to inform the LG about all administrative developments, but not necessarily before implementing or executing any decision.
- The proposed change will force the elected government to take the L-G’s advice before taking any action on any cabinet decision.
- Another major provision is that the assembly cannot make any rule to enable itself or its committees to consider the matters of day-to-day administration or to conduct inquiries in relation to any administrative decision. This will provide protection to officers who often face the fear of being summoned to the assembly or its committees for administrative decisions. The proposed amendment also specifies that any rule made in violation of this provision before commencement of the amended Act of 2021 shall be void.

The proposed amendments will significantly reduce the powers of the elected government, which had increased significantly after the Supreme Court verdict. By making it compulsory for the elected government to route all its files through the L-G, the amendments will essentially take away the government’s autonomy.

Arguments against the Bill

Against the Spirit of Supreme Court Judgement: The Bill seeks to declare that in the context of legislation passed by the Delhi Assembly, all references to the ‘government’ would mean the “Lieutenant Governor”.

The guiding principle behind the judgment was that the elected government should not be undermined by the unelected administrator. The Bill takes away almost all the powers of elected representatives. Thereby, the bill contradicts the 2018 judgment, which unambiguously clarifies that the council of ministers with the chief minister at its helm is the executive head of the government of Delhi.

Rollback of Representative Government: By conflating the government of Delhi with L-G, the bill blurs the distinction between the elected government and L-G. Further, by requiring L-G's opinion before the elected government can take executive action, it effectively renders the elected government powerless.

Moreover, the clause that declares void any rule that empowers the Assembly or its Committees to discuss any matter of day-to-day administration or conduct enquiries amounts to a rollback of representative government.

Centralising India's Federal Polity: Recently, the central government has taken several steps that undermine the spirit of federalism (Three Farmers' laws, Revocation of Article 370, etc.). The bill represents yet another step toward centralizing India's federal polity.

Way Forward

The apex court had rightly concluded that the scheme set out in the Constitution and the Government of National Capital Territory of Delhi Act, 1991 envisages a collaborative structure that can be worked only through constitutional trust. Evolving consensus in such matters would be consistent both with federalism as well as the high principles laid down by the Supreme Court.



INTERNATIONAL RELATIONS

Paper II (GS): All the Articles of this section are relevant to the following topics:

- India and its Neighbourhood – Relations
- Bilateral, Regional and Global Groupings and Agreements involving India and / or affecting India's Interests
- Prelims Oriented Questions and Places in News for Maps/ Matching

2.1 HEART OF ASIA-ISTANBUL PROCESS ON AFGANISTAN

Why in News: External Affairs Minister of India recently attended the 9th Ministerial Conference of Heart of Asia - Istanbul Process on Afghanistan in Dushanbe, Tajikistan.

Heart of Asia-Istanbul Process (HoA-IP)

The Heart of Asia-Istanbul Process is a regional initiative of Afghanistan and the Republic of Turkey. It was launched in 2011 in Istanbul, Turkey.

The motto was **“Istanbul Process on regional security and cooperation for a secure and stable Afghanistan”**.

Aim

The Heart of Asia – Istanbul Process aims to promote regional security, economic and political cooperation centered on Afghanistan through dialogue and confidence building measures (CBMs).

Secretariat

The Directorate General for Regional Cooperation of the Ministry of Foreign Affairs of Islamic Republic of Afghanistan is acting as the de-facto Secretariat of the Process. It is responsible for all the coordination required for the smooth functionality of the Process.

Chair

Heart of Asia Istanbul Process (HoA – IP) has two chairs, Permanent chair and a Co-chair.

Afghanistan is the permanent chair. The co-chairing shifts among the member states. Each year one-member state volunteers to co-chair the process with Afghanistan. The chair and co-chair work in close coordination and collaboration to facilitate the Heart of Asia Istanbul Process.

Decision Making Mechanisms

The Heart of Asia - Istanbul Process is comprised of four main decision making authorities:

- The Ministerial Conferences (MCs) the highest level
- The Senior Officials Meetings (SOMs)
- Ambassadorial Meetings (AMs)

- Regional Technical Groups (RTGs)

Ministerial Conferences

- Ministerial Conferences (MCs) take place annually and are platform to exchange ideas on the progress, the HOA - IP has made during the year and discuss ways to tackle challenges that still lie ahead.
- Participating and supporting parties comprise of foreign ministers and high-level officials. In MC, co-chair and host of the next MC is officially announced.
- Another important outcome of the MC is the annual declaration of the HOA – IP.
- It is developed by the senior officials prior to the MC.

Members

The Heart of Asia is comprised of:

- 15 participating countries: Afghanistan, Azerbaijan, China, India, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Saudi Arabia, Tajikistan, Turkey, Turkmenistan, UAE and Uzbekistan
- 17 supporting countries
- 12 supporting regional and international organizations

Key points from Minister's statement

Support the process

India supports a regional process convened under the aegis of the United Nations for permanent peace in Afghanistan.

Need to promote durable peace

India stressed on the need to promote durable peace in Afghanistan for shared interests of countries in the Heart of Asia region. For a durable peace in Afghanistan, every stakeholder should work towards genuine 'double peace' mechanism, which includes peace both within and around Afghanistan.

It requires harmonizing the interests of all, both within and around the country.

Commitment towards reaching a political solution For peace process to be successful, it is necessary to ensure that the negotiating parties continue to engage in good faith and with a serious commitment towards reaching a political solution.

Greater economic integration

- India has made concerted efforts for strengthening regional connectivity for the greater economic integration of Afghanistan with the region.
- India is the lead country for Trade, Commerce and Investment Confidence Building Measure under Heart of Asia - Istanbul Process.

Projects like the Chahhabar Port in Iran and the dedicated Air Freight Corridor between the cities of India and Afghanistan are part of the efforts.

Collective imperative

A stable, sovereign and peaceful Afghanistan is truly the basis for peace and progress in the region. Ensuring that it is free of terrorism, violent extremism and drug and criminal syndicates is, therefore, a collective imperative.

Conclusion

The platform's constructive role is also consistent with India's vision of achieving lasting stability and prosperity for Afghanistan. It is anchored in a regional environment that is united, stable, secure, pluralistic, democratic, and economically prosperous. The recent visit by foreign minister will further enhance India's outreach to Central Asian countries with a special focus on Afghanistan.

2.2 INDIA-BANGLADESH (PM VISIT TO BANGLADESH)

Why in News: Prime Minister Narendra Modi recently visited Bangladesh to attend the golden jubilee celebrations of Bangladesh's independence, and hold talks with Bangladesh's Prime Minister Sheikh Hasina.

Highlights of the visit

The two leaders expressed satisfaction at the excellent state of bilateral relations, based on deep historical, equality, trust and understanding, that goes beyond even a strategic partnership.

Joint celebrations of historical links

- PM Hasina expressed her gratitude for the support extended by the Government and people of India, during Bangladesh's Liberation War in 1971.
- To mark the 50th anniversary of India-Bangladesh diplomatic relations, both sides released respective commemorative postage stamps.

- It was decided to commemorate 6 December as Maitri Diwas, the day when India recognized Bangladesh in the year 1971.
- A foundation stone was laid down for the first memorial honouring martyrs from the Indian armed forces during Bangladesh's War of Independence.
- To be built at Ashuganj, this is the first memorial in Bangladesh exclusively honouring the Indian soldiers who died in the 1971 war.
- The two leaders jointly inaugurated the Bangabandhu - Bapu Digital Exhibition in Dhaka, which celebrates the life and legacy of Sheikh Mujibur Rehman and Mahatma Gandhi. This exhibition will be taken to 19 countries, including the United Nations.

5 agreements signed

During the visit, the two countries signed the following five agreements for cooperation in various areas:

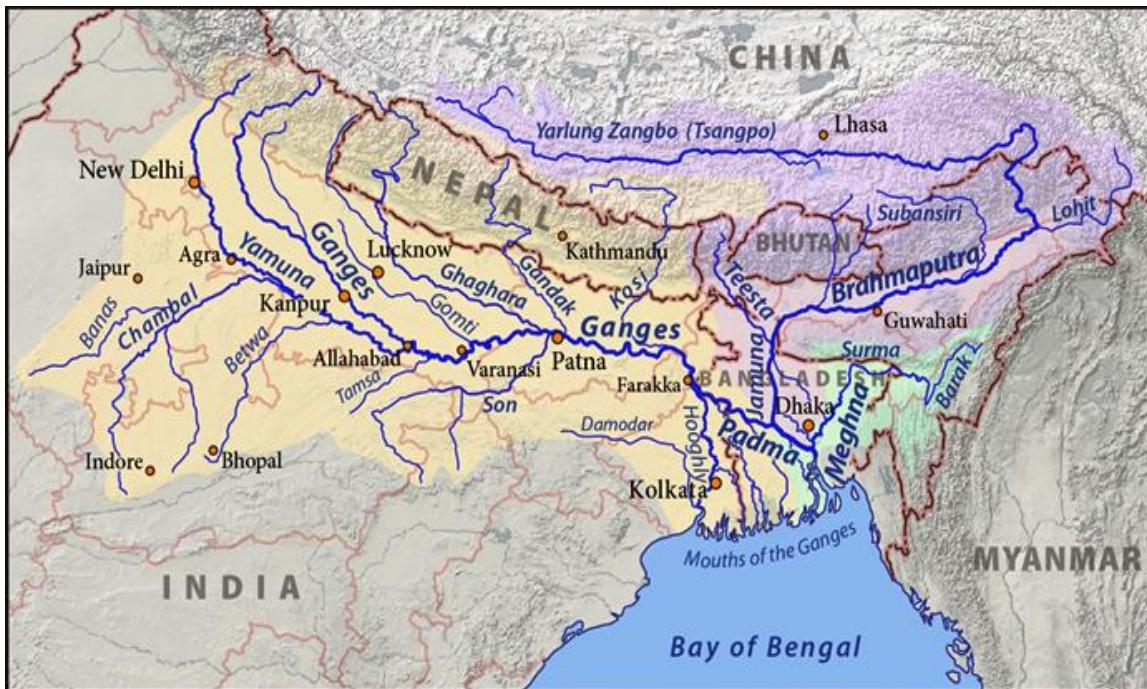
- Memorandum of Understanding (MoU) on cooperation in the field of disaster management, resilience and mitigation.
- MoU between Bangladesh National Cadet Corps (BNCC) and National Cadet Corps of India (INCC).
- MoU on establishment of a framework of cooperation in the area of trade remedial measures between Bangladesh and India.
- MoU on supply of Information and Communications Technology (ICT) equipment, courseware & reference books and training for Bangladesh-Bharat Digital Service and Employment Training (BDSET) Centre.
- MoU for establishment of sports facilities at Rajshahi College Field and Surrounding Areas.

Discussions on cooperation in various sectors

Water resources cooperation

- Bangladesh reiterated its long-pending request for concluding the interim agreement on the sharing of the waters of the Teesta River. The draft agreement has already been agreed upon by both Governments in January 2011.
- **India also requested for early finalization of the draft of the interim agreement for sharing of water of Feni River**, pending with the Bangladesh side which had been agreed upon by both sides in 2011.

- Also, requested working towards an early conclusion of the Framework of Interim Agreement on sharing of waters of six common rivers, namely, Manu, Muhuri, Khowai, Gumti, Dharla and Dudhkumar.
- Directed the Joint Technical Committee to expeditiously commence the feasibility study of the Ganges-Padma barrage for optimum utilization of the Ganges waters received by Bangladesh as per the Ganges Water Sharing Treaty, 1996.



Measures to enhance trade relations

- To enhance trade between the two countries, both the leaders underlined the need to remove non-tariff barriers. They also stressed on the need for predictability of trade policies, regulations and procedures.
- India stressed the urgent need for up-gradation of infrastructure and facilities of the **Land Customs Stations (LCSs)/Land Ports** in a coordinated manner to facilitate trade between the two countries.
- India reiterated the importance of harmonization of standards and mutual recognition of agreements and certificates for enhancing bilateral trade.
- Bangladesh Standards and Testing Institute (BSTI) and the Bureau of Indian Standards (BIS)** would collaborate for the capacity building and development of testing and Lab facilities.

- India congratulated Bangladesh on its upcoming graduation from the Least Developed Country (LDC) status.
- Emphasized on expeditious conclusion of the ongoing joint study on the prospects of entering into a Comprehensive Economic Partnership Agreement (CEPA). Bangladesh invited Indian investment in the jute mills of Bangladesh to revitalize and modernize the jute sector.

Cooperation in power and energy

Both sides expressed satisfaction at the strong cooperation in the power and energy sector, including between the private sectors. The two countries had earlier signed the Framework of Understanding on Cooperation in the Hydrocarbon Sector.

Both leaders urged the relevant authorities to quickly implement the institutional arrangement which will further enhance bilateral cooperation in this important sector.

Educational cooperation

- India announced one thousand Subarno Jayanti scholarships to Bangladeshi students for undergraduate and post-graduate program in India. India also announced the establishment of Bangabandhu Chair at the University of Delhi.
- Both leaders directed their concerned authorities for early conclusion of the MoU on Mutual Recognition of Academic Qualifications.
- Bangladesh offered to conduct short term exchange program for Indian youth in areas such as fisheries, agriculture, disaster management, SMEs and women empowerment.

Cooperation in public health

- Both PMs acknowledged the importance of deeper collaboration between the two countries in the public health sector particularly in health care services and research.
- The two sides appreciated the collaboration and active participation under different mechanisms between Indian Council of Medical Research and Bangladesh Medical Research Council. Bangladesh thanked the India for gifting 2 million doses of Covid-19 vaccines made in India.
- India also gifted 109 life-support ambulances to Bangladesh to support Bangladesh's health infrastructure.

Border management and Security cooperation Both leaders emphasized the importance of effective border management for ensuring a stable and crime free border.

- The two leaders directed the concerned border guarding forces to enhance people-oriented measures for ensuring border security and reducing death of civilians in border areas.
- Recognizing that terrorism remains a threat to global peace and security, both sides expressed their commitment to eliminate terrorism in all its forms. In this regard, they emphasised on enhancing cooperation in training and capacity building.

Discussion on Rohingyas

India appreciated Bangladesh's efforts in sheltering and providing humanitarian assistance to 1.1 million Rohingyas, forcibly displaced from the Rakhine State of Myanmar. The two sides also discussed on the importance of safe, speedy and sustainable return of Rohingyas to Myanmar for the greater security of the region.

Multilateral cooperation

Both countries agreed to continue working together for common objectives in the United Nations and other multilateral forum. They emphasized that the regional organizations, such as South Asian Association for Regional Cooperation (SAARC) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) have an important role to play, particularly in the post-Covid-19 situation.

They agreed to make BIMSTEC an even more effective instrument for inter-regional cooperation to achieve the aim of collective prosperity of all member countries.

New areas of cooperation

Both sides acknowledged the potential of new and emerging areas of cooperation in bilateral cooperation. **They directed authorities on both sides to increase cooperation in areas of science, artificial intelligence, peaceful uses of nuclear technology, big data and technology enabled services in health and education.**

To facilitate youth exchanges between the two countries, India has invited 50 young entrepreneurs from Bangladesh to visit India and present their ideas to venture capitalists.

2.3 UNHRC

Why in News: At the UN Human Rights Council (UNHRC) vote on Sri Lanka's rights record, India abstained from voting. India called on Sri Lanka to carry forward the reconciliation process and address the aspirations of the Tamil minority.

UNHRC

- The United Nations Human Rights Council (UNHRC) is an inter-governmental body within the United Nations system.
- It is responsible for strengthening the promotion and protection of human rights around the globe and for addressing situations of human rights violations and make recommendations on them.
- It was created by the United Nations General Assembly (UNGA) in 2006 by adopting the resolution 60/251 to promote human rights globally.
- Headquarters: Geneva, Switzerland
- Its resolutions are not legally binding but carry moral authority.

Membership

- The Council is made of 47 Member States
- They are elected by the majority of members of the United Nations General Assembly (UNGA) through direct and secret ballot by all 193 members of the United Nations.
- Members are elected by the UNGA for 3-year terms, with a maximum of 2 consecutive terms.
- In 2018, India was elected to the UN Human Rights Council, as a candidate from the Asia-Pacific region, for a period of three years beginning January 1, 2019.

Functions

- Members of the council are required to uphold the highest standards in the promotion and protection of human rights.
- They work to engage countries on improving human rights.
- They make decisions ranging from exposing violations to recommending that UN Security Council (UNSC) make referral to International Criminal Court (ICC).
- It can also set up special rapporteur with mandate to investigate and report human-rights violations and abuses.
- The council works closely with the Office of the High Commissioner for Human Rights (OHCHR) and engages the United Nations' special procedures.
- HRC is thus seen as an important component of the UN rights system.

Latest Update

- At the UN Human Rights Council (UNHRC), a resolution on “Promoting reconciliation, accountability and human rights in Sri Lanka” was put to vote.
- The resolution that was very critical of Sri Lanka’s failure to address human rights violations that occurred during the civil war.
- The resolution also contended the human rights situation has deteriorated under the current administration and that rights defenders and ethnic and religious minorities are facing problems.
- The 47-member UNHRC adopted the resolution after 22 countries voted in favour of the resolution.
- The resolution gives UN human rights chief the mandate to collect and preserve evidence of crimes related to Sri Lanka’s civil war that ended in 2009 with the defeat of Tamil Tiger rebels (led by LTTE).
- India, and 13 other countries including Indonesia, Japan and Nepal, abstained from voting. 11 countries, including Bangladesh, China and Pakistan, voted against the resolution.

India's stand

- India has traditionally avoided backing direct UN intervention on human rights issues because of its sensitivities related to the Kashmir issue. India said it believed the countries have the primary responsibility for protecting human rights.
- India urged the government of Sri Lanka to carry forward the process of reconciliation and address the aspirations of the Tamil community in the country.
- India asked Lanka to continue to engage constructively with the international community to ensure that the fundamental freedoms and human rights of all its citizens are fully protected.

India's approach to Lanka

India said its approach to human rights in Sri Lanka is guided by two fundamental considerations:

- Support to the Tamil minority for equality, justice, dignity and peace
- Ensuring the unity, stability and territorial integrity of the island nation

India believes these two goals are mutually supportive and Sri Lanka’s progress is best assured by simultaneously addressing both objectives. India also supports the world community’s call for Sri Lanka to fulfill its commitments on devolution of political authority to the Tamils.

2.4 INDIA-FINLAND

Why in News: Prime Minister Narendra Modi recently held a virtual summit with Finland's Prime Minister Sanna Marin.

India Finland relations

- India and Finland established diplomatic relations in 1949 and have traditionally enjoyed warm and friendly relations.
- Relations between India and Finland are based on shared values of democracy, rule of law, equality, and respect for human rights.
- In recent years, bilateral relations have acquired diversity with collaboration in research, innovation, and investments by both sides.

Highlights of the Summit

- Both leaders announced a **Digital Partnership in future ICT (Information and Communications Technology), future mobile technologies and digital education.** The two countries will focus on 6G research and development, and future education based on the digital transformation of learning.
- A High Level Dialogue in education between the Education Ministries of the two countries was announced during the summit.
- The two countries welcomed the proposal to renew the Memorandum of Understanding between a consortium of ten Finnish Universities and 23 IITs for cooperation in higher education.

Discussion on Climate Change

- The two leaders also launched a sustainability partnership involving renewable and clean energy and sustainable mobility, and said green growth is an essential element of bilateral cooperation.
- PM of India also urged Finland to join the International Solar Alliance, and Coalition for Disaster Resilient Infrastructure (CDRI) to increase international cooperation.

The Coalition for Disaster Resilient Infrastructure (CDRI) is an international coalition that aims to promote disaster-resilient infrastructure. The International Solar Alliance (ISA) is an alliance of 121 countries initiated by India. The primary objective of the alliance is to work for efficient consumption of solar energy to reduce dependence on fossil fuels.

Cooperation in multilateral forums

- The two leaders discussed cooperation at the World Trade Organisation and supported an open, inclusive and rules-based multilateral trading system. They also expressed their shared interest to bring about reforms in the United Nations.
- Both sides underlined the key role of the Arctic Council as the main forum for cooperation on Arctic matters and took note of the increasing international attention towards the Council.

Discussion on Covid-19 Vaccines

Both leaders emphasized on the urgent need to speed up the development and to scale up the manufacturing of Covid-19 vaccines and the need to promote equitable access to all countries. India shared that it has provided 59 million doses to more than 70 countries.

India –Finland Relations

Commercial relations

- The total direct trade between India and Finland reached US\$ 2.5 billion in 2019. Trade in goods was around US\$ 1 billion and trade in services was around US\$ 1.5 billion in 2019.
- Main exports from Finland to India are paper, pharmaceuticals, machinery and equipment for special industries. India's exports to Finland are correspondingly centered on pharmaceutical, chemical and textile products. Services, particularly in the area of ICT and digital solutions, also have a significant role in Indian exports to Finland.
- Within the European Union, Finland ranks 12th among countries investing in India. More than 100 Finnish companies have operations in India, including through investments.
- Local production by Finnish companies in the Indian market, are focused around telecommunications, energy, construction and heavy industry sectors and R&D activities, especially in the field of digital business solutions.
- By 2019, India's investments in Finland have crossed US\$ 1 billion. About 35 Indian companies, mainly in the software and consultancy sector are active in Finland.

Cooperation in Science & Technology (S&T)

- An agreement for cooperation in S&T was signed in 2008 for development of innovation policies, exchange of information and scientists and Research & Development (R&D) collaboration.
- Under the Agreement, a Joint S & T committee representing both sides was formed to for discussions on mutual areas of interests.

Cooperation in Information Technology and Emerging Technology

- A Joint Declaration of Intent was signed between India and Finland on cooperation in the field of digitalisation in 2019.
- The document provides for cooperation in information exchange in the field of digital development, strengthening collaboration in the fields of e-Government, smart infrastructure, e-Health and e-Education.
- It also focuses on promoting emerging technologies such as artificial intelligence, cloud computing, big data, internet of things, blockchain, etc.

Cooperation on Environmental issues

- There are successful partnerships from 2004 between Finnish Meteorological Institute (FMI), India Meteorological Department (IMD) and The Energy and Resources Institute (TERI) in air quality including capacity building.
- Recently, the Ministries of Environment of India and Finland signed a MoU for Cooperation on environment related issues in 2020.

Cultural Relations

Indian culture and yoga are very popular in Finland and Finland is very receptive to Indian culture. Cultural events are organised regularly by Indian Associations and other cultural organisations promoting Indian dance and music (both classical as well as contemporary).

Indian Community in Finland

There are around 15,000 persons of Indian origin in Finland. In recent years, Indian professionals are being employed in high-tech companies such as Nokia, Microsoft and Indian IT companies like TCS, WIPRO, L&T, Infosys and others in Finland.

Finland is emerging as a favourable destination for vocational and higher education for Indian students. Currently about 1050 Indian students are pursuing higher education in Finland.

2.5 QUAD SUMMIT

Why in News: Members of the Quadrilateral Framework or the Quad recently held a leaders' summit.

- The virtual summit was addressed by the Prime Ministers of India, Japan and Australia and the President of the United States. Until now, meetings under the Quad were held at the level of foreign ministers but this is the first ever leaders' summit under the framework.
- The Summit witnessed discussions on a range of issues such as Covid vaccine supply, Indo-Pacific security challenges, climate change and emerging technologies.

Highlights of the summit

- All the leaders pledged to promote a free, open rules-based order, to improve security and prosperity and deal with threats in the Indo-Pacific and beyond.
- The leaders also expressed their support for freedom of navigation, peaceful resolution of disputes, democratic values, and territorial integrity.
- The Quad renewed its commitment to ensure that the Indo-Pacific region is governed by international law, committed to upholding universal values, and is free from coercion (force/aggression).
- The Quad also explored the possibility of cooperating with some countries in Europe like France, Germany and Netherlands which had declared Indo-Pacific policies of their own. However, at present, there are no plans on expanding the Quad.
- Three expert level working groups on vaccines, critical and emerging technologies and climate change were formed at the Summit.

Groups and Initiatives

Quad vaccine initiative

- A Quad vaccine initiative was announced at the summit, that will use the strengths of all four countries to produce a billion doses of Covid vaccines.
- The leaders shared that the four countries will collaborate to expand safe, affordable, and effective vaccine production and equitable access to accelerate economic recovery and benefit global health.
- In this initiative India will manufacture American vaccines with Japanese funding and Australian logistical support for countries in the Indo-Pacific region.
- The initiative will expand India's own vaccine manufacturing capabilities; so that India's domestic demands are not affected.
- A Quad vaccine experts group was also launched to support this initiative.

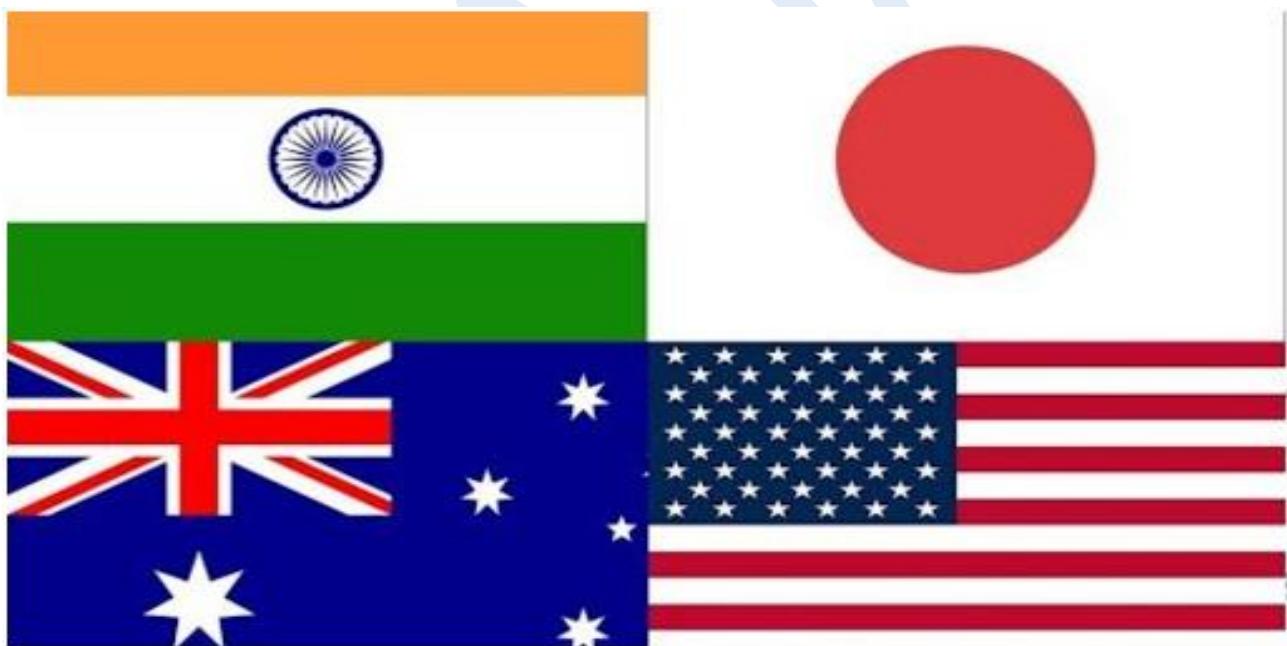
Quad Climate Working Group

- The Quad Climate Working Group will be focused on cooperation, within the Quad and with other countries, to strengthen implementation of the Paris Agreement.
- It will support, strengthen, and enhance actions globally, by increasing low-emissions technology solutions to support emissions reduction.
- It will also focus on cooperation on climate mitigation, adaptation, technology, capacity-building, and climate finance.

Quad Critical and Emerging Technology Working Group

- The Quad leaders recognised that a free, open and inclusive Indo-Pacific requires that critical and emerging technology is governed and operates according to shared interests and values.
- To address this, the Critical and Emerging Technology Working Group, will develop principles on technology design, development, and use.
- It will also facilitate coordination on technology standards development.

QUAD



The Quad is a four-nation alliance of India, Australia, US and Japan. The Quad is widely viewed as a response to increased Chinese economic and military power. Moreover, there were growing concerns regarding freedom of trade and navigation in the South and East China seas. The grouping has its aim is to promote freedom, liberty and democracy.

Evolution of Quad

The Quad was initiated in 2007 by Prime Minister Shinzo Abe of Japan. Later, the grouping ceased to exist following the withdrawal of Australia over the growing tension between the United States and China in the Asia-Pacific.

However, during the 2017 ASEAN Summits all four former members rejoined in negotiations to revive the quadrilateral alliance. The Quad was earlier known as the quadrilateral security dialogue but it is now known as the quadrilateral framework to indicate it has gone beyond a narrow security dialogue.

Significance of Quad

- The grouping underlines the rising significance of maritime geopolitics in an increasingly integrated world.
- It aims to push for broad economic development by utilising the full potential of the Indo-Pacific and promoting connectivity.
- It can also lead to development of infrastructure based on principles of transparency and openness, while avoiding unsustainable debt burdens.
- It can also help to uphold respect for international law and promote a rules-based order in the Indo-Pacific.

2.6 INDIA-SWEDEN

Why in News: Prime Minister Narendra Modi recently had an interaction with Sweden's Prime Minister Stefan Lofven in a virtual summit, during which the two leaders discussed bilateral ties. This was the fifth interaction between the two leaders since 2015.

Highlights of the summit

PM Modi said that shared values such as democracy, human rights, rule of law, equality, freedom and justice strengthen the relations and mutual cooperation between India and Sweden.

He further underlined that the two countries can take this relationship further in innovation, technology, investment, start-ups and research. He invited Swedish companies to invest in India, in order to strengthen this partnership in several sectors, including smart cities, e-mobility, smart grids and waste management.

Addressing Climate Change

PM Modi said that the important issue of climate change is a priority for both countries and the two countries can work together on it.

India's culture has always stressed on the importance of living in harmony with nature. Based on this, India is moving ahead on its commitments made under the Paris Agreement. He added that India was among the only countries in G20 which has stood by its commitments. India's renewable power capability has increased by 162% in the last five years.

Covid-19 support

The Indian PM shared that India provided medicines and other essential items to more than 150 countries in their fight against the COVID-19 pandemic. Moreover, till now, India has delivered Made-in-India vaccines to nearly 50 countries and will share vaccines with more countries in the near future.

India Sweden relations

- Diplomatic ties between India and Sweden were established in 1948 and steadily strengthened over the decades.
- India and Sweden have friendly relations based on shared values of democracy, freedom, pluralism and rules-based international order.
- Both countries have very close cooperation in the areas of trade and investment, innovation, science and technology as well as research and development.

Bilateral Institutional Cooperation Mechanisms

- The leading institutional mechanism of inter-Governmental dialogue between India and Sweden is the Indo-Swedish Joint Commission for Economic, Industrial and Scientific Cooperation.
- A range of MoUs and bilateral agreements exist covering sectors including science & technology, healthcare, sustainable urban development, renewable energy, railways, space, polar science, and defence.

Multilateral engagement

- Both countries have cooperated, on common causes such as de-colonisation, promoting development partnerships, environment, UN Peacekeeping and UN Peace building.
- In the 1980s India and Sweden worked together on nuclear disarmament issues within the framework of the 'Six Nation Peace Summit' (that also included Argentina, Greece, Mexico and Tanzania).

- At the UN General Assembly, India and Sweden present an annual Joint Statement on Humanitarian Affairs. In 2013 during the Swedish Presidency, India joined the Arctic Council as an Observer
- India and Sweden jointly launched the Leadership Group on Industry Transition (Lead IT) in association with World Economic Forum (WEF) at the UN Climate Action Summit in September 2019.

Commercial relations

- India is Sweden's 19th largest export market and third largest trade partner after China and Japan in Asia.
- Trade in goods and services has increased from USD 3 billion (2016) to USD 4.5 billion (2019).
- The main Swedish exports to India are communication equipment, motor vehicles, paper & pulp products, pharmaceuticals, chemicals and engineering products.
- The main items of Indian exports are garments, textiles, chemical products, food products, and semi manufactured and manufactured goods.
- Swedish companies are among the leading global players in several fields and are present in India in sectors including IT, automobiles, electrical engineering, pharmaceuticals, retail, defence etc.
- The number of Swedish companies with business presence in India has increased from around 150 to around 250 in the last five years.
- There is a growing Indian business presence in Sweden, especially in IT sector. The number of Indian companies with business presence in Sweden has increased from around 50 to 75 over a similar period.

Cultural and Educational Relations

- There are a number of Indian Cultural Associations in Sweden, as Indian music, dance, art, literature, films and cuisine are widely appreciated in Sweden. There are ongoing research links between academic institutions and universities between India and Sweden
- Several Swedish universities have been regularly sending students to India for different program

Indian Community in Sweden: The Indian community in Sweden is estimated to be over 50,000.

Most of them are skilled professionals in IT companies, professors, research scholars in universities and other institutes.

2.7 INDIA-US DEFENCE TALK

Why in News: US Defence Secretary Lloyd J Austin recently met India's Minister of Defence on his visit to India.

Highlights of the meeting

- The talks focused on further expansion of bilateral strategic ties, evolving situation in the Indo-Pacific region and challenges of terrorism.
- The two sides discussed opportunities to elevate the US-India Major Defence Partnership through regional security cooperation, military-to-military interactions, and defence trade.
- India was designated as a 'Major Defence Partner' by the United States in 2016.
- India's Defence Minister invited the US defence industry to take advantage of India's liberalised FDI policies in the defence sector.
- The two leaders reviewed many bilateral and multilateral exercises and agreed for increased cooperation between the Indian military, the US Central Command in Florida and with the US Commands in the Indo-Pacific region and Africa.
- In addition, the two countries will continue to advance new areas of collaboration, including information-sharing, logistics cooperation, artificial intelligence and cooperation in new domains such as space and cyber.

Discussions on defence pacts

- The two sides also agreed to realise the full potential of LEMOA, COMCASA & BECA agreements. These three pacts together form the foundation of defence cooperation between India and the US.
- The LEMOA (Logistics Exchange Memorandum of Agreement), signed in 2016, allows the militaries of both nations to use each other's bases for repair and replenishment (restoration) of supplies.
- The COMCASA (Communications Compatibility and Security Agreement), signed in 2018 allows 'interoperability' between the two militaries through the transfer of communication security equipment from the US to India.
- The BECA (Basic Exchange and Cooperation Agreement), signed in 2020, is related to geo-spatial cooperation, which includes sharing classified information on maps and satellites for defence purposes.

India US relations

- India-US bilateral relations cover the major pillars of strategic partnership, including security, energy and technology.
- Over the years, the relationship has deepened with greater bilateral economic engagement and increasing people-to-people contacts.
- In the last few years, the bilateral relationship also expanded into a global partnership with sharing of views on issues such as international terrorism and a rules-based order in the Indo-Pacific region.

Defence Cooperation

- India-US defence cooperation is based on New Framework for India-US Defence Cooperation, which was renewed for a period of ten years in 2015.
- In order to increase the pace and quality of defence cooperation, the Defence Technology and Trade Initiative [DTTI] was also launched in 2012.
- Bilateral dialogue mechanisms in the field of defence include Defence Policy Group (DPG), Defence Joint Working Group (DJWG), Defence Procurement and Production Group (DPPG) and Military Cooperation Group (MCG) among others.

Defence Trade

- Defence procurements from the US have been an area of significant growth in the last decade.
- India already has several US military platforms and equipments and many such proposals for new acquisitions are under processing.
- The defence procurement activities are monitored through the Defence Production and Procurement Group (DPPG).

Military to Military cooperation

- The two countries now conduct more bilateral exercises with each other than they do with any other country.
- Bilateral exercises held annually include Malabar (between the two Navies and also include Japan), Cope-India (Air Force), YudhAbhyas (Army) and Vajra Prahar (Special Forces).
- India also participates in annual RIMPAC exercises as well as in Red Flag exercises which are US led multinational exercises.

Counter Terrorism Cooperation

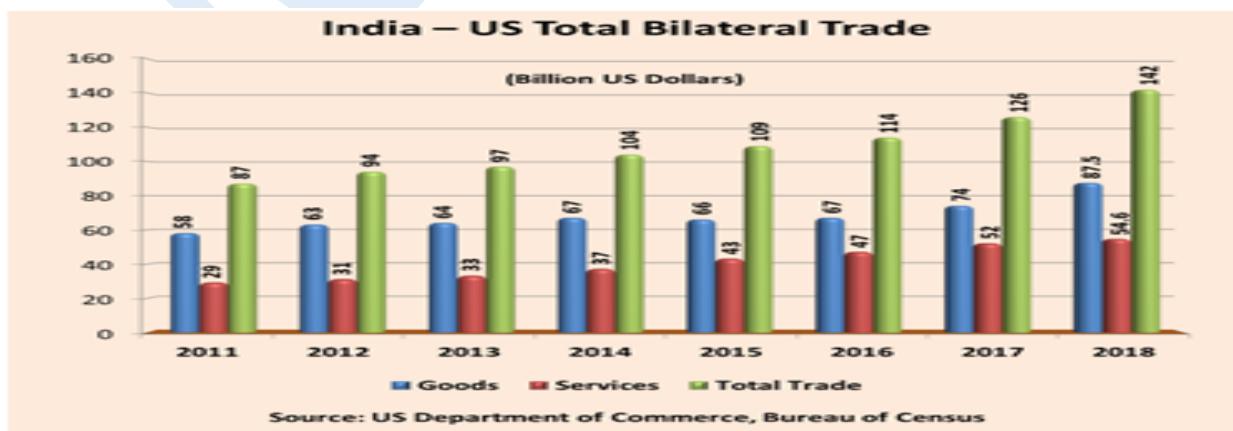
- India-U.S. counter-terrorism cooperation is carried out through the India-U.S. Joint Working Group on Counter-Terrorism.
- Cooperation in counter-terrorism has seen considerable progress with intelligence sharing, information exchange, operational cooperation and sharing of counter-terrorism technology and equipment.

Trilateral Dialogue and QUAD

- Cooperation on Indo-Pacific issues is carried out in the trilateral format between India, USA and Japan and in the QUAD, where Australia is also a member.
- Sharing views on security threats from maritime challenges to counter terrorism and non-proliferation are part of these dialogues.
- More recently, a new area of cooperation on infrastructure and connectivity has been added to the trilateral mechanism.

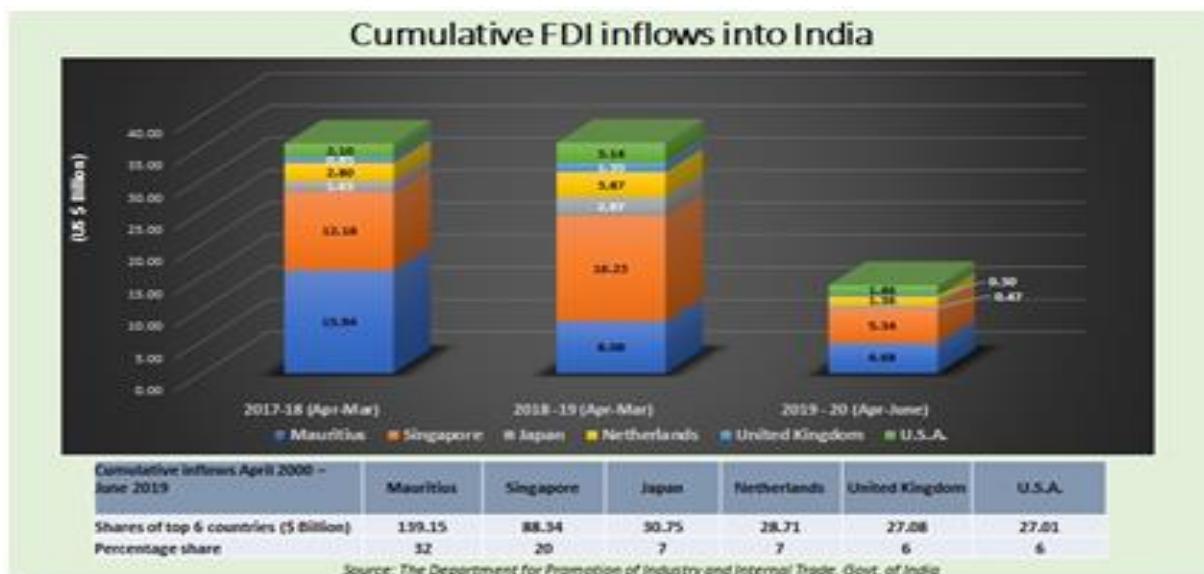
Bilateral Trade Relations

- Rapidly expanding trade and commercial linkages between India and U.S. form an important component of the partnership between the two countries.
- US is India's largest trading partner in goods and services. The overall India-US bilateral trade in goods and services has increased from US\$126 billion in 2017 to US \$146.1 billion in 2019.
- The top exports of goods from India in 2019 were precious metal and stone (diamonds) pharmaceuticals, machinery, mineral fuels and organic chemicals.
- Top services exports from India to the U.S. was in the telecommunications, computer, and information services, professional and management services, and research and development sectors.



Investment data

- Total FDI from US to India till the year 2019 amounted to \$45.9 billion.
- USA is one of the top 5 investment destinations for FDI from India. A survey done by CII in November 2017 found that 100 Indian companies have invested \$ 17.9 billion in the United States creating 113,000 jobs in the US.



People-to-People Contact

- The 3-million strong Indian American community is an important ethnic group in the U.S., accounting for about 1% of the total population in the country. It is the 3rd largest Asian ethnic group in the US after the Chinese and the Filipinos.
- Almost 40% of all Indians in the United States have a master's, doctorate or other professional degree, which is about five times the national average.
- The Indian American community with its large number of professionals, business entrepreneurs and educationalists, has a significant influence on the American society and polity.

SECURITY AND DEFENCE

❖ **Paper III:** This section is relevant to the following topics:

- Linkages between development and spread of extremism.
- Role of external state and non-state actors in creating challenges to internal security.
- Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention
- Security challenges and their management in border areas; linkages of organized crime with terrorism
- Various Security forces and agencies and their mandate

❖ **Prelims Oriented Questions**

3.1 MALWARE, CYBERATTACK AND CERT-IN

Why in News: Recently, a US-based cyber security company published a report that highlighted an increase in malware attacks by a Chinese group called 'Red Echo' to target India's power sector.

Malware

Malware is the collective name for a number of malicious software variants, including viruses, worms, ransom ware and spyware. It is a software designed to cause damage to a computer, server, or computer network.

Details of the cyber attacks by Red Echo on India's power sector

- Red Echo used malware called **ShadowPad**, which involves the use of a backdoor entry to access servers.
- As per the report, 10 distinct Indian power sector organisations were targeted, including four Regional Load Dispatch Centers (RLDCs) that are responsible for the smooth operation of the country's power grid by balancing the supply and demand of electricity.
- India's cyber security agency CERT-In (Indian Computer Emergency response Team) had also detected the Shadow Pad malware at several load dispatch centers.
- The Ministry of Power has also confirmed these attempted attacks on India's power infrastructure. However, the ministry claimed that no data breach/data loss had been detected due to the attacks.

Protective measures taken

After the attacks, IT groups with the power grid operators activated additional safety protocols. A closer watch was maintained on firewalls at all control centers. Additionally, all systems in control centers were scanned and cleaned by antivirus.

Cyber threats to power infrastructure

With the fast pace of technological change, cyber attacks are growing across the world in different domains, including the power sector.

Cyber attacks on power grids are very useful in cyber warfare between countries. Modern societies run on electricity and if it can't be delivered to the customer, the scale of the consequences can be extremely large.

Heating systems, law enforcement, hospitals, etc. depend on power and when it is cut off, it can severely impact millions of people and hundreds of businesses. Furthermore, the vulnerability of smart power grids makes it easier to hack the power grids.

Thus, the destructive potential and importance of power generation and delivery systems to any state make cyber attacks on power infrastructure an important cyber warfare tactic.

CERT-In

- The Indian Computer Emergency Response Team (CERT-In) is an office within the Ministry of Electronics and Information Technology.
- It is the nodal agency to deal with cyber security in India and strengthen security-related defence of the Indian internet domain.

Functions of CERT-In

- Collection, analysis and sharing of information on cyber incidents.
- Forecast and alerts of cyber security incidents.
- Emergency measures for handling cyber security incidents.
- Coordination of cyber incident response activities.
- Issue guidelines, advisories, related to information security practices, procedures, prevention, response and reporting of cyber incidents.

MoUs with countries to enhance cyber Security

- CERT-In has signed MoUs with several countries to promote closer cooperation for exchange of knowledge and experience in detection, resolution and prevention of cyber security-related incidents.
- The MoUs also help in capacity building and strengthening the cyber space of countries involved.

3.2 INS KARANJ

Why in News: Indian Navy's third stealth Kalvari class submarine INS Karanj has been commissioned.

Submarines

Submarines are classified based on how they are powered. Usually, there are two types:

Diesel-Electric submarines

- These are conventional submarines that are powered by a combination of diesel engines and electric motor. Examples include INS Sindhughosh and INS Sindhuratna.

Nuclear powered submarines

These are powered by a nuclear reactor. Being completely independent of need for air, these submarine need not come to the surface frequently, as is necessary for conventional submarines. They are also much bigger.

India currently has two such submarines - INS Arihant (built in India) and INS Chakra (leased from Russia).

Indigenization of Submarine Production

- Ever since the submarine arm was commissioned in 1967, Indian Navy is striving for modernization and indigenization of these underwater vehicles.
- To this effect in 1999, India approved a 30-year submarine building plan for production of submarines indigenously.
- Under this plan, Project-75 and a follow on Project-75 I (India) were conceived.

Project 75

- Under P-75, six Scorpene Diesel Electric submarines (note below about these subs) are being built by Mazgaon Docks Limited (MDL) with technology transfer from France.
- The design of Kalvari class of submarines is based on Scorpene class of submarines designed and developed by French defence major Naval Group formerly DCNS and partners.
- Earlier, under Project 75, INS Kalvari in 2017 and INS Kandheri in 2019 have been being commissioned.

Project 75-I

Under Project 75- I, India will build 6 advanced conventional stealth submarines under the SP model. The advanced diesel-electric submarines under will have both land-attack cruise missiles and air-independent propulsion.

They have air-independent propulsion (AIP) system, and thus increase their operational range. The submarines will have a vertical launch system (VLS) which will enable them to carry multiple Brahmos supersonic cruise missiles. This means that it will be fully capable of launching anti-surface and anti-ship warfare missions.

Scorpene submarines

- Scorpene submarines are advanced diesel-electric submarines, designed and developed by French defence major Naval Group formerly DCNS.
- These submarines are around 220 feet long and have a height of 40 feet. They are one of the most advanced conventional submarines in the world.
- The modern variants of the Scorpene class of submarines have Air Independent Propulsion System (AIP) technology.
- Conventional diesel-electric submarines have to surface every few days to get oxygen, but with AIP systems, they can stay submerged for much longer periods.

Features

- These are primarily attack submarines or 'hunter-killer' type which means they are designed to target and sink adversary naval vessels.
- The state-of-art features of the Scorpene include superior stealth and the ability to use precision guided weapons.
- The attack can be launched with torpedoes, as well as tube launched anti-ship missiles, whilst underwater or on surface.
- It can undertake many types of missions typically undertaken by any modern submarine i.e Anti-Surface warfare, Anti-Submarine warfare, Intelligence gathering, Mine Laying etc.

"Class" of Navy vessels

- In maritime parlance, a class of ships (like submarines, corvettes etc.) is a group of vessels which have the same make, purpose and displacement.
- In the Navy and Coast Guard in India, the ships belonging to a particular class are named in a specific manner.
- The class is generally named after the first vessel in the category. For instance, the first submarine under Project-75 is INS Kalvari, and all the 6 vessels being built under the project are referred to as "Kalvari-class".
- In some cases, a particular class of vessel take their names from an earlier class of vessels which are now decommissioned.

News Update

Indian Navy's third Kalvari-class Diesel Electric attack submarine INS Karanj has been commissioned at the Naval Dock in Mumbai. INS Karanj would form part of the Western Naval Command's Submarine fleet.

Status of other Project 75 submarines

- Project-75 is for a total of 6 Scorpene Class or Kalvari Class submarines.
- Kalvari and Khanderi have been commissioned in 2017 and 2019.
- Vela is undergoing sea trials.
- Vagir was launched in November, 2020.
- Vagsheer is under construction.

3.3 SIPRI REPORT

Why in News: The Stockholm International Peace Research Institute (SIPRI) recently released a report on international arms transfers.

Highlights of the report

- For the first time since 2001–2005, the volume of deliveries of major arms between countries did not increase between 2011–15 and 2016–20. However, international arms transfers remain close to the highest level since the end of the cold war.
- The United States remains the largest arms exporter, increasing its global share of arms exports from 32 to 37 per cent between 2011–15 and 2016–20.
- Almost half (47 per cent) of US arms transfers went to the Middle East, and Saudi Arabia alone accounted for 24 per cent of total US arms exports.
- Russia, France, Germany and China formed the top five list of arms exporters, in descending order.

Decline in Russian and Chinese exports

- Russia and China both saw a decline in their arms exports. Arms exports by Russia, which accounted for 20 per cent of all exports of major arms in 2016–20, dropped by 22 per cent (to roughly the same level as in 2006–10).
- The bulk (around 90 per cent) of the decrease in Russia's exports was due to a 53 per cent fall in its arms exports to India.
- Chinese arms exports accounted for 5.2 per cent of total arms exports in 2016–20. Pakistan, Bangladesh and Algeria were the largest recipients of Chinese arms.

Arms Import statistics

- Asia and Oceania was the largest importing region for major arms, receiving 42 per cent of global arms transfers in 2016–20. India, Australia, China, South Korea and Pakistan were the biggest importers in the region.
- For many states in Asia and Oceania, a growing perception of China as a threat is the main reason for an increase in arms imports.
- The biggest growth in arms imports was seen in the Middle East. Middle Eastern states imported 25 per cent more major arms in 2016–20 than they did in 2011–15.
- Saudi Arabia—the world's largest arms importer—increased its arms imports by 61 per cent. Egypt and Qatar, which saw a jump of 136 per cent and 361 per cent, respectively.

India's arms import status

- Arms imports by India decreased by 33 per cent between 2011–15 and 2016–20. Russia was the most affected supplier, although India's imports of US arms also fell, by 46 per cent.
- Drop in Indian arms imports seems to have been the result of the country's complex procurement processes combined with an attempt to reduce its dependence on Russian arms.
- India's top three arms suppliers during 2016-20 were Russia (accounting for 49% of India's imports), France (18%) and Israel (13%).
- India is planning large-scale arms imports in the coming years from several suppliers. India has allocated ₹70,221 crore - 63% of the military's capital budget for 2021-22 - for buying locally produced weapons and systems to boost defence indigenisation. However, as per the report, India's military imports are likely to grow over the next five years, as it has planned for a number of large-scale arms imports through several suppliers.

India's arms export status

- India accounted for 2% of the share of global arms exports during 2016-20, making the country the world's 24th largest exporter of major arms.
- This represents an increase of 228% over India's export share of 0.1% during the previous five-year period - 2011-15.
- Myanmar, Sri Lanka and Mauritius were the top recipients of Indian military hardware.

SIPRI

- SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.
- Established in 1966, SIPRI provides data, analysis and recommendations, to policymakers, researchers and media.

ECONOMY

- ❖ **Paper III:** The articles in this section are relevant to the following topics:
 - Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.
 - Inclusive growth and issues arising from it.
 - Government Budgeting.
 - Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.
 - Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
 - Investment models.
 - Agriculture

4.1 INLAND WATERWAYS

Why in News: The Indian Prime Minister said that the government aims to operationalise 23 waterways by 2030.

Inland Waterways

Inland Waterway Resources of India

Navigable Length

- India has an extensive network of inland waterways in the form of rivers, canals, backwaters and creeks.
- Of the total navigable length of 20236 km, 17980 km of the river and 2256 km of canals can be used by mechanized crafts.

Underutilized Resource

- Freight transportation by waterways is highly under-utilized in the country as compared to countries and regions like the United States, China and the European Union.
- The share of inland waterways in freight traffic is about 2-3 per cent levels (coastal shipping accounts for a similar proportion). Thus, waterways currently contribute around six per cent to India's transportation modal mix.
- In China, 47 per cent of its domestic freight traffic moves by water, while in the US it is 12 per cent.

Push by Central Government

- The Central government has been trying to make concerted efforts to make national waterways of India the lifeline of the country.
- Not only will these serve the transportation obligations of our nation, but also will serve as recreational centers.

Significance of Inland Waterways

- Inland waterways are fuel efficient, cost effective and environment friendly mode of transport.
- It is energy efficient and has a lower carbon footprint vis-à-vis road and even rail transport.

- A World Bank study points out that a litre of fuel can move 105 tonne-km by inland water transport, against 85 tonne-km by rail and 24 tonne-km by road. Likewise, the carbon emission per tonne km is 32-36 gms in the case of container vessels, against 51-91 gms in the case of road transport vehicles.
- It is cost effective mode of transport. For example, the cost of transporting coal via coastal shipping is one-sixth of the cost of transporting it by railways. Reduced congestion on roads and fewer accidents are an added advantage.
- Therefore, the optimised model mix using inland waterways and coastal shipping will not only reduce logistics cost but also cut down emissions and reduce energy and fuel consumption.

Inland Waterways Authority of India (IWAI)

The Inland Waterways Authority of India (IWAI) came into existence in 1986 for development and regulation of inland waterways for shipping and navigation. The Authority primarily undertakes projects for development and maintenance of IWT infrastructure on national waterways through grant received from Ministry of Shipping.

Original National Waterways of India

Before 2016 Act, five waterways were declared the National Waterways, each backed by a separate law. These include:

- **National Waterway 1:** The Ganga - Bhagirathi - Hooghly river system between Haldia (Sagar) & Allahabad (1620 km) was declared as National Waterway No.1 (NW-1) in 1986.
- **National Waterway 2:** The river Brahmaputra having a length of 891 Km between Bangladesh Border and Sadiya was declared as National Waterway no. 2 (NW-2) in 1988.
- **National Waterway 3:** This includes Kottapuram to Kollam stretch of the West Coast Canal, Champakara Canal and Udyogmandal Canal.
- **National Waterway 4:** It includes the Kakinada-Puducherry stretch of Canals integrated Bhadrachalam - Rajahmundry stretch of River Godavari and Wazira Vijayawada stretch of River Krishna.
- **National Waterway 5:** It comprises of the Talcher- Dhamra stretch of river Brahmani, Geonkhali- Charbatia stretch of East Coast Canal, Charbatia- Dhamra stretch of Matai river and Mangalgadi-Paradip stretch of Mahanadi delta rivers.

Note: Efforts to declare Barak River in Assam as NW6 did not succeed till a 2016 law was passed.

National Waterways Act, 2016

- Before 2016, the shipping ministry required a new law for declaration of any National Waterway. No work, including feasibility study, could be carried out without it.
- To overcome this, the Ministry of Shipping had directed Inland Waterways Authority of India (IWAI) to identify the viable waterways in India for their phased development.
- Accordingly, 106 new waterways (rivers and canals combined) were identified by IWAI and intimated to MoS.
- In this regard, National Waterways Act, 2016 was enacted by the government to give national waterway (NW) status to another 106 in one go taking the total number to 111.
- The Act merged then 5 existing Acts which have declared the 5 National Waterways (NW1 to NW5).

News Summary

Till 2016, only 5 National Waterways were notified and cargo movement is operational to some extent on these waterways.

In 2020, the report of IWAI noted that only 18 national waterways are feasible for cargo movement and 25 others are feasible for ferry and cruise for tourism purpose, out of the 106 new national waterways notified in 2016. Now, the Prime Minister, while inaugurating the 'Maritime India Summit 2021', said that the government aims to operationalise 23 waterways by 2030.

4.2 STAND UP INDIA

Why in News: The Department of Financial Services has recently informed that 'Stand Up India Scheme' has been extended up to the year 2025.

News Update

- Government has reduced margin money requirement for loans under this from 'up to 25%' to 'up to 15%'. However, the borrower will continue to contribute at least 10% of the project cost as own contribution.
- The activities allied to agriculture (e.g. pisciculture, beekeeping, poultry, livestock, rearing, grading, sorting, diary fishery, food & agro processing, etc. and services supporting these, have also been included in the Scheme. This will not include crop loans, land improvement such as canals, irrigation and wells.

Stand Up India Scheme

- The scheme was launched in 2016 to promote entrepreneurship at grass root level for economic empowerment and job creation.
- This scheme seeks to leverage the institutional credit structure to reach out to the underserved sector of people such as Scheduled Caste, Scheduled Tribe and Women Entrepreneurs so as to enable them to participate in the economic growth of nation.
- It is anchored by Department of Financial Services (DFS), Ministry of Finance, Government of India.

Objective

- It facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch.
- This enterprise may be in manufacturing, services, agri-allied activities or the trading sector.

Eligibility

SC/ST and/or woman entrepreneurs, above 18 years of age.

- Loans under the scheme are available for only green field project.
- In this context, Green field signifies the first time venture of the beneficiary in the manufacturing, services, agri-allied activities or trading sector.
- In case of non-individual enterprises, 51% of the shareholding and controlling stake should be held by either SC/ST and/or Women Entrepreneur.
- Borrower should not be in default to any bank/financial institution.

Broad features of the scheme

- Government does not allocate funds for loans under the Stand Up India Scheme. However, Rs. 100 crore has been released by Government in FY 2020-21 towards the corpus of the Credit Guarantee Fund for Stand Up India (CGFSI).
- Loans under the Scheme are extended by Scheduled Commercial Bank (SCB) as per commercial parameters; Board approved policies of respective banks and extant RBI guidelines.
- RuPay debit Card is issued for drawl of working capital.
- The rate of interest would be lowest applicable rate of the bank for that category (rating category) not to exceed (base rate (MCLR) + 3%+ tenor premium). The loan is repayable in 7 years with a maximum moratorium period of 18 months.

- This scheme is led by Small Industries Development Bank of India (SIDBI) with involvement of Dalit Indian Chamber of Commerce and Industry and various sector specific institutions all over the country.
- The offices of SIDBI and National Bank for Agriculture and Rural Development (NABARD) are designated as Stand Up Connect Centers.

The Government has taken various steps towards effective implementation of the Scheme. Provision for submission for online applications by potential borrowers through www.standupmitra.in portal

4.3 KISAN RAIL AND OPERATION GREEN

Why in News: Principal farm products from the Northeast will continue to remain outside the purview of Kisan Rail.

News Update

- The Ministry of Food Processing and Industries (MoFPI) has refused to give assent to the Railways proposal last month to include seven major items:-tea leaves, bamboo, rubber, betel nut, black pepper, mustard and soyabean under “Operation Greens-TOP to Total”.
- The reason cited for this refusal was that these seven items are neither fruits nor vegetables. Non-food items like bamboo and rubber are outside its purview.
- Only turmeric and mandarin (a citrus fruit) from the list of proposed items by railways have been included in the subsidy scheme.
- Even the Northeast Frontier Railway had requested that products like bamboo be included as an agriculture produce to be transported through the Kisan Rail scheme, but to no avail.

Kisan Rail

- Indian Railways has started running Kisan Rail train services to transport perishables and agri-product, including milk, meat and fish.
- This is multi-commodity, multi-consignor/consignee, multi-loading/unloading transportation product which is aimed at providing wider market to farmers.
- So far 80,000 tones of fruits and vegetables have been transported from various parts of the country to bigger markets.
- It ensures faster transportation of agro products for benefit of both the farmers and the consumers.

Objective

The primary objective of running Kisan Rail trains is to increase the income in farm sector by connecting production centers to markets and consumption centers.

Routes covered

- The first Kisan Rail train was flagged-off on 07.08.2020 between Devlali (Mah) and Danapur (Bihar).
- These Kisan Rail trains are run on time-tabled paths, and their punctuality is strictly monitored to avoid any en-route detentions and delays.
- These services have been introduced on 18 (eighteen) routes so far.
- Utilization of these services is being monitored on a regular basis to ensure optimal utilization of Railway stock (Parcel Vans).

Primary commodities

Primary commodities being transported via Kisan Rail are:

- Onion,
- Tomato,
- Oranges,
- Potato,
- Pomegranate,
- Banana,
- Custard-apple,
- Carrots,
- Capsicum, and
- Other vegetables.

Operation Greens (TOP to Total)

- Expanded form of this scheme is 'Operation Greens Scheme from Tomato, Onion and Potato (TOP) to all fruits & vegetables (TOTAL)'.
- This scheme is effective till 31.03.2021.
- The scheme provides 50% subsidy on transport and storage of notified fruits and vegetables if prices of such fruits or vegetables are below the trigger price.
- Railways charge only 50% of freight charges on the notified fruits and vegetables.
- Earlier subsidy under this scheme was extended for Kisan rails.
- Ministry has now extended the 50% subsidy:
 - for transportation of any fruits and vegetables and

- Through any type of train service provided by Indian Railways.

Subsidy for Air Transportation

- 50% transportation subsidy is also available for air transportation for 41 notified fruits and vegetables from North-Eastern and Himalayan States to any place in India.
- Airlines will provide the transport subsidy directly to the supplier/consignor/consignee/agent by way of charging only 50% of the actual contracted freight charges.
- Airlines will claim the balance 50% from MoFPI as subsidy.

Eligible airports

In North East, all airports from following states are eligible:

- Arunachal Pradesh,
- Assam,
- Manipur,
- Meghalaya,
- Mizoram,
- Nagaland,
- Sikkim (Bagdogra), and

Among Himalayan States, all airports from following places are eligible:

- Himachal Pradesh,
- Uttarakhand, and
- Union Territories of Jammu & Kashmir and Ladakh.

Objective

The objective of intervention is to protect the growers of fruits and vegetables from making distress sale and reduce the post -harvest losses.

Eligible Crops

- Fruits (21)-Mango, Banana, Guava, Kiwi, Litchi, Mousambi, Orange, Kinnow, Lime, Lemon, Papaya, Pineapple, Pomegranate, Jackfruit, Apple, Almond, Aonla, Passion fruit, Pear, Sweet Potato, Chikoo;
- Vegetables (20)- French beans, Bitter Gourd, Brinjal, Capsicum, Carrot, Cauliflower, Chillies (Green), Okra, Cucumber, Peas, Garlic, Onion, Potato, Tomato, Large Cardamom, Pumpkin, Ginger, Cabbage, Squash and Turmeric (dry)

- Any other fruit/vegetable can be added in future on the basis of recommendation by Ministry of Agriculture or State Government.

4.4 VEHICLE SCRAPPING POLICY

Why in News: The Ministry of Road Transport and Highways (MoRTH) has introduced the Voluntary Vehicle-Fleet Modernization Program (VVMP), also known as the “Vehicle Scrapping Policy”. The policy is aimed at creating an ecosystem to phase out old and unfit vehicles.

Reasons for introducing the policy

- According to MoRTH, India has 51 lakh Light Motor Vehicles that are more than 20 years old and 34 lakh vehicles over 15 years old.
- Moreover, there are around 17 lakh Medium and Heavy Commercial Vehicles that are older than 15 years and without valid fitness certificates.
- These vehicles are estimated to cause 10-12 times more pollution than the latest vehicles.
- Currently, Delhi is the only city where diesel vehicles older than 10 years and petrol vehicles older than 15 years get automatically deregistered.
- However, people are unable to scrap them since there are not enough authorised scrapping centers.

Vehicle Scrapping Policy

- The policy aims to de-register unfit vehicles and scrap them by terming them as “end of life” vehicles.
- Commercial vehicles will be de-registered after 15 years in case of failure to get the fitness certificate.
- Private Vehicles will be de-registered after 20 years if found unfit or in case of a failure to renew registration certificate.
- Moreover, all vehicles of the Central Government, State Government, Municipal Corporation, Panchayats, Public Sector Undertakings will be compulsorily de-registered and scrapped after 15 years from the date of registration.
- Criteria to determine vehicle fitness will be emission tests, braking, safety equipment, among many other tests which are as per the Central Motor Vehicle Rules, 1989.

Disincentive mechanism

- As a disincentive measure, increased fees for fitness certificate and fitness test will be applicable for commercial vehicles 15 year onwards from the date of initial registration.
- Similarly, increased re-registration fees will be applicable for private vehicles 15 year onwards from the date of initial registration.

Incentives to owners of old vehicles

- The scheme shall provide strong incentives to owners of old vehicles to scrap old and unfit vehicles through registered scrapping centers, which will provide the owners with a scrapping certificate.
- State governments have been advised to offer a road- tax rebate of up to 25% for personal vehicles and up to 15% for commercial vehicles
- Ministry will issue advisories to carmakers to give a five per cent discount on the purchase of a new vehicle on the basis of a scrapping certificate.
- In addition, the registration fees may also be cancelled for purchase of new vehicle against the scrapping certificate.

Benefits of the policy

- Financial incentives of scrapping and buying a new car will be higher than the running cost of a 15-year-old personal vehicle.
- Moreover, the new vehicles will come with more safety features, which have been made compulsory.
- It will help in encouraging fuel efficient, environment friendly vehicles, thereby reducing vehicular pollution and oil import bill of the country.
- The policy will formalize the currently informal vehicle scrapping industry and boost availability of low-cost raw materials for automotive, steel and electronics industry.
- The ecosystem is expected to attract additional investments of around Rs. 10,000 Crore and 35,000 job opportunities.

Timeline of the new regulations

The new regulatory regime will start mandatory fitness testing of heavy commercial vehicles from April 2023 and for other categories, in a phased manner, from June 2024. Scrapping of government and PSU vehicles above 15 years of age will begin from April 2022.

Scraping facilities and fitness centers

- The MoRTH will promote setting up of Registered Vehicle Scrapping Facility (RVSF) across India and will encourage public and private participation for opening up of such centers.

- The centers will be linked to police and national databases to track stolen vehicles or those linked to other criminal activity.
- Locations identified include Alang in Gujarat, where a highly specialised scrapping centre is planned.
- Similarly, MoRTH will promote setting up of Automated Fitness Centers (AFC) on a public private partnership (PPP) model by state government, private sector, automobile companies etc
- The aim is to have one AFC in every district, or at least 718 such centers across India.



SCIENCE AND TECHNOLOGY

❖ **Paper III: The articles in this section are relevant to the following topics:**

- Science and Technology- developments and their applications and effects in everyday life
- Achievements of Indians in science & technology; indigenization of technology and developing new technology.
- Awareness in the fields of IT, Space, Computers, robotics, Nano-technology, bio-technology and issues relating to intellectual property rights.
- Prelims

5.1 ISRO SATELLITE LAUNCH: AMAZONIA-1

Why in News: The Indian Space Research Organisation (ISRO) made its first launch of 2021. It successfully launched the Polar Satellite Launch Vehicle, PSLV-C51, carrying 19 payloads: Brazil's Amazonia-1 satellite (as the primary load) and 18 co-passenger satellites.

News Update

- It was 53rd successful mission delivered by ISRO's workhorse rocket system, the Polar Satellite Launch Vehicle (PSLV).
- It was the first commercial mission of New Space India Limited (NSIL), ISRO's commercial arm.
- The mission was undertaken under a commercial arrangement with Spaceflight Inc., USA.
- The 18 co-passenger (5 from India and 13 from U.S.A) satellites included:
 - Four satellites (all from India) from IN-SPACe
 - 14 commercial satellites from NSIL (one from India and 13 from the USA).

Amazonia-1

- It is 637-kg commercial remote sensing satellite.
- It was injected into its precise orbit of 758 km in a sun-synchronous polar orbit.
- It is the first satellite designed and developed by the Brazilian space research agency. The satellite has been under development in Brazil for nearly two decades.
- It is an important mission for Brazil, which also marks the beginning of a new era for satellite development in the country.
- Amazonia series satellites is composed of two independent modules: a Service Module, which is the Multi-Mission Platform (MMP), and a Payload Module, which houses image cameras and equipment for recording and transmitting image data.
- This satellite will provide remote sensing data to users for monitoring deforestation in the Amazon region and analysis of diversified agriculture across the Brazilian territory.

IN-SPACe

- Indian National Space Promotion and Authorisation Centre (IN-SPACe) is ISRO's small satellites facilitation agency.
- It acts as an interface between ISRO and private parties, and assesses how best to utilise India's space resources and increase space-based activities.

NSIL

- It is a commercial arm of ISRO. It was created in 2019 to commercialise ISRO research and capabilities.
- Its main purpose is to market the technologies developed by ISRO and bring it more clients that need space-based services.
- In past it had three launches involving auxiliary small satellites and the recent launch is the first involving a primary commercial payload.

Satellites from NSIL

14 commercial satellites were from NSIL. Out of which one was from India and 13 were from US.

Launch vehicles

Launchers or Launch Vehicles are used to carry spacecraft to space.

India has two operational launchers:

- Polar Satellite Launch Vehicle (PSLV) and
 - Geosynchronous Satellite Launch Vehicle (GSLV).
-
- Vikram Sarabhai Space Centre, located in Thiruvananthapuram, is responsible for the design and development of launch vehicles.
 - Liquid Propulsion Systems Centre and ISRO Propulsion Complex, located at Valiamala and Mahendragiri respectively, develop the liquid and cryogenic stages for these launch vehicles.
 - Satish Dhawan Space Centre, SHAR, is the space port of India and is responsible for integration of launchers. It houses two operational launch pads from where all GSLV and PSLV flights take place.

5.2 DEPT. OF SCIENCE AND TECHNOLOGY INITIATIVES

Why in News: The Department of Science and Technology has been trying to empower women and increase their participation in **Science & Technology (S&T)** through various initiatives exclusively for women.

These initiatives address various challenges faced by women scientists in their education and career.

Initiatives under DST

1) Women Scientist Scheme (WOS)

- Women are an important section of the workforce, more particularly in the science & technology (S&T) domain. However, a large number of well-qualified women have to take a break in career due to motherhood and family responsibilities.
- To address such issues, Department of Science and Technology (DST) launched the Women Scientists Scheme (WOS) in 2002-03.
- The scheme is meant to encourage women in S&T domain, preferably those having a break in career and not having regular employment, to explore possibility of re-entry into the profession.

Categories under WOS

- Women Scientists Scheme-A (WOS-A) provides platform to women scientists and technologists for pursuing research in basic or applied sciences.
- Women Scientist Scheme-B (WOS-B) focuses on projects related to S&T interventions for societal benefit.
- Women Scientist Scheme-C (WOS-C) trains women in the field of Intellectual Property Rights (IPRs) for a period of one year.

2) Knowledge Involvement in Research Advancement through Nurturing (KIRAN)

- In the year 2014, DST restructured all women specific program under one umbrella called Knowledge Involvement in Research Advancement through Nurturing (KIRAN).
- It aims to address various issues related to women scientists' viz. unemployment, break-in career and relocation.
- It also aims to provide opportunities in research, entrepreneurship, science communication, technology development/demonstration and self-employment.

Components under KIRAN

CURIE:

- CURIE stands for Consolidation of University Research for Innovation and Excellence in Women Universities.

- It aims to develop modern infrastructure to help large number of women to enhance their S&T skills and knowledge and promote research culture in such institutions.

Mobility Scheme

It addresses relocation issues of women scientists working in regular positions in government organizations.

3) Gender Advancement for Transforming Institutions (GATI)

- Women in India face several challenges in moving up the academic and administrative hierarchy due to systemic barriers and structural factors in various domains, including STEMM.
- There are various policies and enabling environment in different institutions in India but a common approach to reduce the gender gap is lacking. The GATI program was launched in 2020 by DST, to address this issue.
- GATI is a mission mode program to promote gender equity in Science, Technology, Engineering, Mathematics and Medicine (STEMM) domains.
- It aims to create an enabling environment for equal participation of women in STEMM at all levels, addressing deep-rooted problems.
- It not only aims at increasing retention and recruitment but the progression of women throughout their professional journey.

5.3 NIO PROJECT FOR MAPPING OF INDIAN OCEAN

Why in News: A team of scientists from the National Institute of Oceanography (NIO) will spend the next three months traversing the course of over 10,000 nautical miles in the Indian Ocean to understand it at a cellular level.

About the project

- It is first-of-its-kind research project in the country
- The research project will take three years to complete

Aim

It aims at understanding the biochemistry and the response of the ocean to climate change, nutrient stress and increasing pollution.

Areas covered under the project

- The research vessel of scientists Sindhu Sadhana will be flagged off at Visakhapatnam to the mouth of the Ganga, then further down the ocean to Australia, then westward to Mauritius and up to the Pakistan border, gathering samples for genome mapping of microorganisms in the Indian Ocean.
- The researchers will collect samples from various stretches of the ocean at an average depth of about 5 km.
- The collected sample and the bacteria will be stored at -60 degrees Celsius with the help of liquid nitrogen.
- While some samples will be tested at six laboratories on board the vessel, several samples will be brought back to NIO for study and analysis.

Objectives of the project

- This will help scientists understand the internal working of the ecosystem of the Indian Ocean.
- The research will enable scientists to identify the factors controlling the changes in RNA, DNA in the oceans, and various stressors impacting them.
- The ocean has several micronutrients like nitrates, sulphates and silicates, minerals like iron ore and zinc, and trace metals like cadmium or copper.
- The genome mapping will show the presence of which these microbes have adapted to, in addition to their reaction to atmospheric carbon dioxide.
- This will help in identifying which part of the ocean has a greater concentration of which mineral or element.
- Scientists will then use these as tracers to tackle the causative factors for excess or lack of a certain mineral or element and suggest possible solutions for their mitigation.

Expected outcomes

- Large pool of RNA, DNA library of the oceans will be utilised for using the Indian Ocean to human benefit in the future.
- Exploring the ocean genome will enable an increase in the growing number of commercial biotechnology applications, extending from multiple anticancer treatments to cosmetics and industrial enzymes, to antiviral molecules.
- Exploration of the ocean at a genetic level will result in new insights into taxonomy and adaptive capacity that can help optimize conservation efforts.

- The project is expected to generate new information about trace metals from underexplored regions of the Indian Ocean.
- It is the third largest water body in the world, covering about 20 per cent of the Earth's water surface.

5.4 DEEP OCEAN MISSION

Why in News: The Union Minister of Earth Sciences has given information about Deep Ocean Mission to Loksabha.

Deep Ocean Mission

It is proposed as multi-ministerial multi-disciplinary program with emphasis on:

- Development of deep sea technology
- Exploration of deep sea mineral resources and biodiversity
- Acquisition of a research vessel for exploration
- Deep sea observations
- Capacity building

It is a part of the Blue Economy envisioned to be developed by 2030.

Budget allocation

- Deep Ocean Mission is proposed to be a Central Sector Scheme and no separate allocation for States is envisaged.
- In the Union Budget 2021-22, Rs 4,000 crore has been allocated to the mission.
- This money is to be spent over five years.
- This is the first time that a dedicated budget for this mission has been allocated.

Features of the Mission

- It will tap vast marine living and non-living resources including polymetallic nodules such as Copper, Nickel, Cobalt and Manganese.
- It will cover 75,000 sq.km of area in the Central Indian Ocean Basin.

The mission will be spearheaded by the Ministry of Earth Sciences in collaboration with an UN organisation for mineral exploration. The same body is also responsible in identifying areas for exploration in the region.

- It involves top scientific institutions such as ISRO, BARC, DRDO, CSIR, Department of Biotechnology and others.
- It is proposed to collaborate with non-governmental organizations for research collaboration for various components of Deep Ocean Mission.

Major objectives proposed under Deep Ocean Mission are as follows:

- Development of technologies for deep sea mining, underwater vehicles and underwater robotics;
- Development of ocean climate change advisory services;
- Technological innovations for exploration and conservation of deep sea biodiversity;
- Deep ocean survey and exploration;
- Proof of concept studies on energy and freshwater from the ocean; and
- Establishing advanced marine station for ocean biology

Components

A manned submersible for 6000 m depth is proposed to be developed as an ocean exploratory tool. Studies are planned under six major components:

- Mineral exploration on the sea-bed;
- Study and mapping of biodiversity;
- Study of climate change;
- Exploration of marine biology and developing allied courses, training;
- Development and demonstration of ocean exploration and
- Off-shore technologies for future.

DEEP OCEAN MISSION

► Deep Sea Mining through 'Underwater Vehicles' and 'Underwater Robotics'

► Asserting exclusive rights to explore polymetallic nodules from seabed **over 75,000 sq km of areas in international water**

► Estimated polymetallic nodules resource potential: **380 million tonnes (MT)**

► Development of ocean climate change advisory services

► Technology for sustainable utilisation of marine bio-resources

THESE POLYMETALLIC NODULES CONTAIN

Manganese **92.6 MT**

Nickel **4.7**

Copper **4.3**

Cobalt **1**

(*figures are rounded off)

► Deep ocean survey and exploration

► Energy from the ocean and offshore-based desalination

► Krill fishery from southern ocean

Importance of the mission

- With coastline of over 7500 kms, India can draw numerous benefits from the seas. While the huge ports helps in vibrant trade, the blue economy, inclusive of fishing and other activities is extremely beneficial for India.
- In addition to this, the depths of the seas have much more to offer. India's Exclusive Economic Zone spreads over 2.2 million sq. km. and in the deep sea, lies "unexplored and unutilized".
- Understanding the seas would also go a long way in mitigating the crisis of climate change. Based on the resource evaluation, India has an estimated resource of about 100 million tons of strategic metals in its allocated site in the Central Indian Ocean Basin.
- It will place India in the category of the select group of nations including US, China, Japan, Germany and Canada conducting oceanographic research in the deep sea. It will cover deep ocean survey exploration and projects for conservation of deep sea diversity.
- This mission will further strengthen India's position in the Indian Ocean region.

5.4 DOUBLE STRAIN AND MUTATION

Why in News: The government has announced that a new "double mutant variant" of the novel coronavirus has been detected in the country, along with the three variants from the United Kingdom, South Africa, and Brazil.

However, as per the government, no direct link has been established between the recent increase in Covid-19 cases in some states and the double mutant variant.

Virus Strain

- In the current context, the term strain can be used while referring to Sars-Cov-2 – the main virus causing COVID-19.
- The Sars-Cov-2 is a strain of the larger family of corona viruses – like Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). These are all different strains belonging to the same virus family.
- Other viruses like influenza and rotavirus also produce many different strains.
- A new virus strain is more concerning, as in biological terms, it is a subtype of a species of microorganisms.

Mutation

- Mutations are a change in the genetic material in (the genome) of a cell or virus and viruses often mutate in small ways while replicating or making copies of itself.
- Mutations in viruses are common and a normal part of the virus life cycle through which a strain develops new variants.
- In the majority of the cases, viral mutations do not have any impact on the way the virus affects individuals. In fact, in many cases, the mutation could actually make a virus less effective.
- However, in certain instances, a mutation could give the virus an advantage. In such cases, the changes result in a virus variant that adapts to its environment in a better way compared to the original virus

Variant of a virus

A variant of a virus means it has slight genetic changes, but the changes are not enough to be classified as a new strain. The UK Covid virus is a variant of COVID-19, although it is found to be more contagious.

During this epidemic, three kinds of changes are being keenly watched:

- Those that increase the ability of the virus to spread faster
- Those that cause more severe disease in the infected person
- Those that help the virus escape the immune response

The UK, Brazilian and South African variants are such strains.

Types of variants

The three variants from the UK, Brazil, and South Africa, have been termed as Variants of Concern (VOC) by the WHO. Each of them now has its own families, which means there have been many subsequent mutations in these but with the original defining mutation remaining intact.

The second is the Variant of interest, in which there are mutations found in the spike protein region of the virus. The spike protein is the part of the virus used by the virus to penetrate human cells.

The third variant is the variant which needs detailed investigation, and is called Variant under investigation.

Variants of concern in India

Variants of concern (VOCs) - first noticed in the UK, South Africa and Brazil - have been found in at least 18 states and union territories (UTs). 771 cases of VOCs have been detected in a total of 10,787 positive samples in these states and UTs.

Double mutant virus

A “double mutant” virus suggests that two significant mutations - or changes - have been discovered in different locations in a single variant of the virus.

The two mutations are:

- **E484Q mutation- that can escape antibody neutralisation**
- **L452R mutations which is associated with increased infectivity**

A total of 206 cases of the double mutant variant (E484Q + L452R) have been detected in Maharashtra. The double mutant variant has also been reported in Delhi (9 cases), Gujarat (3), and Punjab (2). Jammu, Ladakh, and Odisha have detected one case each.

The double mutant is a variant of interest, which requires further investigation to establish a direct link with the ongoing rise in the number of cases.

Low rate of Genome sequencing in India

- India has the second highest number of people infected with the coronavirus during the epidemic. However, it has done very few genome sequences of the different variants in circulation.
- So far, it has carried out gene analysis of 19,092 samples from across the country. This includes the sequencing of 10,787 samples since the government set up INSACOG in December, 2020 specifically for this purpose. Such a low rate of genome sequencing might not be statistically significant to establish conclusions about the changing nature and behaviour of the virus, or in designing appropriate interventions to contain the spread of the epidemic.
- Many other countries, including the United States and China, have analysed more than 100,000 gene sequences. One of the major reasons for the slow pace of genome sequencing in India has been a lack of funds.

Genome Sequencing

Genome sequencing is a testing process to map the entire genetic code of an organism - in this case, the virus. The genetic code of the virus works like its instruction manual. Studying genetic

changes in the organism is important to understand the origin, transmission and impact of the virus on patients.

INSACOG

INSACOG (Indian SARS-CoV2 Consortium on Genomics) is a grouping of 10 national laboratories for carrying out genomic sequencing. The overall aim of INSACOG is to monitor the genomic variations in the SARS-CoV-2 on a regular basis through a multi-laboratory network.

Knowledge generated through this vital research consortium will also assist in developing diagnostics and potential therapeutics and vaccines in the future.



ECOLOGY and ENVIRONMENT

- ❖ **Paper III:** The articles in this section are relevant to the following topics:
 - Conservation, environmental pollution and degradation, environmental impact assessment
 - Disaster and disaster management.
- ❖ **Prelims Oriented Questions**

6.1 NAMAMI GANGE

Why in News: The Namami Gange team reviewed progress of various projects in Delhi. It was observed that there was a significant progress in almost all projects in comparison to the previous review meetings. This provides the context for learning about the Namami Gange program.

Namami Gange Program

It is an Integrated Conservation Mission, approved as 'Flagship Program' by the Union Government in June 2014.

Objectives

- Effective abatement of pollution; and
- Conservation and rejuvenation of National River Ganga.

Its vision is to restore the wholesomeness of the Ganga River by ensuring 'Aviral Dhara' and 'Nirmal Dhara', and maintaining geological and ecological integrity of the river.

Implementation

It is being implemented by the National Mission for Clean Ganga (NMCG), and its state counterparts—State Program Management Groups.

Main Pillars of the Program

- Sewerage Treatment Infrastructure
- River Front Development
- River Surface Cleaning
- Biodiversity
- Afforestation
- Public Awareness
- Industrial Effluent Monitoring
- Ganga Gram

National Mission for Clean Ganga (NMCG)

- It was registered as a society in 2011 under the Societies Registration Act 1860.

- Earlier, it acted as implementation arm of National Ganga River Basin Authority (NGRBA) which was constituted under the provisions of the Environment (Protection) Act (EPA), 1986.
- NGRBA was dissolved with effect from the 7th October 2016, consequent to constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council).
- National Ganga Council is under the Chairmanship of Prime Minister. Now, NMCG is the implementation arm of Namami Gange Program.

Aims & Objectives of NMCG: The aims and objectives of NMCG are-

- To accomplish the mandate of National Ganga River Basin Authority (NGRBA) of ensuring effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin approach.
- To maintain minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

6.2 COASTAL ZONE MANAGEMENT PLAN

Why in News: The draft Coastal Zone Management Plan (CZMP) for Goa prepared by the National Centre for Sustainable Coastal Management (NCSCM), Chennai has led to a controversy in Goa. The draft has been criticised by locals, environmentalists and political parties.

Coastal Regulation Zone Rules

- In India, the Coastal Regulation Zone (CRZ) Rules govern human and industrial activity close to the coastline, in order to protect the fragile ecosystems near the sea.
- Coastal Regulation Zone Rules were notified in India for the first time in 1991, under the Environment Protection Act, 1986. After these were found to be restrictive, the Centre notified new Rules in 2011.
- The CRZ notification 2011 declared that the coastal stretches of the country and India's territorial waters, excluding Andaman and Nicobar and Lakshadweep islands, as Coastal Regulation Zones (CRZ).
- It restricted the setting up and expansion of any industry, operations or processes and manufacture or handling or storage or disposal of hazardous substances in CRZs.
- The restrictions depend on criteria such as the population of the area, the ecological sensitivity, the distance from the shore, and whether the area had been designated as a natural park or wildlife zone.

- Later, new rules were issued under CRZ notification 2019 to replace the 2011 Rules and develop the coastal region of the country in sustainable manner on scientific principles.
- In all the Rules, the coastal regulation zone has been defined as the area up to 500 m from the high-tide line.

Coastal Zone Management Plans

- The CRZ notification 2011 directed respective state governments and Union Territories to prepare Coastal Zone Management Plans (CZMP) by identifying and classifying the CRZ areas.
- The Coastal Zone Management Plans propose a planning framework for development around sensitive ecological zones, restricting development and other activities close to it.
- The primary purpose of a CZMP is to describe proposed actions to be implemented by administrative authorities and by the private sector to address priority management issues in the coastal zone.
- It aims to secure the livelihood of the fishing communities and other local communities living in the coastal areas, conserve and protect coastal stretches, their unique environment and marine area and promote development in a sustainable manner.

Approval of CZMP

The state Governments or Union territory administrations have to submit the draft CZMP to Ministry of Environment, Forest and Climate Change (MoEFCC), after stakeholder/public consultations.

The draft CZMP is referred by MoEFCC for a technical scrutiny by the Committee constituted for it by NCSCM, Chennai. After the technical scrutiny of the draft, the draft is placed for consideration and final approval by the MoEFCC.

Concerns related to CZMP in Goa

- It has been alleged that the Goa Coastal Zone Management Authority (GCZMA) had put up the CZMP for public hearing without examining it first. Due to this, errors pointed by village communities during the 2019 public consultation have remained in the new draft plans. Moreover, certain villages and municipal areas have been missing from the maps in CZMP.
- Re-zoning of beach areas and accommodation of allegedly illegal constructions has also been criticised.
- They further claim that the 30-day limit for suggestions and objections to the draft was not legal, as it was against the 60-day limit provided by the Environment Protection Rules, 1986.

- Protestors claim that the public hearing is only being conducted to complete the procedures without complying with the provisions for facilitating public participation, constitutional safeguards and principles of natural justice. As a result, lakhs of people have been denied their right to participate in the hearings and their right to ensure that their lives, environment and livelihoods are protected

6.3 SIMPLIPAL BIOSPHERE RESERVE FIRE

Why in News: A fire which started in the Simlipal Biosphere reserve in February and continued for nearly a week was recently brought under control.

Simlipal Biosphere reserve

- Simlipal, which derives its name from 'Simul' (silk cotton) tree, is a national park and a tiger reserve situated in the northern part of Odisha's Mayurbhanj district.
- Simlipal lies at the eastern end of the eastern ghat, and was declared a biosphere reserve by the central government in 1994.
- It has about 3000 species of plants and Sal is the dominant tree species in Simlipal.
- It is also home to various species of amphibians, reptiles, birds and mammals, which highlights the biodiversity richness of Simlipal.

Fire events in Simlipal

- Generally, with the onset of summers the forest area remains vulnerable to forest fires. This duration coincides with the shedding (of leaves) of deciduous forests in the forest areas.
- The fallen leaves are vulnerable to catching fire, as even a spark can lead to a huge fire. They also facilitate the spread of these forest fires quickly over the entire forest area.
- Forest fires are an annual phenomenon in the region, but are also brought under control due to rainfall. The last incident of a major forest fire was reported in 2015

Factors causing forest fires in Simlipal

- Natural causes such as lighting or even rising temperatures can sometimes result in these fires, but most of the fires are due to man-made factors.
- There are around 1,200 villages near the reserve, with a total population of about 4.5 lakh people, three-fourth of whom are tribals. During hunting, poachers set a small patch of forest on fire to divert wild animals. After hunting, the poachers do not put off the fire which eventually leads to spreading the fire over a large area.
- Forest areas are also set on fire by villagers to clear the dry leaves on the ground to facilitate growth of grass leaves for domestic cattle. They also light fire for easy collection of

non-timber forest products like Mahua and for eradication of ticks & insects. Mahua flowers are used to prepare a drink which is addictive in nature.

- Villagers also believe burning patches of sal trees will lead to better growth when planted again. This year, along with man-made factors, an advanced heat wave with the early onset of summer further deteriorated the condition.

Fire control and prevention measures

- Forest fires are generally brought under control by natural rains that take place in the region in the month of January and February.
- Forecasting fire-prone days, creating fire lines, clearing sites of dried biomass, and arresting poachers are some of the methods to prevent fires. Forest fire lines are strips where vegetation is cleared. This helps to break the forest into compartments to prevent fires from spreading.
- The forest department also conducts awareness programs in villages around the reserve to educate people on the issue.

6.4 WORLD AIR QUALITY REPORT 2020

Why in News: The World Air Quality report 2020 was recently released by IQAir.

World Air Quality report

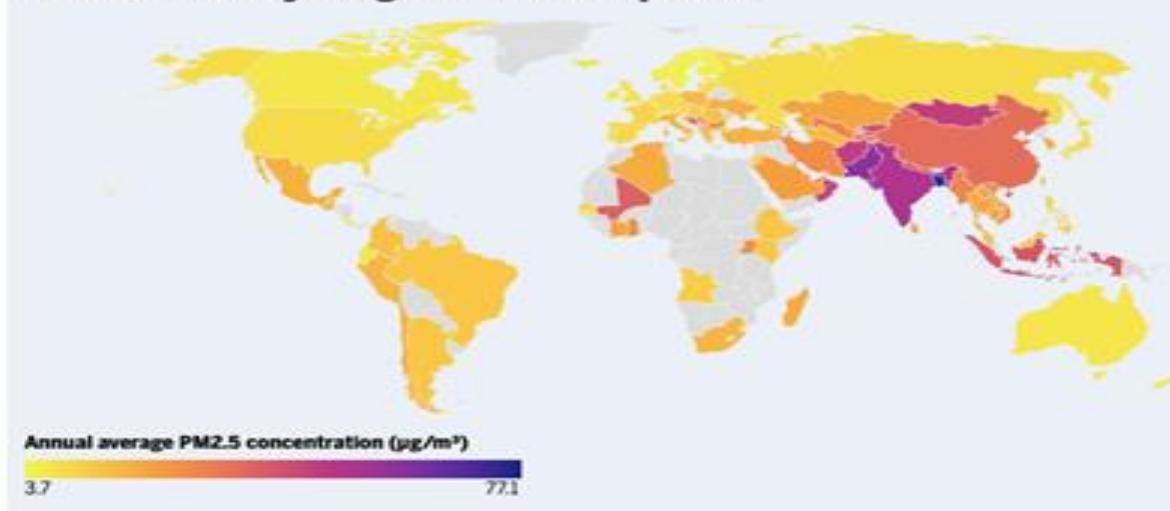
- The report analyzes PM2.5 data reported by ground-level monitoring stations around the world.
- This data largely comes from governmental air monitoring stations as well as a growing network of non-governmental air quality monitors.
- The 2020 report includes data for 106 countries, up from 98 countries in 2019 and 69 countries in 2018.
- The pollution levels are weighted averages, meaning that the population of a country influences the pollution values reported.
- The report aims to highlight a wide variety of air quality challenges and underline the threat of air pollution caused by humans.

Key findings of the report

- Air pollution continues to be one of the world's biggest health hazards to people everywhere, contributing to about 7 million premature deaths annually. 600,000 of these deaths include children.

- Air pollution is estimated to cost the global economy more than \$2.9 trillion per year, which is equal to 3.3% of the global GDP.
- In 2020, 84% of all monitored countries observed air quality improvements, due to global measures to slow the spread of COVID-19.
- However, only 24 out of 106 monitored countries met World Health Organization (WHO) annual guidelines for PM2.5 in 2020.
- About half of all European cities and 38% of American cities exceeded the WHO's target for annual PM2.5 pollution, in 2020.
- Many countries in South East Asia, the Middle East, Africa, South Asia and South America continue to lack the equipment and expertise to monitor and report air pollution.

Global Country/Region PM2.5 Exposure



Findings from South Asia

- South Asia remained the most polluted region of the world with Bangladesh, India and Pakistan sharing 42 of the 50 most polluted cities worldwide.
- Merely, 1.6% of the cities in South Asia met the WHO PM2.5 target in 2020.
- India, Iran, and Nepal are the only South Asian countries with domestic government monitoring networks reporting real-time data to the public.

World rankings

In 2020, Bangladesh was the most polluted country in the world followed by, Pakistan, India, Mongolia and Afghanistan. Hotan in north-western China was ranked as the world's most polluted city.

Key findings from India

- In 2020, all Indian cities which were monitored, observed air quality improvements compared to 2018, while 63% cities saw improvements compared with 2019.
- However, 22 out of the top 30 most polluted cities in the world were from India.
- India was placed as the third most polluted country in the world, with Delhi being the world's most polluted capital. Delhi was followed by Dhaka (Bangladesh) and Ulaanbaatar in Mongolia.
- Indian cities of Ghaziabad, Bulandshahr, BisrakhJalalpur, Bhiwadi and Noida were cited as the top five most polluted South Asian cities, all of which are part of the National Capital Region.
- Major sources of India's air pollution include transportation, biomass burning for cooking, electricity generation, industry, construction, waste burning, and episodic agricultural burning.

The report highlights that urgent action is both possible and necessary to combat air pollution. To see real, long-term improvements in air quality, governments must prioritize clean energy sources such as wind and solar and promote low cost, carbon neutral and accessible transport.

Speeding up the transition to clean energy and clean transport will not only save lives, but also significantly reduce healthcare-related costs.

IQAir

IQAir is a Switzerland based air quality technology company that seeks to empower individuals, organizations and communities to breathe cleaner air through information, collaboration and technology solutions.

6.5 INTERNATIONAL CONFERENCE ON DISASTER RESILIENT INFRASTRUCTURE

Why in News: Prime Minister Narendra Modi addressed the opening ceremony of International Conference on Disaster Resilient Infrastructure through video conference.

News Update

Prime Minister of Fiji, Prime Minister of Italy and Prime Minister of the United Kingdom were also present on the occasion. Participants from national governments, experts from international organisations, academic institutions and the private sector also participated in the conference.

Key points from PM's address

- **World is interconnected:** The current situation is unprecedented. COVID-19 pandemic has taught us that in an interdependent and interconnected world, no country is immune to the effect of global disasters
- **Fostering global ecosystem:** The pandemic has shown us that innovation to address global challenges can come from anywhere. For this, fostering of a global ecosystem is required that supports innovation in all parts of the world, and its transfer to places that are most in need.
- **Mitigate climate change:** Lessons from the pandemic must not be forgotten. They apply to not only public health disasters but other disasters as well. It will take sustained and concerted efforts to mitigate climate change.
- **Investments in infrastructure:** Countries that are making large investments in infrastructure, such as India, must ensure that this is an investment in resilience, and not in risk. Many infrastructure systems- digital infrastructure, shipping lines, aviation networks- cover the entire world and the effect of disaster in one part of the world can quickly spread across the world.
- **Cooperation is a must for ensuring the resilience of the global system.**
- **2021 is an important year:** World is approaching the mid-point of the Sustainable Development Goals, the Paris agreement, and the Sendai Framework. The expectations from COP-26, to be hosted by the UK and Italy later this year, are high. This partnership on resilient infrastructure must play its important role in helping meet some of those expectations.

Key priority areas

- First, CDRI must embody the central promise of the Sustainable Development Goals, that is, "leave no one behind". This means that we have to put the concerns of the most vulnerable nations and communities first.
- Second, we must take stock of the performance of some of the key infrastructure sectors: Particularly, health infrastructure and the digital infrastructure, that played a central role during the pandemic.
- Third, in our quest for resilience, no technological system should be considered too basic or too advanced. The CDRI must maximize the demonstration effect of the application of technology.

Coalition for Disaster Resilient Infrastructure (CDRI)

- The Prime Minister of India announced about the launch of CDRI during his speech at the UN Climate Action Summit on 23 September 2019.
- It is a multi-stakeholder global partnership of national governments, UN agencies and program, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions.
- At present, it is not an intergovernmental organization. These are ordinarily treaty-based organizations.

Secretariat: The CDRI Secretariat is based in New Delhi, India.

Member countries of CDRI are:

Afghanistan, Australia, Argentina, Bhutan, Chile, Fiji, France, Germany, India, Italy, Jamaica, Japan, Maldives, Mauritius, Mongolia, Nepal, Netherland, Peru, Sri Lanka, Turkey, UK and USA.

Member Organisations of CDRI are:

Asian Development Bank, World Bank Group, United Nations Development Program (UNDP), United Nations Office for Disaster Risk Reduction (UNDRR), The Private Sector Alliance for Disaster Resilient Societies and Coalition for Climate Resilient Investment.

Objective of CDRI

- It aims to promote the resilience of infrastructure systems to climate and disaster risks, thereby ensuring sustainable development.
- The Coalition functions as inclusive multi-stakeholder platform where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure.
- It helps to create a mechanism to assist countries to upgrade their capacities, systems, standards, regulations and practices with regard to infrastructure development in accordance with their risk context and economic needs.

Benefits of CDRI

The Coalition provides a forum for countries at all stages of development, to access knowledge and resources from other members to make their infrastructure resilient and thus, contribute to each other's economic growth. For countries that are in the early stages of infrastructure development, the Coalition provides:

- Access to good practices to develop appropriate standards
- Regulatory mechanisms to manage infrastructure development in a manner that fosters resilience

For countries at an advanced stage of infrastructure development, CDRI provides an opportunity to engage with the development of robust infrastructure systems that are interconnected globally.

Funding of CDRI

A large share of the estimated fund requirements to cover the core costs over the first five years has been invested by India. There are no obligations on the part of members to make financial contributions to CDRI.

6.6 NITI AAYOG VISION FOR GREAT NICOBAR

Why in News: More than 150 sq. km. of land is being made available for Phase I of NITI Aayog's holistic and sustainable vision for Great Nicobar Island, the southernmost island in the Andaman and Nicobar (A&N) group.

This amounts to nearly 18% of the 910 sq. km. island, and will cover nearly a quarter of its coastline. The overall plan will use about 244 sq. km. – a major portion of this is covered by forest and coastal systems.

Environmental conservationists are worried that the development plan will have a negative impact on the ecology of the island and will pose threats to the Giant Leatherback turtle.

Projects in Phase I of the plan

- Projects to be executed in Phase I of NITI Aayog's vision include a 22 sq. km. airport complex and a transshipment port (TSP) at South Bay at an estimated cost of ₹12,000 crore.
- A mass rapid transport system, a free trade zone and warehousing complex have also been planned on the south western coast.

Significance of Great Nicobar Island

The Great Nicobar Island is an important region for the Giant leatherback turtle and the Nicobar megapode. The Nicobar megapode is a globally endangered bird unique to the Nicobars. Around 90% of Nicobar megapode's nests are within a distance of 30 m from the shore.

Large numbers of leatherback turtles have been recorded nesting in the Great Nicobar Island — mainly on the wide beaches at the mouth of the Dagmar and Alexandira rivers on the west coast and at the mouth of the Galathea River along its south eastern coast.

Galathea Bay was, in fact, proposed as a wildlife sanctuary in 1997 for the protection of turtles and was also the site of a long-term monitoring program. The monitoring was stopped after the

tsunami devastation of 2004, but it provided the first systematic evidence of numbers and importance of these beaches. The A&N Islands are also a prominent part of the National Marine Turtle Action Plan (NMTAP).

Concerns related to development

- Developments in the A&N Islands indicate, that even as the NMTAP was being finalised, decisions were being made in violation of its basic concerns and premises.
- Moreover, the development plans have been pushed in spite of serious objections by the A&N Forest Department.
- Significant changes have also been made to the legal regimes for wildlife and forest conservation.
- In January, 2021, the Standing Committee of the National Board for Wildlife (NBWL) de-notified the entire Galathea Bay Wildlife Sanctuary for the development of a port.
- After that, another Environment Ministry expert committee approved a “zero extent” Ecologically Sensitive Zone (ESZ) for the Galathea National Park, to allow use of land for the NITI Aayog plan.
- The development plans could signal the end of crucial Giant Leatherback nesting sites.

Threats to Shompen community

- Similar concerns exist about the impact on the Shompen community. The proposed project areas are important hunting grounds for this hunter-gatherer nomadic community.
- The official Shompen Policy of 2015 specifically noted that the welfare and integrity of these people should be given priority with regard to large-scale development proposals in the future for Great Nicobar Island. Now, large forest areas here could become inaccessible and useless for the Shompen community.

National Marine Turtle Action Plan

- The National Marine Turtle Action Plan was recently released in February, 2021.
- Its vision is to create a viable and healthy marine ecosystem for marine turtles and associated species through a coordinated and participatory mechanism to ensure long term survival of marine turtles.
- The plan notes that India has identified all its important sea turtle nesting habitats as ‘Important Coastal and Marine Biodiversity Areas’.
- South Bay and West Bay on Little Andaman and Galathea on Great Nicobar, along with other nesting beaches in the islands, are specifically mentioned as “Important Marine Turtle Habitats in India” and the largest Leatherback nesting grounds in India.

- The plan identifies coastal development, including construction of ports, jetties, resorts and industries, as major threats to turtle populations.

Goals of NMTAP

- Conserve species and their habitat, and reduce negative impacts on survival of marine turtles.
- Improve understanding of marine turtle ecology and populations through research, monitoring and information exchange.
- Increase public awareness of the threats to marine turtles and their habitats, and enhance public participation in conservation activities.
- Enhance livelihoods of coastal communities by promoting sustainable ecotourism. Increase national, regional and international cooperation on marine turtle conservation.
- Strengthen law enforcement activities through a coordinated effort among relevant stakeholders.

6.7 WORLD WATER DAY

Why in News: On the occasion of World Water Day (22nd March), Prime Minister Narendra Modi launched the 'Jal Shakti Abhiyan: Catch the Rain' campaign.

A Memorandum of Agreement was also signed between the Union Minister of Jal Shakti and the Chief Ministers of Madhya Pradesh and Uttar Pradesh to implement the Ken Betwa Link Project.

Highlights of PM's speech

- The PM said that India's self-sufficiency is dependent on its water resources and water connectivity, and its fast-paced development is not possible without water security and effective water conservation.
- He noted that the challenge of the water crisis is increasing equally with India's development. Thus, it is the responsibility of the present generation of the country to fulfill its responsibility for the generations to come.
- He also emphasised that if India manages rainwater effectively, the country's dependence on groundwater will also reduce. Therefore, success of campaigns like 'Catch the Rain' is very important.
- He urged that all the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) funds should be spent on rain water conservation till the monsoon arrives this year.

Catch the Rain campaign

- Jal Shakti Abhiyan is the flagship water conservation campaign of Ministry of Jal Shakti.
- The 'Catch the Rain' campaign will be undertaken across the country, in both rural and urban areas with the theme "catch the rain, where it falls, when it falls".
- It will be implemented from March 22 to November 30 - the pre-monsoon and monsoon period in the country.
- The campaign aims to take water conservation at grass-root level through people's participation.
- On an average India receives 1,170mm of rainfall, most of it during the summer monsoon months, but only 10-20% of that is currently tapped.
- The campaign will push all stakeholders to create rainwater harvesting structures suitable to the climatic conditions, to ensure proper storage of rainwater.
- Further, geo tagging of all water bodies will be carried out throughout the country, which will form the basis for assessment of rejuvenation efforts for water bodies across the country.

World Water Day

- World Water Day is observed annually across the world on March 22 to highlight the importance of water and raise awareness about water crisis in the world.
- The core focus of the day is to support the achievement of Sustainable Development Goal 6: water and sanitation for all by 2030.
- The resolution to observe World Water Day was first adopted by the UN General Assembly in 1992, after which March 22 was declared as World Water Day and is celebrated around the world since 1993.
- Later on, other celebrations and events were added. For instance, the International Year of Cooperation in the Water Sphere 2013, and the current International Decade for Action on Water for Sustainable Development, 2018-2028.

Theme of World Water Day 2021

The theme of World Water Day 2021 is "Valuing Water" and has been chosen to highlight the value of water in daily lives. The value of water is about much more than its price and has enormous and complex value for households, food, culture, health, education, economics and the integrity of the natural environment.

Water status in India

- In India, the lack of access to clean water is an ongoing challenge that the country has been facing for several years. As most of the rivers in the country are inter-State rivers, the regulation and development of waters of these rivers, is a source of inter-State differences and disputes.
- In India, the average annual per capita water availability has fallen from 1820 cubic meters in 2001 to 1545 cubic meters in 2011, and could reduce further to 1341 and 1140 in the years 2025 and 2050 respectively.
- Annual per-capita water availability of less than 1700 cubic meters is considered as water stressed condition, whereas annual per- capita water availability below 1,000 cubic meters is considered as a water scarcity condition.
- Due to high variations in rainfall, water availability in many regions of the country is much below the national average and can be considered as water stressed/water scarce.



SOCIAL ISSUES

❖ **Paper I: The articles in this section are relevant to the following topics:**

- **Salient features of Indian Society, Diversity of India.**
- **Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies.**
- **Effects of globalization on Indian society**
- **Social empowerment, communalism, regionalism & secularism.**

7.1 QS WORLD UNIVERSITY RANKING

Why in News: The 2021 edition of QS World University Rankings by Subject have been released.

QS World University Rankings

- QS Quacquarelli Symonds is a leading provider of services, analytics, and insight to the global higher education sector.
- Its mission is to enable motivated people anywhere in the world to fulfill their potential through educational achievement, international mobility, and career development.
- The QS World University Rankings portfolio, inaugurated in 2004, has grown to become a popular source of comparative data about university performance.
- It also published the QS Asia University Rankings.

QS World University Rankings by Subject 2021

The QS World University Rankings by Subject are compiled annually to help prospective students identify the leading universities in a particular subject. Research citations, along with the results of major global surveys of employers and academics are used to rank universities.

The QS World University Rankings by Subject 2021 cover a total of 51 disciplines, grouped into five broad subject areas.

- Arts & Humanities
- Engineering and Technology
- Life Sciences & Medicine
- Natural Sciences
- Social Sciences & Management

News Update

In the QS World University Rankings by Subject 2021 just released, 12 Indian institutions secured position in top 100.

In the 'Engineering and Technology' subject area:

- IIT Madras has been ranked 30th in the world for Petroleum Engineering
- IIT Bombay has been ranked 41st and IIT Kharagpur has been ranked 44th in the world for Minerals and Mining Engineering

- IIT-Guwahati (for petroleum engineering) and Anna University (petroleum engineering), which figure for the first time in top 100

In the 'Social Sciences & Management' subject area

- University of Delhi has been ranked 50th in the world for Development Studies.
- The O P Jindal Global University is the only private university to have entered the top-100 club. Its law program is now ranked 76th globally.
- Jawaharlal Nehru University (anthropology) also figures in the top 100.

IIT Bombay is the best performer:

IIT-Bombay has cornered more top 100 positions than any other Indian institution. Seven of its program (all engineering except one of art and design) are among the best 100 in the world. However, it lower compared to last year, when it had nine — chemistry and materials science engineering do not feature in the top 100 this year.

Government's reaction

- The Union Education Minister said that Government's continuous focus on improvement over the last few years and reform in Indian higher education is showing up in results. He said there has been a significant improvement in the representation of Indian institutions in globally acclaimed and reputed rankings like QS.
- He noted that there's been significant progress in the last few years in terms of enrolment in higher education which now stands at 37.4 million.
- He also highlighted the achievements of the Government in addressing the gender gap in higher education, wherein now women constitute 48.6% of the total enrolment.
- Further, these rankings and ratings have fostered healthy competition amongst Indian Institutions motivating them towards global excellence.

7.2 EASE OF LIVING INDEX 2020

Why in News: The Ministry of Housing Affairs recently released the Ease of Living Index 2020. The assessment exercise was carried out last year just before the lockdown.

Ease of Living Index 2020

The Ease of Living Index 2020 is an evaluation tool that reflects the ease of living in Indian cities.

- It examines the impact of urban development programs and the quality of life and economic and social opportunities available to the citizens.
- Unlike the first ease of living index (EoLI) report of 2018, the latest ranking of cities in 2020 has classified 111 cities in two categories on the basis of population sizes: million-plus cities and cities having population less than a million.

Evaluation parameters

The Ease of Living Index evaluates the well-being of Indian citizens, across various parameters that consist of four pillars:

- Quality of Life (35% weightage);
- Economic Ability (15% weightage);
- Sustainability (20% weightage), and
- Citizens Perception Survey (30% weightage).

35% Weightage	15% Weightage	20% Weightage	30% Weightage
Quality of Life	Economic Ability	Sustainability	Citizen Perception Survey
			

- The pillar on Quality of Life examines provisions for necessities such as affordable housing, access to clean water, basic education, healthcare facilities, safety and security, and recreation avenues.
- The pillar on Economic Ability captures the economic well-being of citizens by evaluating the level of economic development and inequalities that they encounter in a particular city.
- The Sustainability pillar evaluates availability of green spaces, promotion of green buildings, level of energy consumption, the quality of natural resources such as air and water, and the city's ability to withstand natural disasters.
- The assessment also includes the residents' view on the services provided by city administration through a citizen perception survey.

Key findings

- Indian cities have achieved an average score of 53.51 in the Ease of Living Index that ranges from a scale of 0 (worst-case scenario) to 100 (best-case scenario).

- Factors such as access to education (70.7), Housing & Shelter (79.5), and Safety and Security (86.7) have led to a national average score of 51.38 for the Quality of Life
- Economic Ability is the worst performing amongst all the pillars, with an aggregate score of 13.17.
- The Sustainability pillar also scored a high national average of 53.63.

Rankings of Million-plus population cities:

- Bangalore ranks first, among 49 Indian cities with a population of over one million, pushing previous topper Pune to number two.
- Ahmedabad, Chennai, Surat, Navi Mumbai, Coimbatore, Vadodara, Indore and Greater Mumbai are the other eight cities in the top 10 list.
- Bareilly, Dhanbad and Srinagar come at the bottom of the list. Among million-plus cities, Chennai, Coimbatore and Navi Mumbai rank first, second and third on quality of life pillar. In the economic ability pillar, the top rankers are Bengaluru, Delhi and Pune.

Cities with population less than 1million		Cities with population above 1million	
RANK	TOP 10	RANK	TOP 10
1	Shimla	62	Muzaffarpur
2	Bhubaneswar	61	Satna
3	Silvassa	60	Namchi
4	Kakinada	61	Rampur
5	Salem	60	Aligarh
6	Vellore	59	Aizawl
7	Gandhinagar	58	Dindigul
8	Gurgaon	57	Pasighat
9	Devangere	56	Rourkela
10	Tiruchirapalli	55	Itanagar

CITIES WITH POPULATION LESS THAN 1 MILLION		CITIES WITH POPULATION ABOVE 1 MILLION	
RANK	TOP 10	RANK	TOP 10
1	Bengaluru	49	Srinagar
2	Pune	48	Dhanbad
3	Ahmedabad	47	Bareilly
4	Chennai	46	Guwahati
5	Surat	45	Amritsar
6	Navi Mumbai	44	Kota
7	Coimbatore	43	Jabalpur
8	Vadodara	42	Ranchi
9	Indore	41	Vijayawada
10	Greater Mumbai	40	Faridabad

Regional disparity

The rankings show that most of the top performers are concentrated in the prosperous states located in western and southern India. On the other hand, cities in historically backward states that are mostly located in the northern and eastern parts of the country are featured in the bottom of the ranking.

7.3 INVESTMENT OPPORTUNITY IN INDIA'S HEALTHCARE

Why in News: NITI Aayog recently released a report, titled 'Investment Opportunities in India's Healthcare Sector'. The report outlined a range of investment opportunities in the country's healthcare sector across hospitals, pharmaceuticals and medical devices.

Highlights of the report

Overview

- Healthcare has become one of the largest sectors of the Indian economy, in terms of both revenue and employment.
- According to the report, Foreign Direct Investment (FDI) inflows in the healthcare sector in India increased from USD 94 million in 2011 to USD 1,275 million in 2016, an increase of over 13.5 times.
- India's healthcare industry has been growing at a Compound Annual Growth Rate (CAGR) of around 22% since 2016. At this rate, it is expected to reach USD 372 billion in 2022.
- The hospital industry in India accounts for 80 per cent of the total healthcare market. It was valued at USD 61.79 billion in 2016-17 and is expected to reach USD 132 billion by 2023, growing at a CAGR of 16-17%.
- Overall, the healthcare sector has the potential to generate 2.7 million additional jobs in India between 2017-22 - over 500,000 new jobs per year.

Factors driving growth

- Rising instances of lifestyle diseases, such as high cholesterol, high blood pressure, obesity, poor diet and alcohol consumption in urban areas is boosting demand for specialized care services.
- In addition to these trends, Covid-19 is likely to lead to long-term changes in attitudes towards personal health and hygiene, health insurance, fitness and nutrition, as well as health monitoring and medical check-ups.
- Furthermore, there is a growing emphasis on the emergence of public-private partnership models in India's healthcare sector.
- All of these factors together create several opportunities for investment in India's healthcare industry.

Distribution of hospital beds

- According to the report, around 65 per cent of hospital beds in India cater to almost 50 per cent of the population concentrated in Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Telangana, West Bengal and Kerala.
- The other 50 per cent of the country's population living in the remaining 21 states and 8 Union Territories has access to only 35 per cent of hospital beds.
- There is tremendous potential to grow hospital beds, by at least 30 per cent, for ensuring equitable access to healthcare for citizens in all parts of the country.
- Thus, the expansion of private players to tier-2 and tier-3 locations, beyond metropolitan cities, offers an attractive investment opportunity.

Growth segments

Pharmaceuticals

- With respect to pharmaceuticals, India has the opportunity to boost domestic manufacturing, supported by recent government schemes with performance-linked incentives, as part of the Aatmanirbhar Bharat initiative.
- Further, between 2018 and 2024, patents worth USD 251 billion are expected to expire globally, which acts as a big opportunity for the country's pharmaceutical sector.

Medical devices and equipment segment

In the medical devices and equipment segment, expansion of diagnostic and pathology centers as well as miniaturised diagnostics (smaller instruments used in diagnosis) have high potential for growth.

Medical Value Travel

The medical travel especially wellness tourism, also has bright prospects, due India's strengths in alternative systems of medicine.

Technology advancements

The advancements such as Artificial Intelligence (AI), wearables and other mobile technologies, along with Internet of Things, also offer numerous avenues for investment. The pandemic has also accelerated the adoption of digital technologies, including telemedicine.

Growth in home healthcare solutions: Although the adoption of home healthcare solutions in India is currently very small, it has tremendous potential for growth in the future.

MISCELLANEOUS

➤ NEW DEVELOPMENT BANK

Why in News: Union Minister of Finance & Corporate Affairs and India's Governor in New Development Bank (NDB), Nirmala Sitharaman recently attended the 6th Annual Meeting of Board of Governors of New Development Bank. The meeting was also attended by Governors/Alternate Governors of Brazil, China, Russia and South Africa.

New Development Bank

- The New Development Bank (NDB), formerly referred to as the BRICS Development Bank, is a multilateral development bank established by the BRICS states (Brazil, Russia, India, China and South Africa). The bank is headquartered in Shanghai.
- During the sixth BRICS Summit in Fortaleza (2014), the leaders signed the Agreement establishing the New Development Bank (NDB). The NDB was formed to support infrastructure and sustainable development efforts in BRICS and other underserved, emerging economies for faster development through innovation and new technology.
- In 2018, the NDB received observer status in the UN General Assembly, establishing a firm basis for active cooperation with the United Nations. All members of the United Nations can be members of NDB; however the share of the BRICS nations can never be less than 55% of voting power.

Functions of NDB

- NDB supports public or private projects through loans, guarantees, equity participation and other financial instruments.
- It cooperates with international organizations and other financial entities, and provides technical assistance for projects to be supported by the Bank.
- It also engages in information, cultural and personnel exchanges to contribute towards the achievement of environmental and social sustainability.

➤ G7

Why in News: The Indian representative (Sherpa) attended the second virtual meeting of Sherpas of Group of Seven (G7) and guest countries.

G-7

- G-7 or 'Group of Seven' is the group of the largest advanced economies of the world comprising of the United States (US), United Kingdom (UK), France, Germany, Italy, Canada and Japan.
- G-7 has its origins in an intergovernmental organisation that was formed in 1975 by the US, UK, France, Germany, Italy and Japan. Canada joined the group in 1976.
- The European Union began attending the G-7 Summits in 1977. It holds all the rights and responsibilities of full members except to chair or host the meeting.
- The G-7 does not have a formal constitution or a fixed headquarters.

Scope

The initial scope of this group was to discuss economic issues. With time, the scope of deliberations was expanded to other critical challenges, like financial crises, terrorism, arms control and drug trafficking etc.

G7 to G8 to G7

Russia joined the G-7 in 1997 and now, G-7 was named as G-8. However, Russia was expelled from G-7 in 2014 after it annexed Crimea region of Ukraine. This was seen by other members as violation of sovereignty and territorial integrity of the Ukraine. Thus, G-8 again became G-7.

➤ **India's third biennial update report (BUR-III) to the UNFCCC**

India has recently submitted its third biennial update report (BUR-III) to the UNFCCC. In it, India reported that it is on target to meet its voluntary goal under Copenhagen pledge of 2009 to reduce the emission intensity of GDP by 20-25% from 2005 levels by 2020.

News Update

- India has recently submitted its third biennial update report (BUR-III) to the UNFCCC. India had submitted its first BUR to the UNFCCC in 2016 and the second in 2018.
- India is fourth in terms of overall global GHG emissions with China, the US and EU+UK being the top three. In terms of per capita emissions, India's figure is nearly one-third of the global average.

India's BUR-III to the UNFCCC

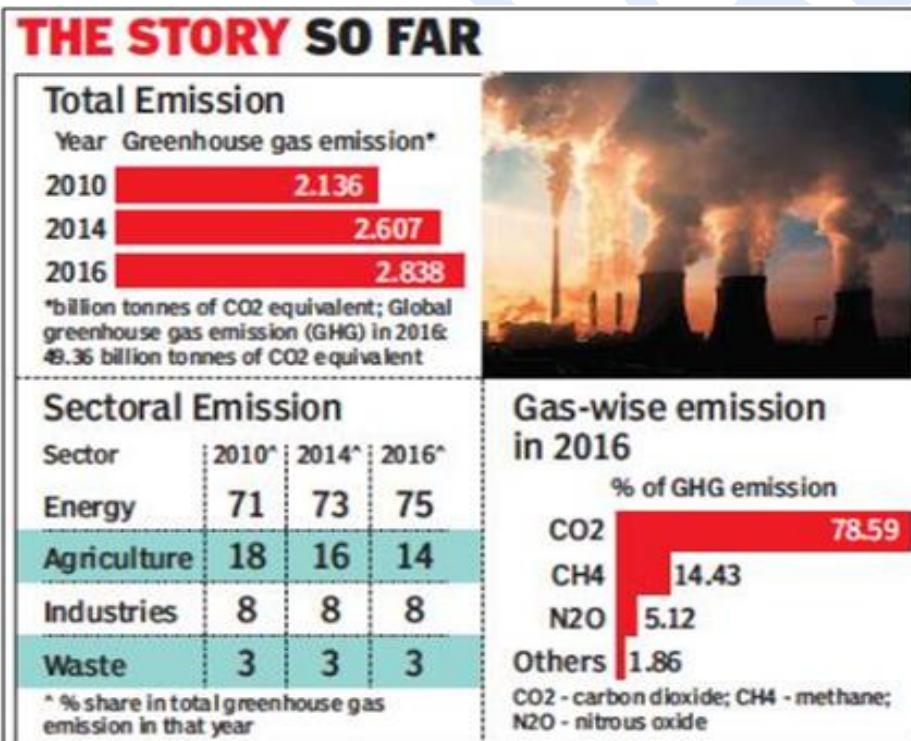
Increase in Emissions:

In 2016, India emitted 2.8 billion tonnes of greenhouse gases with the energy sector alone accounting for 75% of the total emissions. India's carbon footprint has been consistently increasing in sync with its development needs.

Decrease in emission intensity:

While India's emission will continue to increase as it pursues its development path, India is working to reduce its emission intensity. In 2009 Copenhagen pledge, India voluntarily committed to reducing the emission intensity of GDP by 20-25% from 2005 levels by 2020.

In BUR-III, India declared that it has already reduced its emission intensity (per unit of GDP) by 24% between 2005 and 2016. This means that India is not only on track, but will eventually exceed what it had voluntarily pledged to the UN climate body with respect to its pre-2020 commitments.



➤ International Ranger Award

Mahinder Giri, a range officer at Rajaji Tiger Reserve, has won the prestigious International Ranger Award.

News Update

The International Ranger Award has been announced for 10 professionals across the globe by the International Union for Conservation of Nature (IUCN) and World Commission on Protected Areas (WCPA). It is based on their contribution towards conservation.

Giri is the only ranger from Asia to win this award. He won the award for his efforts:

- in curbing human-wildlife conflict in and around Rajaji and
- His role in the ongoing tiger translocation exercise from Corbett Tiger Reserve to Rajaji Tiger Reserve (RTR).

International Ranger Award

- The award was created in 2020 by IUCN and WCPA in collaboration with International Ranger Federation, Global Wildlife Conservation, and Conservation Allies.
- The awards are designed to recognize the wide diversity of rangers around the world.
- Winners of the International Ranger Award will receive a unique uniform patch along with a US\$10,000 for their associated organisation to support their work.

The aim is to highlight and felicitate the extraordinary work that rangers do in protected and conserved areas worldwide.

➤ World Heritage Convention

The Union Ministry of Culture has informed the Lok Sabha about the agencies in charge of the protection of various UNESCO World Heritage Sites in India.

World Heritage Convention

- It is the convention concerning the protection of the World Cultural and Natural Heritage, adopted by the General Conference of UNESCO in 1972.
- It is based on the premise that certain places on Earth are of outstanding universal value and should therefore form part of the common heritage of humankind.
- The Convention defines the kind of natural or cultural sites which can be considered for inscription on the World Heritage List.
- The Convention sets out the duties of States Parties in identifying potential sites and their role in protecting and preserving them.
- The World Heritage Committee is responsible for the implementation of the World Heritage Convention.

World Heritage Sites

World Heritage Sites are cultural and/or natural sites considered being of 'Outstanding Universal Value', which have been inscribed on the World Heritage List by the World Heritage Committee. These places or buildings are thought to:

- have special importance for everyone
- represent unique, or the most significant or best, examples of the world's cultural and/or natural heritage

World Heritage status is a high accolade that brings with it responsibilities and international scrutiny.

World Heritage Sites in India

At present, India has 38 World Heritage Properties. These properties are under the protection of various relevant agencies/ministries.



(NOTE: KINDLY FOLLOW WEEKLY UPDATES TOO ALONG THIS MAGAZINE)