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CURRENT AFFAIRS

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INDEX

POLITY AND GOVERNANCE

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

1.1 CORPORATE SOCIAL RESPONSIBILITY (CSR) AMENDMENT, 2022

Why in News: According to a recent notification issued by the Ministry of Corporate Affairs, the government has amended rules governing corporate social responsibility (CSR).

Background

- **India is one of the first countries in the world to make corporate social responsibility (CSR) a legal obligation on corporations through the Companies Act 2013.**
- India is perhaps the only country where both spending and reporting of CSR obligations are mandatory. The government has also made it clear that CSR spending is not mere charity or donations without any benefits.
- **The government has also made a conscious attempt to keep the CSR legislation in line with India's commitment to the Sustainable Development Goals (SDGs). .**
- The field of CSR in India has expanded significantly; more and more corporations are now constructively involved in meeting their social obligations.
- However, there are several challenges that need to be addressed to further enhance the effectiveness of CSR activities in ensuring sustainable and inclusive development.

CSR Evolution and Meaning

- According to the **United Nations Industrial Development Organization (UNIDO), corporate social responsibility is a management concept for companies to integrate social and environmental concerns into their business operations and interactions with stakeholders.**
- CSR is a type of corporate governance in which entrepreneurs contribute to social welfare.
- CSR is based on a company's sense of responsibility towards its communities and the environment in which it operates. Sustainability (creating economic, social and environmental value) and ESG (environmental, social and governance) are closely linked.
- CSR is commonly understood as a way for companies to balance economic, environmental and social requirements (the "triple bottom line approach") while meeting the expectations of their shareholders and stakeholders.

Evolution of CSR

- In the 1950s, CSR was understood as an obligation to society. In the 1960s, the concept came to be seen as a link between entrepreneurship and society.

- From the 1970s to the 1990s, the definition of CSR expanded to include many other aspects such as stakeholder, ethics, volunteerism, philanthropy, environmentalism, and the triple bottom line i.e. People, Earth, Profit.
- **The dimensions of corporate social responsibility** in the 21st century are much broader. This includes improving the quality of life for citizens, human and labor rights; environmental concerns; issues related to corruption; Issues of transparency and accountability.

CSR Framework in India

- **The Companies Act, 2013 is a landmark law that made India the first country to mandate and quantify CSR spending.** The incorporation of CSR is the government's attempt to involve businesses in the national development agenda.
- **Section 135(1)** of the Act prescribes the threshold values for identifying companies that are required to create a CSR committee-those whose, in the immediately preceding financial year:
  - Net worth is Rs 500 crore or more; or.
  - Turnover is Rs 1000 crore or more; or.
  - Net profit is Rs 5 crore or more.
- As per the Companies (Amendment) Act, 2019, CSR applies to companies before completion of 3 financial years.
- Companies are required to spend in each financial year at least 2% of their average net profit generated during the 3 immediately preceding financial years.
- For companies that have not completed 3 financial years, the average net profits generated in the previous financial years will be taken into account.
- CSR activities in India should not be undertaken in the ordinary course of business and must relate to any of the 17 CSR activities listed in Schedule VII of the Act.
- **Primary objective of CSR:** To promote a responsible and sustainable business philosophy at a broad level and to encourage companies to come up with innovative ideas and robust management systems.

Changes brought by the Amendment Rules

- **Establishment of a CSR committee for unspent CSR amount**: Companies can set aside unused funds for CSR in designated account as long as they use them within three financial years. Its utilization is to be monitored by the CSR committee.
- **Change in Expenditure for Impact Assessment:** The Amendment Rules provide that the cost of social impact assessments, which can be considered as CSR spending, cannot be greater

than 2% of all CSR expenditures for the applicable financial year or Rupees 50 lakh, whichever is higher.

- **Revised format for annual report on CSR activities:** The Amendment Rules provide for a new format for the annual report on CSR activities.
  - For instance, companies have to give brief explanation of its CSR policy, Information about the members of the CSR committee and web links for the impact assessments of CSR projects.

Significance of CSR

Trusteeship is a socio-economic philosophy that was propounded by Mahatma Gandhi. It provides a means by which the wealthy people would be the trustees of trusts that looked after the welfare of the people in general. … Gandhi believed that the wealthy people could be persuaded to part with their wealth to help the poor.

Theme wise CSR fund flow in between FY14-15 to FY18-19 (INR Cr.)*

| Theme	INR Cr.
Others (Admin, Misc. Projects)	3116
Urban Slum Development	288
Rural Development	5896
Prime Minister's National Relief Fund	719
Rural Sports and Paralympic	911
Technology Incubation	144
Environment Sustainability	4842
Benefits to Armed Forces Veteran	96
Protection of Heritage & Art	815
Gender Equality and Women Empowerment	1534
Education & Skills	15484
Poverty Alleviation, Healthcare and WASH	14094

- **Sustainable Development Goals:** Business is seen as a key driver of the SDGs as it can use creativity and innovation to achieve sustainable development. Together, CSR and SDGs have great potential to develop interconnected models for sustainable growth. Many companies align their CSR focus areas with his SDGs to fulfil their CSR mandate.
- **CSR for Technology Incubators:** In September 2019, the government expanded the scope of his CSR to boost India's R&D and innovation ecosystem. Donations to government/PSU funded incubators or research and academic institutions are included in CSR.
- **Responsible Reputation/Customer Loyalty:** A company's social investments can help build its reputation as a responsible company, which in turn can lead to competitive advantage. Companies often prefer suppliers with responsible policies.
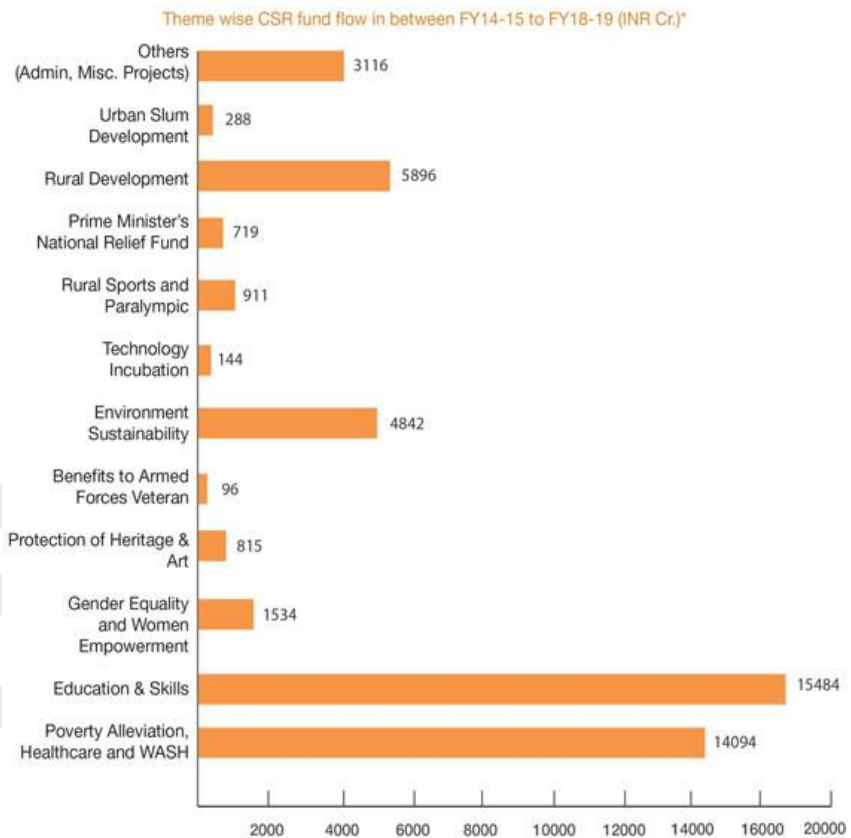
- **Cost Savings:** By reducing resource consumption, waste and emissions, you can protect the environment and save money. With a few simple steps, your company can potentially reduce your utility bills and generate savings for your business.
- **Attracting Responsible Investors:** Socially Responsible Investors (SRIs) look for companies that share common values.
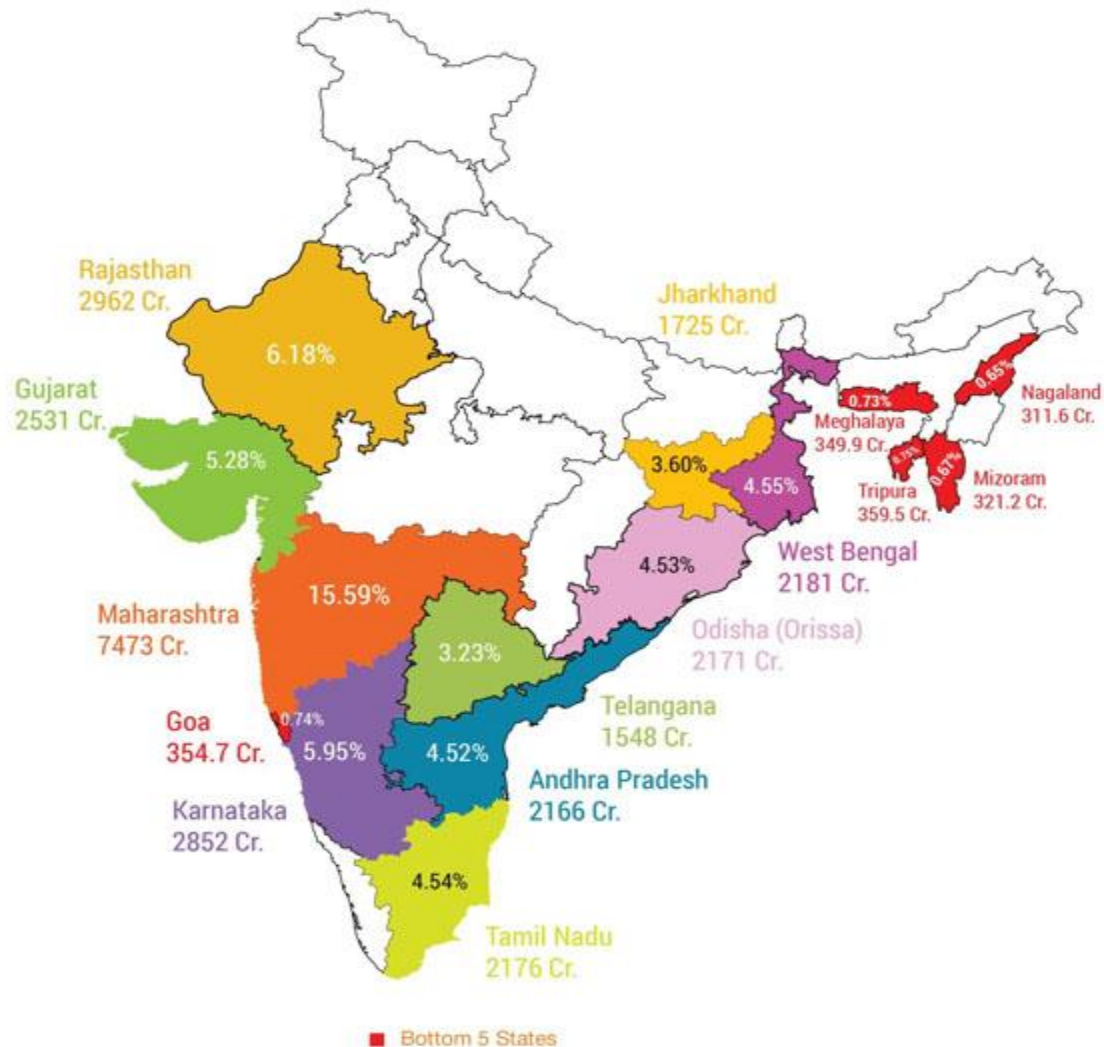
Challenges in Implementing CSR

- **Geographic Focus:** Companies tend to fund projects that are closer to their location. As a result, industrialized areas are prioritized over poor and undeveloped areas that need more development and support.

- **Lack of reporting:** Most companies do not report the exact amount spent on CSR activities. As a result, it is difficult to estimate the exact amount of funds a company has spent.
- **Spending disproportionately on certain areas:** Of the nine different plans mandated by the Companies Act 2013, two plans (combatting various diseases and promoting education) accounted for 44% of total CSR spending, accounted for While reducing child mortality received no funding and eradicating extreme hunger and poverty received only 6% of the total CSR expenditure.
- **Lack of Community Participation in CSR Activities:** This is largely attributable to limited awareness about CSR and minimal outreach efforts by companies.
- **Issue of Transparency:** Companies have complained that there exists lack of transparency on the part of the local implementing agencies as they do not make adequate efforts to disclose information on their impact assessment, utilization of funds etc.
- **Narrow Perception towards CSR Initiatives:** NGOs and Government agencies usually possess a narrow outlook towards the CSR initiatives of companies. Often CSR initiatives are defined being more donor-driven than local in approach. As a result, they find it difficult to decide whether to engage in such activities in the medium to long term.

Way Forward and Recommendations

- **CSR Activities in Local Areas:** The emphasis on local area in the Act should not be treated mandatory in nature. Companies should engage in CSR activities by balancing local area preference with national priorities.
- **Schedule VII of the Act:** It should be mapped and aligned largely with SDGs and some important items such as senior citizens' welfare, disaster management, and heritage be additionally included to develop an SDG+ framework.
- **Contribution to Central Government funds:** This provision should be discontinued as CSR spend. However, a specific designated fund may be created for transfer of unspent CSR funds lying with the company beyond the proposed 3-5year time limit.
- **Issues related to Reporting for CSR:** Enhanced disclosures should be made for better information dissemination with respect to selection of projects, locations and implementing agencies to facilitate better monitoring.
- **CSR Audit:** CSR may be brought within the purview of statutory financial audit, by making details of CSR spending as part of the financial statement of a company.
- **Creation of 'Social Impact Companies':** To express object of pursuing social outcomes, while being permitted to achieve conditional profit which can be distributed.

- **Tax Benefits for CSR Activities:** All activities listed under Schedule VII to enjoy uniform tax benefits.
- **Third party assessment of CSR Projects:** 5% of CSR mandated companies be identified on a random basis for third-party assessments on a pilot basis.
- **Embrace a participatory approach with communities and NGOs:** Companies should engage with NGOs and communities as partners across program design and implementation.
- **Dedicated department:** There could be a dedicated Department of CSR in the Ministry for Corporate Affairs at the Central level and the one in the Finance Ministry of the State.

1.2   ELECTION FUNDING

Why in News: The Association of Democratic Reforms (ADR) recently released an analysis report on Sources of Funding of National and Regional Political Parties. The report has provided some startling observations.

- The total income of national and regional parties from unknown sources for FY2020-21 stood at INR 690.67 crore. Between 2004-05 and 2020-21, the national political parties have collected more than INR 15,077 crore from unknown sources.
- Political experts that the opacity in electoral funding is the single biggest factor in political corruption in India. Money is central to the issue of political corruption and political parties are suspected to be the largest and most direct beneficiaries.
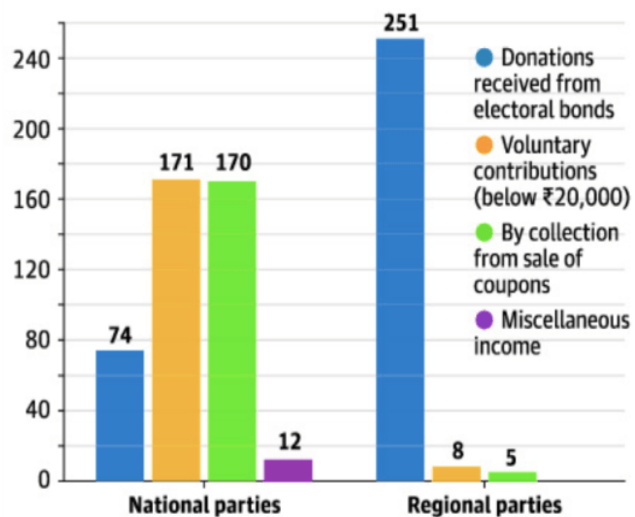
Electoral Funding

- Money received by the political parties and the expenditure done by them in the process of election (directly or indirectly) come under the ambit of Electoral Funding/Financing. Laws governing these financial aspects are known as electoral funding/financing law.
- Electoral financing law can be studied under three broad sub-groups: (a) Limits on political contributions and party and candidate expenditure; (b) Disclosure norms and requirements; (c) State funding of elections.
- Electoral funding in India is broadly governed by the provisions of the Representatives of People Act (RoPA), 1951; the Conduct of Election Rules, 1961; the Companies Act, 2013; and the Income Tax Act, 1961.

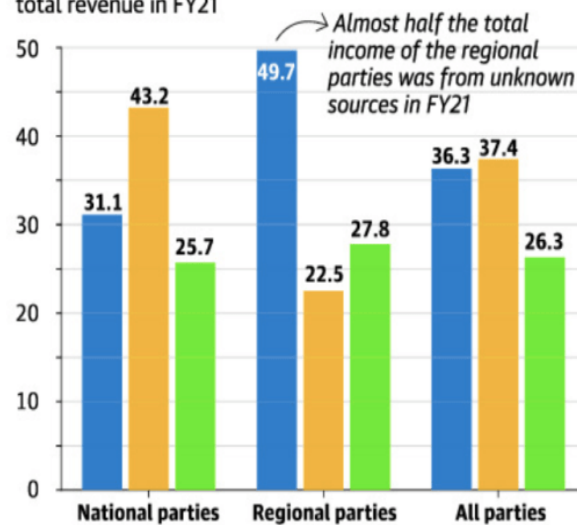**Findings of the ADR Report on Electoral Funding**

For the FY2020-21, 8 national political parties have declared INR 426.74 crore income from unknown sources. 27 regional parties received INR 263.928 crore income from unknown sources.

31% income of national parties and ~50% income of regional parties have come from 'unknown resources'. The report has treated unknown income as the income declared in the IT returns without giving source of income for donations below INR 20,000.

① Undisclosed sources | The graph shows the amount of funding (in ₹ crore) received in FY21 through unknown sources. The national parties and regional parties received ₹427 crore and ₹264 crore worth of funds, respectively, from unknown sources. A split:

- Donations received from electoral bonds
- Voluntary contributions (below ₹20,000)
- By collection from sale of coupons
- Miscellaneous income

National parties: 74, 171, 170, 12
Regional parties: 251, 8, 5

② Share of revenue | The graph shows the donations from unknown sources ●, donations from known sources ● and income from other known sources such as sale of assets, membership fees ● as a share of total revenue in FY21

Almost half the total income of the regional parties was from unknown sources in FY21

National parties: 31.1, 43.2, 25.7
Regional parties: 49.7, 22.5, 27.8
All parties: 36.3, 37.4, 26.3

Sources of Income of National and Regional Parties for FY 2020-21				
Political Parties	Income from Unknown Sources (as per IT Returns) **	Income from Known Sources (donations details declared to ECI)	Income from Other Known Sources*	Total Income
National Parties	426.742	593.748	353.293	Rs 1373.783 cr
Percentage share	31.06%	43.22%	25.72%	100%
Regional Parties	263.928	119.395	147.38	Rs 530.703 cr
Percentage share	49.73%	22.50%	27.77%	100%
Grand Total	690.67	713.143	500.673	Rs 1904.486 cr
Percentage share	36.30%	37.40%	26.30%	100%

Issues with Electoral Funding

- **Lack of transparency:** Much of the election funding comes from unknown sources. This is a fundamental violation of the principles of transparency, as voters have a right to know whether funds are being raised through legitimate means. Electoral bonds also suffer from this gap, and citizens do not know who finances political parties.

- **Corruption and "regulatory capture"**: Activists say unknown "donors" include big corporate houses or corrupt local businessmen who fund local political leaders. This makes political leadership accessible to business interests. The current system tolerates lobbying and capture. Industry / private entities use the money to ensure less strict regulation, and the money used to fund elections ultimately leads to favorable policies.

- **No Limit on Funding:** Previously, there was a limit on how much funding a company could donate to a political party from the profits it made. This upper limit has been removed. This opened the way for companies to increase the financing of political parties and subsequently to increase their influence on the political system.

- **Lack of fairness:** Access to large financial resources translates into electoral advantage. Richer candidates and parties have a better chance of winning the elections. This distorts the level playing field. The Supreme Court also supported this view in **Kanwar Lal Gupta vs. Amar Nath Chawla.**

Way Forward and Solutions

- **First,** the funding process should be completely transparent. Funding and spending rules need to be tightened by setting an absolute ceiling for anonymous donations. The ADR report recommended that full details of all donors be made available for public scrutiny under RTI. Some of the countries where this is happening include Bhutan, Nepal, Germany, France, Italy, Brazil, Bulgaria, USA and Japan.

- **Second,** there should be an upper limit on the amount that can be donated to the parties (like the 7.5% profit limit set under the Companies Act 2013). This will limit the influence of big corporate houses.

- **Third,** election rules should be changed to regulate political advertising, establish allowable categories of spending, prevent foreign sources of donations, and establish a limited basis for public funding. The Law Commission of India in its 255th report recommended capping the entire donation received from anonymous sources at Rs. 20 million or 20% of the total funding of the political party.

- **Fourthly,** the ADR Report recommends that scrutiny of financial documents submitted by political parties should be conducted annually by a body approved by the CAG and ECI to increase transparency and accountability of political parties with respect to their funding.

- **Fifth,** the ECI recommended that tax exemption should be granted only to those political parties that contest and win seats in assembly elections. The commission also recommended that the details of all donors donating above INR 2,000 should be made public.

- **Sixth,** violations of transparency rules and provisions should be severely penalized. In this regard, the Electoral Commission must have more powers.

Global Scenario

- European countries such as France and Belgium have curtailed private spending on elections through a series of legislations since the 1990s, thereby successfully negating the influence of rich corporates in elections. France banned all forms of corporate funding in 1995 and capped individual donations at 6,000 Euros.
- Brazil and Chile have banned corporate donations after a series of corruption scandals emerged related to corporate funding.

Some Important Reports/Commission related to Electoral Reforms:

- Law Commission 170th Report (1999) 'Reform of the Electoral Laws'
- Law Commission 255th Report (2015) 'Electoral Reforms'
- Election Commission of India (2004) 'Proposed Electoral Reforms'
- The Goswami Committee on Electoral Reforms (1990)
- The Vohra Committee Report (1993)
- The Indrajit Gupta Committee on State Funding of Elections (1998)
- The National Commission to Review the Working of the Constitution (2001)

1.3 PRISION REFORMS

Why in News: National Crime Record Bureau (NCRB) has released Prison Statistics in India (PSI) Report, 2021.

PSI Report 2021

- PSI is one of the 3 annual flagship reports by the NCRB.
- It provides data like numbers and available capacity of different types of jails, strength and training of jail officials and prison budget and expenditure.

Key findings of the report

High Undertrials: Nearly 8 out of every 10 prisoners in Indian jails are awaiting trial. Uttar Pradesh jails record the highest number of undertrials followed by Bihar and Maharashtra.

Disadvantaged sections prisoners: 67.5% inmates belong to SC, ST and OBC communities. 80% of undertrials are from disadvantaged sections of society.

Understaffed: The sanctioned strength of jail-staff was 89,479 while the actual strength was 64,449 as due to vacancies not being filled up.

Budget & infrastructure: The sanctioned budget for the year 2021-22 has increased by 13.0% in comparison to the year 2020- 21.

Measures have been taken to improve the infrastructure of the prisons like construction and renovation of jails, quarters for jail staff, installing CCTV cameras, etc.

Prisons in India

- "Prisons"/"persons detained therein" are state affairs.
- The administration and management of prisons is the responsibility of the respective state governments. **It is governed by the Prisons Act, 1894 and the Prison Manuals of the respective State Governments.**
- Ministry of Home Affairs also provides regular guidelines and advice to states and UTs on various issues related to prisons and prisoners.
- The need for effective prison management
    - Prisons are an integral part of the criminal justice system (CJS), which deals with the prevention, investigation, prosecution, punishment and correction of crime.
    - Prisons are correctional institutions because prison administration has evolved from a retributive approach to the concept of correction and rehabilitation of offenders.
    - It is important to reintegrate prisoners into society after release as potential contributors to the economy.

Challenges in prison management

- **Overcrowding:** Overcrowded prisons adversely affect the hygiene, management, mental and physical health of inmates.
- **Inadequate legal aid:** Most of the prisoners who are in jails have not been tried, the absence of legal aid until trial greatly reduces the value of India's legal representation system for the poor.
- **Shortage of staff:** Prisons in half of the states and union territories were functioning with one-fourth vacancies at the end of last year.
    - 14 states have more than 40% of vacancies for healthcare personnel, including physicians, laboratory technicians, pharmacists and processors. Health care in prisons therefore remains of poor quality and difficult to access.
- **Torture/deaths in custody:** Another major problem in prisons in India is brutal physical treatment in custody by police officials.
    - According to the National Human Rights Commission (NHRC), in the last decade (2010-2020), an average of 5 people died in judicial custody per day.

- **Corruption:** Given the closed nature of incarceration and the inherent risk of insufficient public scrutiny, corruption among prison staff remains high.
    - Activities like trafficking of mobile phones, drugs or weapons inside the prison walls in exchange for bribes poses threats to national security also.
- **Vulnerability of women:** Most of the women inmates are illiterate who are arrested on petty charges and they are not aware about legal procedures. They also remain particularly vulnerable to custodial sexual abuse.

Way Ahead

All India Prison Service: The All-India Committee on Jail Reforms (1980– 1983), under **Justice A N Mulla** recommended establishing an **"Indian Prisons and Correctional Service"** as a professional career service with appropriate job requirements, sound training and proper promotional avenues.

Adherence of Model Prison Manual 2016 by all the States and UTs: The manual aims at bringing in basic uniformity in laws, rules and regulations governing the administration of prisons and the management of prisoners all over the country.

Prison Infrastructure: Technological up-gradations such as biometric identification facilities, prisoner information system, provision of CCTVs, video conferencing facilities along with critical infrastructure such as hospital, sanitation systems are needed.

Reducing undertrials:

- **Timely and complete production** of under trials before the court so that a trial is not prolonged. Introducing the system of plea bargaining which refers to negotiation where the accused agrees to plead guilty in exchange for certain concessions by the prosecution.
- **Capacity building** in lower judiciary to reduce the number of adjournments while hearing bail pleas.
- **Proper prison inspection:** Regular and timely inspection from judicial officers must be conducted. Lok Adalat could be involved for constant monitoring of prisons to identify inadequacies and shortcomings in the prison administration.

Improving investigation methodologies: The currently applied methods use torture as a tool for investigation which can be altered by giving a priority to Human Rights.

This can be done through ratification of the 1987 UN Convention Against Torture as well as enactment the anti-torture bill proposed by the legal advisory body of the government.

➢ **Live Streaming of Constitution Bench**

• Supreme Court (SC) will Live Stream Constitution Bench Hearings from September 27

• In 2021, SC's e-Committee, came out with model rules for live-streaming and recording of court proceedings in India.

  ▪ Earlier, in 2018 (Swapnil Tripathy vs. Supreme Court), the Supreme Court declared live telecast of court proceedings part of the right to access justice under Article 21 of the Constitution.

  ▪ Currently, six high courts, namely Gujarat, Orissa, Karnataka, Jharkhand, Patna, and Madhya Pradesh, live-stream court proceedings through their channel on YouTube.

  ▪ Live-streaming of SC proceedings is part of third phase of e-courts project, an initiative to implement use of information and technology in judiciary.

Challenges and Issues

  ▪ Lack of Information and Communication Technology (ICT) infrastructure. E.g. use YouTube instead of their own platform.

  ▪ Lack of trained manpower and Digital Divide in India.

  ▪ High Data Security and privacy requirements to ensure safety of victims and witnesses.

  ▪ Risk of sensationalism by the media and greater influence of public opinion on judges.

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 UN TREATY ON HIGH SEAS

Why in News: Delegates from 168 countries were involved in negotiating a legally binding treaty to conserve biodiversity in the high seas or the areas beyond national jurisdiction. However, no consensus was reached as the negotiations ended on August 26.

- Environmental campaigners have called it a "missed opportunity". The UN Treaty on High Seas is being considered crucial to protect the marine biodiversity amidst rising threats due to anthropogenic activities.
- It is expected that the treaty will also help mitigate the impact of climate change on oceans. At present, only 1.2% of international waters fall under protected areas.
- In June 2022, the UN Secretary General had declared an "Ocean Emergency" at the UN Ocean Conference in the backdrop of alarming rate of extinction of marine species.

UN Convention on the Law of the Sea (UNCLOS)

- **The United Nations Convention on the Law of the Sea (UNCLOS)** lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.
- **The convention was signed in 1982 and at present it has 168 parties.** The 1982 Convention was build on the works of earlier UNCLOS I held in 1956 at Geneva.
- **It had resulted in signing of 4 treaties:**
  - Convention on the Territorial Sea and Contiguous Zone;
  - Convention on the Continental Shelf;
  - Convention on the High Seas;
 - Convention on Fishing and Conservation of Living Resources of the High Seas.

However, the 1956 Convention couldn't decide on the issue of breadth of territorial waters, different countries had adopted different limits (3 mile to more than 12 miles).

The 1982 Convention settled the issue with comprehensive coverage of number of associated aspects like setting limits, navigation, archipelagic status and transit regimes, exclusive economic zones (EEZs), continental shelf jurisdiction, deep seabed mining, the exploitation regime, protection of the marine environment, scientific research, and settlement of disputes.

The convention set the limit of various areas which include:

- **Internal Waters:** Covers all water and waterways on the landward side of the baseline. The State is free to set laws, regulate use, and use any resource. Foreign vessels have no right of passage within internal waters.

- **Territorial Waters:** Extend up to 12 nautical miles (22 kilometers; 14 miles) from the baseline, the coastal state is free to set laws, regulate use, and use any resource. Vessels have the right of innocent passage through any territorial waters (Passage is not prejudicial to the peace or security of the coastal State, Fishing, polluting, weapons practice, and spying are not innocent).

- **Contiguous Zone:** Extends further 12 nautical miles beyond the territorial waters. The state can enforce laws in four specific areas – customs, taxation, immigration, and pollution. Exclusive

- **Economic Zones (EEZs):** EEZs extent up to 200 nautical miles (370 km; 230 mi) from the baseline. Within this area, the coastal nation has sole exploitation rights over all natural resources. There is no formal definition of International Waters or High Seas in international law, but seas beyond EEZ are called as High Seas.
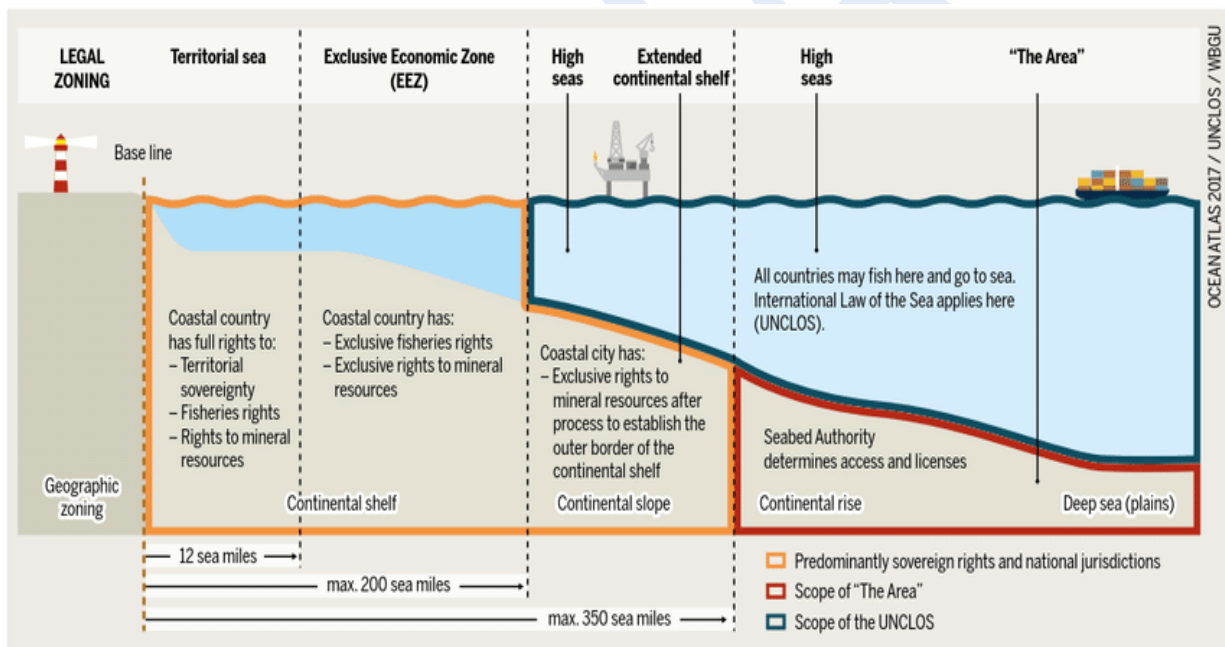
The UCNLOS helped in creation of regulating authorities;

(a) The International Tribunal for the Law of the Sea;

(b) The Commission on the Limits of the Continental Shelf;

(c) The International Seabed Authority.

It has also outlined general responsibilities towards limiting marine pollution and preserving marine resources.

UN Treaty on the High Seas-Paris Agreement for the Ocean

- **The treaty is being referred to as the 'Paris Agreement for the Ocean'. It is being negotiated under the UNCLOS.**
- In 2015, the United Nations General Assembly (UNGA) had passed a resolution to develop an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.
- In 2017, the UNGA, decided to convene an intergovernmental conference (IGC), with a view to develop the instrument as soon as possible. The negotiations have been going on since 2018 through a series of intergovernmental conferences.
- **The new treaty will establish a global framework to conserve and manage biodiversity of the High Seas.** High seas constitute 65% of surface and 95% of volume of oceans.
- The treaty is focused on key areas:
  - The conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (BBNJ)
  - Marine Genetic Resources (MGRs: biological material from plants and animals in the ocean that can have benefits for society, such as pharmaceuticals, industrial processes and food), including questions on benefit-sharing
  - Area Based Management Tools (ABMT), including Marine Protected Areas (MPAs)
  - Environmental Impact Assessments (EIA)
  - Capacity-building and the Transfer of Marine Technology (CB&TMT) (ensuring less-industrialized countries can meet treaty objectives through a mechanism for sharing marine technology and knowledge)

Need for the Treaty on High Seas

- Part XII of UNCLOS (1982) contains special provisions for the protection of the marine environment. However, there are many governance gaps and shortcomings that do not address contemporary challenges e.g., there is no comprehensive, agreed-upon framework governing resource extraction or conservation in the international waters (high seas).
- The oceans are facing several challenges:
  - Technological advances enabling greater access to high seas resources are exposing marine ecosystems to severe impacts from fisheries and other extractive industries;
  - Marine life living outside of the 1.2% of protected areas are at risk of exploitation from the increasing threats of climate change, acidification, overfishing and shipping traffic;
  - Chemical, noise and plastic pollution is rising unabated in the seas;
  - According to NASA, 90% of global warming is occurring in the oceans.

- The greatest threat is to the marine biodiversity. According to a study commissioned by the National Oceanic and Atmospheric Administration, between 10% and 15% of marine species are already at risk of extinction. Sharks and rays are among the species set to lose out from the failure to pass the treaty.
- According to the IUCN they are facing a global extinction crisis – and are one of the most threatened species groups in the world. Many migratory species such as turtles and whales move through the world's oceans interacting with human activities like shipping which can cause them severe injuries and death.

2.2   INDIA-JAPAN

Why in News: **2+2 Ministerial meeting between the Ministers of Defense and Foreign Affairs of India and Japan was recently held in Tokyo, Japan.**

- In a joint statement issued after the meeting, both India and Japan recognized the need for global cooperation in addressing acute security issues and reaffirmed their commitment to a rules-based global order that respects sovereignty and territorial integrity of nations. In recent years, the relationship between India and Japan has been steadily expanding and deepened.
- Both India and Japan share a global vision of peace, stability and prosperity, based on sustainable development. They also share democratic values and commitment human rights, pluralism, open society and the rule of law are the basis of global partnership between the two countries

Background

- India and Japan have had a close historical relationship since ancient times. I**t is said that exchanges began in the 6th century when Buddhism was introduced to Japan.**
- Indian culture has had a significant impact on Japanese culture through the influence of Buddhism. At various stages of history, the two countries have never been hostile since contact began.
- After World War II, India and Japan signed her April 1952 peace treaty and established diplomatic relations. This treaty was one of the first peace treaties signed by Japan after World War II.
- **Relations between India and Japan have traditionally been strong, especially since India launched its "Look East" policy in her 1990s.** Japan was one of the few countries that rescued India from its balance of payments crisis.

- **In 2006, India-Japan relations were upgraded to a 'Global and Strategic Partnership'.** Our strong bilateral trade and aid ties extend to security-based ties. Since the visits of Their Majesties the Emperor and Empress of Japan in 2013 and Prime Minister Shinzo Abe in January 2014, bilateral relations have continued with renewed vigor. This relationship was further upgraded to a 'Special Strategic Global Partnership' in September 2014.
- Both India and Japan want to increase their presence in the Asia-Pacific region with the United States. Concerns about China's intentions in the region have prompted increased trilateral cooperation, but neither country wants to threaten China with an evolving partnership adjustments could benefit the entire Asia-Pacific region.

Areas of Cooperation

Strategic and Defence Cooperation

- The Joint declaration on security Cooperation among India and Japan become issued in October 2008. There also are various frameworks of protection and protection communicate between Japan and India inclusive of foreign and protection Ministerial meeting ('2+2' assembly), annual defense Ministerial talk and Coast defend-to-Coast protect speak the first '2+2' meeting changed into held in November 2019.
- In September 2020, the settlement concerning Reciprocal Provision of elements and services (RPSS) among the Self-protection Forces of Japan and the Indian defense force turned into signed ('Acquisition and pass-Servicing settlement' or ACSA).
- ACSA allows mutual logistics aid, along with lodging and food, at some stage in joint physical games and schooling. India is one in every of five international locations with which Japan has an ACSA, in conjunction with Australia, Canada, the United Kingdom and the USA. ACSA has enabled extended maritime security cooperation within the Indo-Pacific place.
- Indian and Japanese forces regularly preserve joint sporting activities like Shinyuu Maitri (Air force), Dharma father or mother (military), JIMEX (military), Sahyog-Kaijin (Coast shield) and Malabar (military, multilateral).
- Both India and Japan aid every different's candidature for everlasting club in UN protection Council's growth. Japan supported India's inclusion to Missile era control Regime and India joined the group in 2016. Strategic and Defence cooperation is a key measurement of India Japan Relationship.

Trade

- India and Japan signed complete economic Partnership agreement in 2011. The economic cooperation has made a rapid development on account that 2014.
- Japan is regarded as a key companion in India's monetary transformation. Japan's hobby in India is growing due to reasons like India's big and growing marketplace and its assets.
- India Japan bilateral alternate stood at US$ 13.7 billion in 2020, with Indian exports well worth US$ 4.3 billion and imports worth US$ 9.four billion.
- India's primary exports to Japan were petroleum merchandise, chemical substances, non-steel mineral ware, fish & fish preparations, metalliferous ores & scrap, apparel & add-ons, iron & metal products, and equipment and many others.
- India's number one imports from Japan are equipment, electric equipment, iron and metal merchandise, plastic substances, non-ferrous metals, components of motor cars, organic chemical compounds, manufactures of metals, and so forth.

Investments and improvement assistance

- Between 2000-2019, Japan has invested ~US$ 32 billion. It now ranks 3rd amongst most important traders in India. Eastern FDI into India has specially been in automobile, electric device, telecommunications, chemical, monetary (insurance) and pharmaceutical sectors.
- Japan is the largest bilateral donor for India. Japan ODA (overseas development assistance) supports India's efforts for multiplied economic development specifically in priority areas like energy, transportation, environmental tasks and tasks related to simple human desires. several excessive-profile infrastructure initiatives vital for India's economic transformation just like the Mumbai-Ahmedabad excessive speed Rail, the Western devoted Freight corridor (DFC), the Delhi-Mumbai commercial corridor with 12 business townships, the Chennai-Bengaluru business hall (CBIC) are being supported via Japanese help.

Virtual Partnerships and start-ups

- 'India-Japan virtual Partnership'(I-JDP) changed into released in October 2018. In can also 2018, each nations signed the Joint statement on Japan-India Startup Initiative putting in place the first Startup Hub in Bangalore.
- Collaboration in start-America has emerged as a colorful component below this Partnership till date Indian begin-USA have raised greater than US$ 10 billion from eastern project Capitalists (Softbank being the largest investor).

Science and generation

- The bilateral science & era Cooperation settlement changed into signed in 1985 and it underpins the bilateral S&T cooperation.

- **The India-Japan technology Council (IJSC) was set up in 1993**. It has so far supported 250 joint initiatives. several Institutional Agreements/ MoUs in the areas of existence sciences, material sciences, high power physics, ICT, biotechnology, healthcare, methane hydrate, robotics, alternative assets of energy, earth sciences, outer space and so forth were signed between the technology businesses of both countries.
- The India-Japan agreement for Cooperation within the nonviolent uses of Nuclear power got here into pressure in 2017.
- Both international locations additionally have cooperation in the discipline of ICT, in regions which include 5G, telecom protection, submarine fiber optic cables, clever-metropolis technology and many others.
- Era cooperation has additionally elevated thru the Quad and supplied a brand new measurement to India Japan courting. Quad has hooked up a vital and emerging generation running organization, focused on era concepts, requirements improvement, telecommunications, monitoring of generation trends, and essential era deliver chains.

Issues and Challenges

- **Japan has a strained relationship with Russia.** India continues to pursue its strategy of '**multi-alignment' and 'strategic autonomy', balancing relations between the West and Russia.** India remains heavily reliant on Moscow for the support of key capabilities in its armed forces. By contrast, Japan's interest lies in taking a united position against Russia to defend the rules-based order.
- The response of India and Japan to Russia's invasion in Ukraine is also in stark contrast. **Japan also objected to Russia's holding of maritime component of Vostok-2022 exercises near Kuril Islands. India has participated in Vostok exercises.**
- Despite expansion in economic ties, the trade between India and Japan is limited and far below potential. Japan barely makes to India's top 15 trading partners. India-Japan bilateral trade is less than one-fifth of India-China trade.
- On multiple global issues (especially issues related to developing v/s developed nations gap) India and Japan end up on opposite sides. These include trade related aspects at the WTO like India's tariff structure on imports.
- **The Asia Africa Growth corridor has not achieved much so far**. The joint infrastructure projects in Africa has remained limited in outcomes. Similarly, Japanese companies face considerable logistics challenges in their projects in India.

Conlcusion

India and Japan are great democracies and aim at the ideals of a value-based order. The need to form the rules-based order was needed to tackle Chinese assertiveness and expansionism in the Indo-Pacific region. Further, India and Japan aim to form a new security architecture which mainly covers maritime security and cooperation. Therefore the deepening of India Japan relationship is not only important for the two countries, but also for the Indo-Pacific region and will encourage peace, prosperity and stability for the world. It is time to consolidate this shared heritage and to cooperate for a better and more prosperous tomorrow.

2.3 SCO

Why in News: The 22nd summit of the Shanghai Cooperation Organization (SCO) concluded recently in Samarkand, Uzbekistan.

- At the end of the summit, member nations signed the Samarkand Declaration, which identified the areas of cooperation to strengthen security and development. In the last 2 decades, the SCO has emerged as a key organization in the Eurasian region.
- The Organization assumes more importance for India as it gears up for Presidency next year and hosting the summit in 2023. India's presidency of the SCO shows its new multi-alignment policy; wherein it is delicately balancing membership of SCO (China-Russia led group) with Quad (US-led group). However, as the Russia-Ukraine war prolongs, it presents a new challenge to India's diplomacy to balance its relationship with both the West and China/Russia led groups.

SCO

- **The Shanghai Cooperation organization (SCO) was formed in June 2001. It had its origins in Shanghai 5 that became set up in 1996. Shanghai five, having China, Kazakhstan, Kyrgyzstan,** Russia and Tajikistan as members, had emerged from a series of border demarcation and demilitarization talks which the 4 former Soviet republics held with China to ensure balance along the borders. In 2001, Uzbekistan also joined and the organization was rechristened because the Shanghai Cooperation enterprise (SCO).
- **Members:** The SCO has eight members as of September 2022 these are, India, China, Russia, Kazakhstan, Pakistan, Uzbekistan, Tajikistan, and Kyrgyzstan. India and Pakistan had joined in 2017. Afghanistan, Belarus, Iran and Mongolia have the popularity of Observers.
- Iran will be part of as complete member in 2023. Similarly, Armenia, Azerbaijan, Cambodia, Egypt, Nepal, Qatar, Saudi Arabia, Sri Lanka and Turkey are speak partners. Individuals of the SCO account for ~40% of the arena's populace and ~30% of global Gross home Product (GDP).

- **Water Disputes South Asian water problems** may become a source of future intra and inter-state conflict unless an effective and supportive mechanism is developed soon.

Key highlights of the meeting

- Samarkand declaration was adopted:
    - **The Samarkand declaration advocated "commitment to peaceful settlement of differences and disputes between countries through dialogue and consultation".**
    - They stress that the principles of mutual respect for sovereignty, independence, territorial integrity of States, equality, mutual benefit, non- interference in internal affairs, and non-use or threat of use of force are the basis for sustainable development of international relations.
    - The member countries are planning to develop common principles and approaches to form a unified list of terrorists, separatist and extremist organizations whose activities are prohibited on the territories of the SCO member states.
- SCO Presidency was handed over to India and India will host the SCO 2023 summit.
- **Varanasi, was declared as the SCO Tourism and Cultural Capital for 2022- 2023 to promote the rich heritage and the tourism potential of SCO member states.**
- Iran was accepted as a permanent member of the SCO.
- India's take in the Summit:
    - **Food Security:** India emphasized the initiative to promote millets and address issues related to food security.
    - **Traditional Medicine:** India to take initiative for new SCO working group on traditional medicines.

India' Importance for SCO:

- **Calling for effective action to address cross-border security issues:** SCO will launch multilateral and regional counter-terrorism initiatives to provide India with an opportunity to combat illicit drug trafficking.
- **The Regional Anti-Terrorist Structure (RATS) is the SCO's** permanent body, designed to facilitate coordination and interaction among SCO Member States in the fight against terrorism, extremism and separatism.
- **Cross-Border Connectivity:** SCO is a potential platform for advancing India's Connect Central Asia policy and formulating an appropriate Eurasian strategy.
- India may pursue the Chabahar Port project and the International North-South Transport Corridor (INSTC).

- **Leverage other bilateral ties:** India could also leverage its established bilateral ties with Russia, Iran and the Central Asian Republic (CAR) to strengthen its role within the forum increase.
- It also provides a platform to manage relations with China.
- **Stabilizing Afghanistan:** SCO member States expressed their support for Afghanistan as an independent State, free of terrorism, war and drugs which will benefit India.
- **Increase India's share in regional trade:** Central Asian Region is rich in iron-ore, coal, oil, gas, uranium etc. Frequent meeting of leaders and the India-Central Asia Business Council under the SCO would give fillip to the economic cooperation.
- **Energy Cooperation:** SCO can unblock India's access to Eurasia and provide a fillip to projects like Turkmenistan Afghanistan-Pakistan-India (TAPI) pipeline.

Challenges with SCO

- **Internal Struggles:** Bilateral Relationships of many SCO members are strained. Recent clashes on Kyrgyzstan and Tajikistan border has led to deaths of more than 100 people. Kyrgyzstan also has a border dispute with Uzbekistan although it is closer to resolution. The relationship of India and China is also at a historic low due to the border dispute and increasing Chinese presence in India's neighborhood.
- Although Russia and China seem to be united against the West, Russia is vary of growing Chinese presence in Central Asia. Russia considers Central Asia as its own backyard (former Soviet Republics). Russia still retains the military lead in the region through the CSTO (Collective Security Treaty Organisation), but China might soon displace Russia as security provider subsequent to the greater economic integration with the region.
- **Connectivity:** The connectivity has remained poor, especially between India and the other SCO members. Pakistan has blocked all efforts to enhance connectivity with India. China has benefited the most, as all Central Asian nations have joined the Belt Road Initiative.
- **Terrorism:** India has long held Pakistan as a State sponsor of terrorism. The presence of Pakistan, which is under grey list of FATF, severely limits the ability of the SCO to cooperate on the counter-terrorism front. The role of China is also dubious have repeatedly blocked the resolutions of India/US to blacklist Pakistan-based terrorists.
- **Dominant position of China:** Barring India, the Belt and Road Initiative (BRI) of China has been endorsed by all the members.
- China's belligerent approach and border disputes with India further complicate India's position in the SCO. India-Pakistan Rivalry and the growing China-Pakistan relations: China is Pakistan's 'all weather friend' and supports Pakistan to maintain the balance of power in South Asia.

- **Growing strategic proximity between Russia and China**: Amid Ukraine conflict, Russia may continue to seek a closer partnership with China in the face of increasing hostilities between Russia and the West.
- **Weak decision making:** The rich diversity in members' history, backgrounds, language, national interests and forms of government, wealth and culture make the SCO decision making process challenging. SCO has not taken any visible counterterrorism measures against threats emanating from Afg-Pak region.
- **Differences over definition of terrorism:** India's definition of terrorism is different to the definition of SCO under RATS. For SCO, terrorism coincides with regime destabilization; whereas for India it is related to state sponsored cross border terrorism.

Conclusion

SCO is a platform which serve India's regional interests to ensure nation-building through development partnerships, maintaining sovereignty, preventing the region from terrorism and extremism. The organization has great potential to create a multi-polar, multi-aligned global order. India should enhance its active engagement with the Central Asian Nations to secure its geopolitical interests as well as counter Chinese influence in the region.

Member states of the Shanghai Cooperation Organisation

RUSSIAN FEDERATION
Capital: Moscow
Language: Russian
Currency: Russian rouble
President: Vladimir Putin

REPUBLIC OF KAZAKHSTAN
Capital: Nur-Sultan
Language: Kazakh
Currency: Tenge
President: Kassym-Zhomart Tokayev

KYRGYZ REPUBLIC
Capital: Bishkek
Language: Kyrgyz
Currency: Kyrgyzstani som
President: Sooronbai Jeenbekov

REPUBLIC OF UZBEKISTAN
Capital: Tashkent
Language: Uzbek
Currency: So'm
President: Shavkat Mirziyoyev

REPUBLIC OF TAJIKISTAN
Capital: Dushanbe
Language: Tajik
Currency: Somoni
President: Emomali Rakhmon

REPUBLIC OF INDIA
Capital: New Delhi
Language: Hindi
Currency: Indian rupee
President: Shri Ram Nath Kovind

PEOPLE'S REPUBLIC OF CHINA
Capital: Beijing
Language: Chinese
Currency: Chinese yuan
President: Xi Jinping

ISLAMIC REPUBLIC OF PAKISTAN
Capital: Islamabad
Language: Urdu
Currency: Pakistani rupee
President: Arif Alvi

2.4 INDIA-SAUDI ARABIA

Why in News: The Foreign Minister recently visited Saudi Arabia for the first time.

Highlights

- India started talks with Saudi Arabia on rupee riyal trade.
- The two countries agreed to cooperate on joint projects, including West Coast refineries, LNG infrastructure and strategic petroleum deposits.
- A Memorandum of Understanding on Consultation Mechanism between India and the Gulf Cooperation Council (GCC) was signed to institutionalize an annual dialogue between India and the GCC.

Importance of India-Saudi Arabia Relations

- **Geopolitical Allies:** Saudi Arabia's strategic position in West Asia and political and economic power it leverages along with the world's oil reserves Critical to policy priorities.
- **Major Trade and Investment Partners:** Saudi Arabia is India's fourth largest trading partner $42.86 billion in bilateral trade in FY22 important to India
- **Securing India's energy needs:** Saudi Arabia Arabia is India's major hydrocarbon supplier, supplying 18% and 30% of India's crude and LPG requirements respectively. For India's traditional oil suppliers like it is essential for India to have alternative suppliers.
- **Home of the Overseas Indian Community:** The Kingdom has over 2.8 million Indian expatriates, making valuable overseas remittances.
- **Working together in difficult times:** During the COVID pandemic, the two countries have shared their domestic experiences and helped each other to ensure the continued flow of food, medicine and other essential goods.
- **A fusion of cultures:** Saudi Arabia has the holy cities of Mecca and Medina, and thousands of Indians visit her for pilgrimage and Umrah pilgrimage every year.
- **Counter-terrorism cooperation:** The Saudi government has regularly assisted India in arresting her key terrorist suspects. In 2012, Saudi Arabia helped India arrest an alleged 2008 attack in Mumbai.

Challenges

Relationship Challenges

Regional instability: Complex and multidimensional politics of the Middle East a region involving the rivalry of Saudi Arabia and Iran, US-Iran enmity and the Palestinian issue make this possible. It is difficult for India to balance relations with Iran.

Inordinate Delays in Saudi Investments in India: Aramco's plans to purchase a 20-percent stake in Reliance Industries was called off and its involvement in the Ratnagiri integrated refinery and petrochemicals complex project was stalled

• **Oil-related issues:** OPEC countries, where Saudi Arabia is the de facto leader, charge Asian premiums (extra fee) from Asian countries when selling oil compared to Western countries.

Prelims Highlights

Why in News: Recently, Russia hosted the 7th Eastern Economic Forum (EEF) at Vladivostok. The forum is a platform for entrepreneurs to expand their businesses into Russia's Far East (RFE).

Eastern Economic Forum

- The EEF was established in 2015 to encourage foreign investments in the RFE.
- The EEF displays the economic potential, suitable business conditions and investment opportunities in the region.
- Agreements signed at the EEF increased from 217 in 2017 to 380 agreements in 2021, worth 3.6 trillion roubles.
- The agreements focus on infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.

Key Players:

- China, South Korea, Japan and India are the Key Players in the region, where China is the biggest investor.
- China who sees potential in promoting the Chinese Belt and Road Initiative (BRI) and the Polar Sea Route in the RFE.
- China's investments in the region account for 90% of the total investments.

Objectives:

(a) Russia has strategically developed the region with the aim of connecting Russia to the Asian trading routes.
(b) With the fast modernisation of cities like Vladivostok, Khabarovsk, Ulan-Ude, Chita and more, Russia aims to attract more investments in the region.
(c) To survive the economic crisis and the sanctions with the help of China and other Asian powers.

➢ **Financial Intermediary Fund (FIF)**

Why in News: A new FIF for pandemic prevention, preparedness, and response (PPR) has been established internationally, with financial commitments from multiple countries including India.

Hosted by World Bank and with technical support from WHO, FIF will:

- Provide long-term financing to strengthen PPR capabilities in low- and middle-income countries.
- Address critical gaps at national, regional, and global levels.
- FIF will help in strengthening PPR capacity in areas such as zoonotic disease surveillance, laboratories, emergency communication, critical health workforce capacities etc.

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 INS VIKRANT

Why in News: Recently, the Prime Minister of India commissioned India's first indigenous aircraft carrier Indian Naval Ship (INS) Vikrant in Kochi. Currently, India has two aircraft carriers (INS Vikramaditya (from Russia) & INS Vikrant (present one).

The Prime Minister also unveiled the new Naval Ensign 'Nishaan' during the commissioning of the indigenous aircraft carrier INS Vikrant.

Naval Ensigns are flagging that naval ships or formations bear to denote nationality. The current Indian Naval Ensign consists of a St. George's Cross -- a red cross with a white background.

Origin: The name 'INS Vikrant' originally belonged to India's first aircraft carrier which was acquired from the UK, and played a vital role in the 1971 War with Pakistan before it was decommissioned in 1997.

Design & Development: By the Indian Navy's in-house Warship Design Bureau (WDB) and built by Cochin Shipyard Limited, a Public Sector Shipyard under the Ministry of Ports, Shipping &

Waterways. It has been built with state-of-the-art automation features and is the largest ship ever built-in maritime history of India.

Operational capability: The ship is capable of operating an air wing consisting of 30 aircraft comprising MiG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, in addition to indigenously manufactured Advanced Light Helicopters (ALH) and Light Combat Aircraft (LCA) (Navy).

- The ship can accommodate an assortment of fixed-wing and rotary aircraft.
- The warship will also offer an "incomparable military instrument with its ability to project Air Power over long distances, including offensive, Air Interdiction, Anti-Surface Warfare, defensive Counter-Air, Airborne Anti-Submarine Warfare and Airborne Early Warning.

Significance of an aircraft carrier

- **Self-Reliance:** The new aircraft carrier provides a significant boost to self- reliance campaign in defense manufacturing.
- **With the commissioning, India has joined the elite group of nations (US, Russia, France, the UK and China) having capability to indigenously design and build an Aircraft Carrier.**
- **Guarding Two Fronts:** The two aircraft carriers can be deployed, one in East Coast (BOB & Malacca Strait) & 2nd one for west Coast (Arabian Sea, Pak Coast & West Asia). Naval forces can use this for dispensing humanitarian relief & disaster relief (in peacetime)
- **Enhance capability:** Such warships enhance the Navy's capability to travel far and carry out domination operations including Air Interdiction, Anti-Surface Warfare etc. It gives the Indian Navy extraordinary reach from its coastline.
- **Net Security provider:** It is important amid India's bid to be a net security provider in the Indian Ocean region where it faces China, whose navy, too, is heavily focusing on aircraft carriers and has already inducted two vessels.

India's first indigenously-built aircraft carrier

INS Vikrant catapults India into a select group of nations capable of building aircraft carriers at a time when Delhi seeks to counter increased Chinese presence in the Indian Ocean
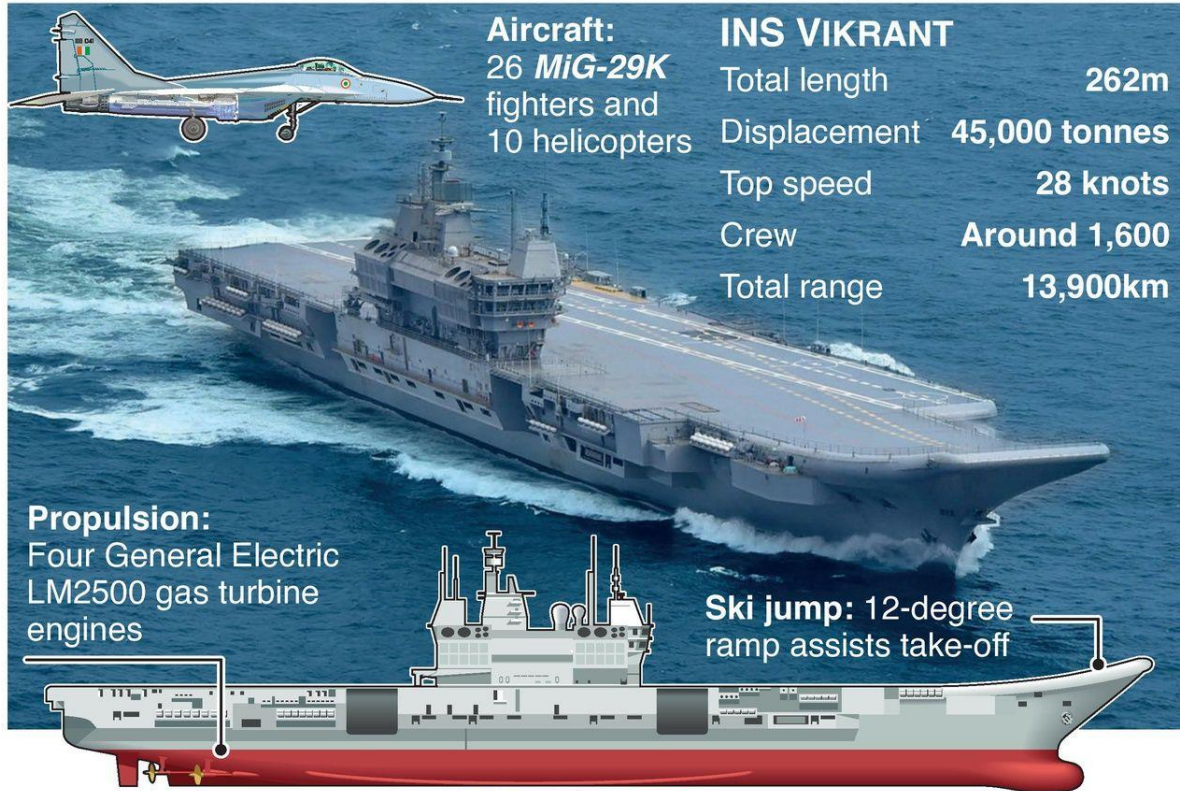
Aircraft:
26 *MiG-29K* fighters and 10 helicopters

INS VIKRANT

Total length	262m
Displacement	45,000 tonnes
Top speed	28 knots
Crew	Around 1,600
Total range	13,900km

Propulsion:
Four General Electric LM2500 gas turbine engines

Ski jump: 12-degree ramp assists take-off

INDIA-CHINA CARRIER COMPARISON

INS Vikramaditya
Commissioned in 2013
India's first aircraft carrier built using modified Kiev-class carrier purchased from Russia

Displacement:
45,000 tonnes

INS Vikrant
India's first indigenously-built aircraft carrier

45,000 tonnes

Liaoning 2012
China's first carrier built using Soviet-era hull

66,000 tonnes

Type 001A *Shandong* 2019
First indigenously-built aircraft carrier

70,000 tonnes

Type 003 *Fujian* 2022. Indigenously-built, features full-length flight deck with catapult launch system

85,000 tonnes

Sources: Indian Navy, Navy Recognition   Picture: Cochin Shipyard Limited   © GRAPHIC NEWS

3.2 Chief of the Defence Staff (CDS)

Why in News: The Government of India has appointed Lt Gen Anil Chauhan (Retd) as the next Chief of Defense Staff (CDS). He will also serve as Secretary of the Department of Military Affairs.

Chief of defense staff (CDS)

Genesis: The CDS was created in 2019 for a dual role, as the highest ranking uniformed officer (first among equals) and as Secretary of the Ministry of Military Affairs.

Role: Act as the chief military advisor to the government.

- To create cohesion among the armed forces.
- Facilitate the creation of integrated theater commands.
- Assist in prioritizing capital acquisition for force modernization.
- Work done by CDS since its inception
- The last CDS directed commissioned officers at the commander-in-chief level in each of the services to report on the possible structure of integrated command units.

Roles and Responsibilities: His core function will be to foster greater operational synergy between the three service branches of the Indian military and keep inter-service frictions to a minimum.

- He also heads the newly created Department of Military Affairs (DMA) in the Ministry of Defence.
- The CDS will be the single-point military adviser to the Defence Minister on matters involving all three services and the service chiefs will be obliged to confine their counsel to issues pertaining to their respective services.
- The CDS is also vested with the authority to provide directives to the three chiefs. However, he does not enjoy any command authority over any of the forces.
- CDS is first among equals, he enjoys the rank of Secretary within the DoD (Department of Defence) and his powers will be confined to only the revenue budget.
- He will also perform an advisory role in the Nuclear Command Authority (NCA).

Significance:

Synergy between Armed forces and Government: CDS' role is not simply about tri-service (Army, Navy and Indian Air Force) cooperation, it is equally about fostering better cooperation between the Ministry of Defense bureaucracy and the Armed services.

Since 1947, there have been three Service Headquarters (SHQ) designated as "Attached Offices" of the Department of Defense (DOD). Due to this, communication between SHQ and DoD takes place largely through the medium of files. With the creation of CDS as Principal Military Adviser (PMA) to Defense Minister, the process of decision-making will be accelerated.

Jointness in operations: The Chiefs of Staff Committee-COSC (predecessor of CDS), has been dysfunctional because its chairmanship is held by one of the three chiefs on a part-time rotational basis. Historically, the chairman COSC lacked the authority as well as capacity and inclination to tackle tri-service issues of substance.

With the CDS now being designated as "permanent chairman of COSC", he will be able to devote undivided attention to the administration of tri-service organisations.

Operationalisation of Theatre Command: Creation of DMA will facilitate the operationalisation of joint/theatre command.

- Although a successful template for joint operations was created in the Andaman & Nicobar Command, the lack of political direction and indifference of the COSC has led to inactivity of this joint command.
- Theatre commands would need staff with the knowledge and experience to deploy land, maritime and air forces. Given the disruptive impact of each of these measures, they would best be implemented by the CDS.
- CDS as a key functionary in the nuclear command chain will also administer the Strategic Forces Command.

Theater Commands: According to reports submitted, four to five integrated theater commands are envisaged:

- One for air defense.
- One naval defense.
- Two Land Theater Commands for Western Frontier (Pakistan) and Northern Frontier (China).
- Or another integrated command comprising the area under the command of the Northern Army currently on the border with Pakistan and China in UT J&K and Ladakh.

➢ **Synergy**

- Recently, the Indian Computer Emergency Response Team (CERT-In) hosted 'Synergy'- a cyber-security exercise in collaboration with Cyber Security Agency of Singapore.
- 13 countries participated in it.
- It was conducted as part of the International Counter Ransomware Initiative- Resilience Working Group, led under the leadership of National Security Council Secretariat (NSCS).
- It aims to accelerate cooperation to counter ransomware.
- Ransomware is a malware designed to deny access to system or files on the user computer through encryption and demanding a ransom payment for the decryption key.

➢ **Military Exercises**

- **Exercise Vostok – 2022:** Indian Army contingent will be participating in multilateral strategic and command Exercise Vostok – 2022.
- **Exercise Kakadu:** It is Australia's naval exercise hosted biennially. Navies of more than 14 countries (including India) participated in this exercise recently.
- **Exercise JIMEX 22:** It is a Japan India Maritime Exercise.
- **Exercise Parvat Prahar:** Exercise showcased prowess of Indian Army to carry out operations in high-altitude Mountains of Ladakh sector.

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 NATIONAL LOGISTICS POLICY

Why in News: Recently, the Government has launched a **National Logistics Policy (NLP) 2022, aiming to achieve 'quick last-mile delivery', end transport-related challenges.**

Logistics

- Logistics encompasses planning, coordinating, storing, and moving resources —people, raw materials, inventory, equipment, etc., from one location to another, from the production points to consumption, distribution, or other production points.
- The term "logistics" describes the total process of controlling the acquisition, storage, and delivery of resources to their intended location.
- It entails locating potential distributors and suppliers and evaluating the viability and accessibility of such parties.
- The Indian logistics sector is estimated to be over 250 billion dollars in 2021 and is expected to reach 380 dollars billion by 2025.
- To Improve infrastructure and logistics services, the government has taken several initiatives systematic infrastructure development for improved efficiency, e.g.
  - PM Gati Shakti
  - National Railway Plan
  - Logistics Ease Across States (LEADS) Index

Need for Logistics Policy and Logistic Sector in India

- **India's logistics sector is highly defragmented and India's logistics costs are high compared to other developed countries, estimated at around 14% of its GDP.**
- The regulatory environment is complex due to the many regulations that govern different stakeholders. For example, there are more than 20 government agencies; 37 export promotion councils; 500 certifications; 200 shipping agencies; 36 logistics services; 129 inland container warehouses and 168 container freight stations.
- **India's logistics market is estimated to be worth around $215 billion in the next two years, compared to $160 billion in 2022.**
- Investment Information and Credit Rating Agency of India Limited (ICRA) estimates that the sector will grow at a compound annual growth rate (CAGR) of 10.5 percent by 2025, after growing at 7.8 percent over the past five years.
- **The sector employs more than 22 million people in India and is expected to grow by 5 percent over 5 years due to skill development.**

- Technology adoption rates are low among various stakeholders. Logistics costs are compounded by high indirect costs caused by erratic supply chains and subpar first- and last-mile connectivity.
- **New Logistics Policy**

The new policy is driven by the vision "To develop a technologically enabled, integrated, cost-efficient, resilient, sustainable and trusted logistics ecosystem in the country for accelerated and inclusive growth."

The policy has four features that will be implemented through the **Comprehensive Logistics Action Plan (CLAP):**

- **Integration of Digital System (IDS):** Under the IDS, 30 different systems of seven departments are integrated; these include:
    - Data of the road transport,
    - Railways,
    - Customs,
    - Aviation and
    - Commerce departments

- **Unified Logistics Interface Platform (ULIP):** It will bring all the digital services related to the transportation sector into a single portal, freeing the exporters from a host of very long and cumbersome processes.
- **Ease of Logistics (ELOG**): A new digital platform–Ease of logistics Services or E-Logs–has also been launched. This will allow industry to directly take up operational issues with government agencies for speedy resolution.
- **System Improvement Group (SIG):** Monitor all logistics-related projects regularly and tackling all obstacles.'
- CLAP comprises integrated digital logistics systems, standardisation of physical assets, benchmarking service standards, human resource development, capacity building, development of logistics parks, etc.
- For the expansion of the sector, the government will also provide managerial training in logistics and supply chain. Multi-modal logistics parks (MMLPs) can be established in key markets to enhance first- and last-mile connectivity.

Ease of Transportation

National Logistics Policy aims to reduce logistics costs to 7.5% of GDP from 13% now

Costs (%)	Aim	Present
Transportation	4	6
Warehousing	2.5	3.5
Inventory	1	2.5
Order processing	0.5	1

Unified Logistics Interface Platform

One window platform for real-time info

Aid integration with extant 30 data sources

IceGate, eway bills, Vahan, FasTag, among 30 to get integrated

Support data exchange with private players

Sectoral Plans

Cement, steel, fertilisers, 12 others identified

Address logistics issues on infra, digital improvements, reforms

Improve efficiency, focus on sustainability

Monitor action parameters, timelines

Focus Areas

ElogS-Single portal for time bound user issue resolution

Human resource development, capacity building

Facilitate logistics parks development

NEW LOGISTICS POLICY

INTEGRATION OF DIGITAL SYSTEM (IDS): Will integrate data from several ministerial departments to smooth cargo movement

UNIFIED LOGISTICS INTERFACE PLATFORM (ULIP): Will display all modes of transport available to facilitate cargo movement

EASE OF LOGISTICS (ELOG): Will simplify rules for logistics business

SYSTEM IMPROVEMENT GROUP (SIG): Officers from ministries will monitor all logistics projects regularly to remove bottlenecks in a time-bound manner

FOCUS ON SKILLING: Attention will be given to skilling. Generating employment will also be a key focus area

E-HANDBOOK: Will aim to standardise warehouses of physical assets

Significance

- **First of its kind:** It is the first holistic framework for the country's $150-billion logistics sector. The new logistics policy caps eight years of the government's efforts to create a conducive ecosystem in the logistics sector.
- **Infrastructure and employment:** The policy is expected to help boost manufacturing and create infrastructure. Strengthening the logistics sector will not only make it easier to do business, but also to generate substantial employment and ensure improvement in wages and working conditions.
- **In conjunction with other programs:** The NLP is in conjunction with the Gati Shakti Program, the Sagarmala and Bharatmala (waterways and roadways) schemes, the Dedicated Freight Corridors, etc., can be transformational. It will further help in improving both, Ease of Doing Business and Ease of Living.
- **Helps India to become Developed Nation**: India, which is determined to become developed, now has to compete more with developed countries, so everything should be competitive.

Challenges

Rail sector: The rail sector suffers from many structural deficiencies which have to be eliminated fast if the logistics cost has to be halved to global benchmarks.

Speed: The average speed of a freight train has stagnated at 25 kmph for decades— it has to be urgently doubled to 50 kmph at least.

Goods operation: The railways need to have a time-table based goods operation. It has to become an aggregator at the source of freight to capture the high-value small-load business (as against rake-load goods)

Waterways: Today, the total capacity of Indian ports has increased significantly and the average turn-around time of container vessels has come down from 44 hours to 26 hours. Through waterways, we can do eco-friendly and cost-effective transportation. There is valuable learning available from the river ports of China.

Roadways: Road logistics is a totally fragmented sector, where a large chunk of truck owners have a very small fleet.

State Logistics policies: Some states such as Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Rajasthan, Telangana and Uttar Pradesh have already formed their logistics policy. Logistics policies of 13 states are still in the draft stage.

Conclusion

National Logistics Policy will facilitate a unified policy and regulatory environment for end-to-end logistics services and an overarching institutional framework that will govern the logistics sector and enhance its competitiveness. Both State and central governments would prepare a master plan for logistics that will cover projects planned by different ministries to ensure multi-modality, optimal modal mix and addressing first and last mile connectivity.

4.2 TOURISM SECTOR IN INDIA

Introduction: A three-day National Conference of Tourism Ministers of States was held for the first time in Dharmsala (Himachal Pradesh) recently. The purpose of the Conference was to discuss, debate, and deliberate on modes and mechanisms to develop tourism sector in India. The meeting came up with **'Dharamshala Declaration'.**

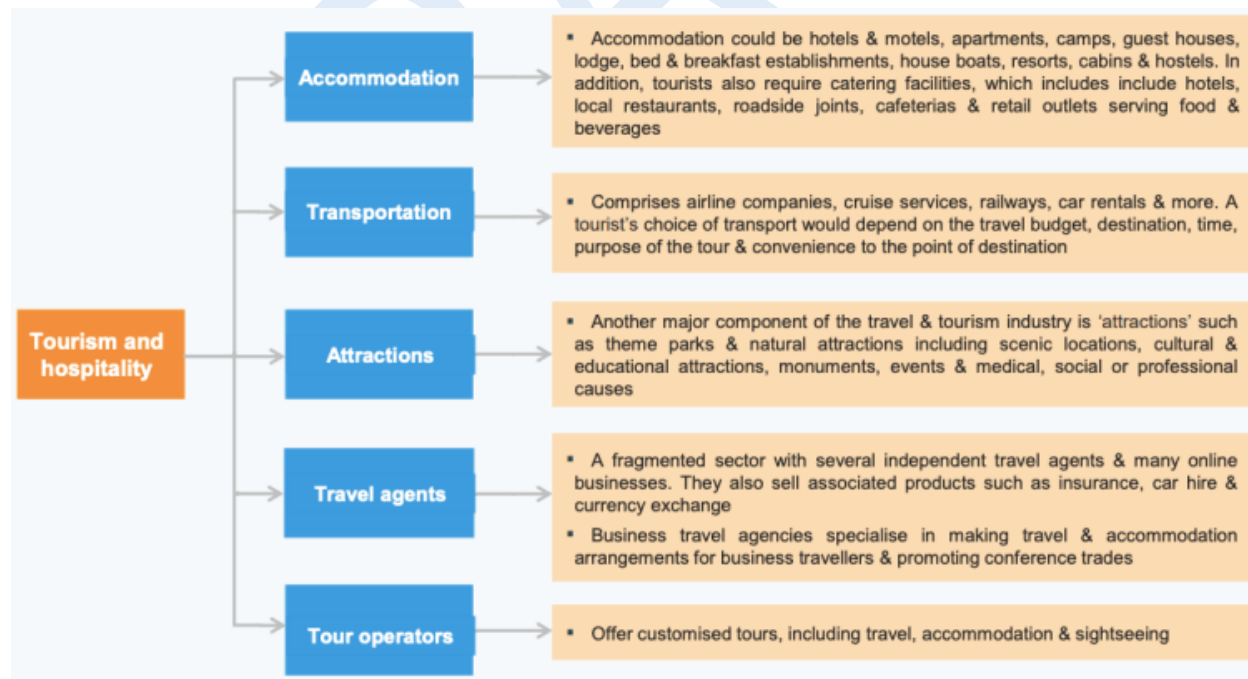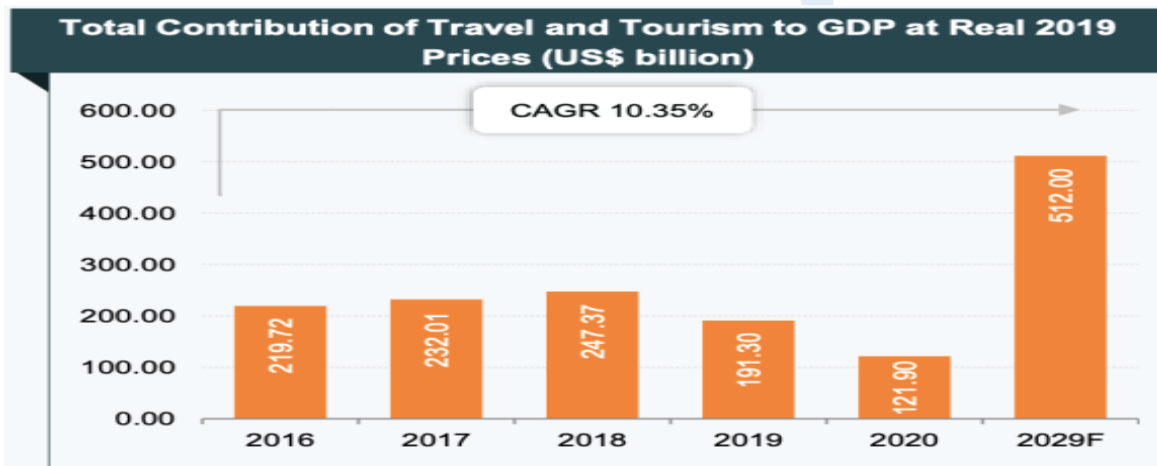## Dharamshala Declaration

The Dharamshala Declaration aims to recognize India's role in contributing towards global tourism as well as focus on recovery by also promoting domestic tourism, which has been over looked for long. India is a vast country with huge geographical, climatic, landscape, wildlife, heritage and cultural diversity. As such India has huge tourism potential. Yet this potential has

remained under-utilized. In this context, the Ministry of Tourism has undertaken several initiatives to boost tourism in India.

Status of Tourism in India

Before the onset of the pandemic, the contribution of tourism sector to India's GDP had reached ~US$ 250 billion in 2018. However, the contribution had fallen to US$ 122 billion in 2020 due to pandemic. The share of Tourism to GDP has hovered around ~5-6%. With post-pandemic recovery, the tourism industry is expected to reach US$ 512 billion by 2028.

Total Contribution of Travel and Tourism to GDP at Real 2019 Prices (US$ billion)

CAGR 10.35%

Year	Value
2016	219.72
2017	232.01
2018	247.37
2019	191.30
2020	121.90
2029F	512.00

Tourism and hospitality

- **Accommodation**: Accommodation could be hotels & motels, apartments, camps, guest houses, lodge, bed & breakfast establishments, house boats, resorts, cabins & hostels. In addition, tourists also require catering facilities, which includes include hotels, local restaurants, roadside joints, cafeterias & retail outlets serving food & beverages

- **Transportation**: Comprises airline companies, cruise services, railways, car rentals & more. A tourist's choice of transport would depend on the travel budget, destination, time, purpose of the tour & convenience to the point of destination

- **Attractions**: Another major component of the travel & tourism industry is 'attractions' such as theme parks & natural attractions including scenic locations, cultural & educational attractions, monuments, events & medical, social or professional causes

- **Travel agents**: A fragmented sector with several independent travel agents & many online businesses. They also sell associated products such as insurance, car hire & currency exchange
  - Business travel agencies specialise in making travel & accommodation arrangements for business travellers & promoting conference trades

- **Tour operators**: Offer customised tours, including travel, accommodation & sightseeing

1. Diverse attractions

- India offers geographical diversity, attractive beaches, 30 World Heritage SBPM and 25 bio-geographic zones.
- The country's big coastline is dotted with several attractive beaches.
- The Ministry of Tourism is promoting Buddhist Circuit to increase India's share in global tourism market.

2. Robust demand

- The Medical Tourism sector is expected to increase at a CAGR of 21.1% from 2020-2027.
- The travel market in India is projected to reach US$ 125 billion by FY27 from an estimated US$ 75 billion in FY20.
- International tourist arrivals are expected to reach 30.5 million by 2028.

ADVANTAGE INDIA

4. Policy support

- Campaigns such as Swadesh Darshan, a theme-based tourist circuit was launched to harness the tourism industry's potential.
- The government introduced a scheme to boost the tourism sector by providing one-month free tourist visa to 5 lakh tourists until March 31, 2022.
- In the Union Budget 2022-23, Rs. 2,400 crore (US$ 309.13 million) has been allocated to the Ministry of Tourism which is 18.42% higher than the allocation for FY 2021-22.

3. Attractive opportunities

- India has a diverse portfolio of niche tourism products - cruises, adventure, medical, wellness, sports, MICE, eco-tourism, film, rural & religious tourism.
- Post the pandemic crisis, the government plans to tap into regional tourism by opening doors for South Asian country tourists.
- Government is providing free loans to MSMEs to help them deal with the crisis and revive the economy, including the tourism sector.

Challenges

- **Awareness:** Despite the government's promotional campaigns, awareness of India as a tourist destination remains low. Even among domestic tourists, the choice is limited to a few popular destinations that remain overcrowded, while many other potential spots have low numbers of tourists. Information portals and centers are poorly managed. There are no promotional campaigns abroad. The absence of online branding campaigns does not provide information to attract tourists.

- **Infrastructure and safety:** Many popular destinations lack air connections, especially in hilly areas. In addition, many places lack proper sanitary facilities. The lack of cleanliness makes many tourists uneasy. In addition, there are security concerns especially among foreign visitors due to several incidents of harassment. The bad experience of some tourists leads to bad word of mouth, which affects the perception of potential tourists.

- **Communication:** Many tourists face communication problems in India. This makes them dependent on tour guides or tour operators to curate their India travel.

- **Lack of skilled labor:** There is a shortage of skilled labor, especially multilingual tour guides or hotel staff. The sector is dominated by small unorganized players who cannot afford to

spend on the qualification of their employees or their sensitization to the cultural values of foreign tourists. This affects the tourist experience.

- **Visa Process:** The government has started an e-visa (online) process which has led to an increase in the number of foreign tourists. However, the visa-on-arrival option is limited to very few countries, which limits foreign tourists.
- **Currency Fluctuations:** Another issue is exchange rate fluctuations. The inability to know the value of a currency means that long-term tourism prices are particularly difficult to predict, and the impact of this monetary instability is already affecting several tourism support systems.

Initiatives

Infrastructure: The government is increasing investment in strengthening the country's road and rail network, and supporting the development of ports is a significant driver of growth in the tourism industry.

- The Adarsh Station Scheme helps modernize railway stations, while the Regional Connectivity Scheme: UDAN (Ude Desh ka Aam Nagrik) helps streamline air transport and expand it to previously unserved routes. Swadesh Darshan and PRASHAD programs aim to stimulate growth in marginal segments of tourism such as religious, cultural, wellness, medical, adventure, MICE, wildlife etc.
- Under the Swadesh Darshan program, the government has launched several thematic circuits such as the Buddhist circuit, which covers destinations associated with the life of Lord Buddha.

Promotional Campaign: Promotional activities such as the Incredible India 2.0 campaign focus on niche tourism products including but not limited to yoga, wellness, luxury and cuisine. The 'Find the Incredible You' campaign aims to promote the country's niche tourism products on digital and social media.

Information Helpline: The Government has introduced the concept of e-Tourist and e-Health Visas, which has helped increase the number of tourist arrivals in the country. Other initiatives such as Atithi Devo Bhava, a 24×7 multilingual tourist hotline, have helped improve the safety and security of tourists, among others. An 'Incredible India Helpline' has been set up on a pilot basis to guide tourists.

Safety: The Ministry of Tourism has adopted a code of ethics for safe tourism, which contains a set of guidelines to promote tourism activities to be carried out with respect to fundamental

rights such as the dignity and safety of tourists as well as local residents, especially women and children.

Investment: The government is allowing 100% foreign direct investment in the travel and tourism industry through an automatic route to increase investment across the industry. Recently, the across-the-board reduction in GST rates on hotel room rates has been a positive step for the industry and is expected to boost the competitiveness of the industry globally.

Cleanliness and Hygiene: A major cleanliness campaign has been launched under the Swachh Bharat movement to protect and preserve the sanctity of national heritage sites. The Ministry of Tourism has also launched an awareness campaign to ensure the cleanliness of the surroundings and help create Swachh Bharat, Swachh Smarak.

Assistance to States: Financial assistance to States, including places of religious significance, for various tourism projects in consultation with them subject to availability of funds, among priorities, disposal of pending utilization certificates and compliance with program guidelines.

Digital Database: In September 2021, the government launched NIDHI 2.0 (National Integrated Database of the Hospitality Industry), a scheme that will maintain a database of the hospitality industry including accommodation units, travel agencies, tour operators and others. NIDHI 2.0 will facilitate digitization of the tourism industry by inviting hotels to register on the platform.

Skills: The Ministry of Tourism has introduced the Incredible India Tourist Facilitator (IITF) and Incredible India Tourist Guide (IITG) certification program to create an online training platform of well-trained tourist facilitators and guides across the country.

Ministry of Tourism launched an initiative called SAATHI (System for Assessment, Awareness & Training for Hospitality Industry) in partnership with Quality Council of India (QCI) in October 2020. The initiative was aimed at effective implementation of guidelines/SOPs issued with reference to COVID-19 for safe operations hotels, restaurants and other units.

Way Forward

- First, the government should continue to promote India's diversity and rich heritage to re-establish its position as a tourist haven. Promotional campaigns should target both domestic and foreign tourists. Similarly, the range of thematic tourist circuits can be expanded.

- Second, skills initiatives should be scaled up. The tourism sector has the potential to provide many livelihood opportunities in smaller towns/cities (below Tier 2). It can help solve the problem of rising unemployment.
- Third, there is a need to balance the promotion of tourism with the protection of the physical, social and cultural environment in the target areas. The government should also promote green and sustainable tourism which needs to be addressed

1. Rural tourism
- The aim is to develop interest in heritage and culture; & promote visits to village settings to experience & live a relaxed & healthy lifestyle.

2. Pilgrimage tourism
- One of the biggest contributor to tourism industry. India being a religious hub for different cultures, attract many tourists every year

3. Eco-tourism
- Vast variety of flora & fauna in various states is a major factor behind their growing popularity as tourist destinations.
- Thenmala in Kerala is the 1st planned ecotourism destination in India.

4 Luxury tourism
The luxury travel market in India is expected to grow at rate of 12.8% during 2015-25, the highest in comparison with any other BRIC country.

7. Adventure tourism
- A wide range of adventure sports are covered under this category with specialised packages
- The activities include mountaineering, trekking, bungee jumping, mountain biking, river rafting & rock climbing

6. Medical tourism
- Tourists seek specialised medical treatments, mainly ayurvedic, spa & other therapies
- The primary purpose is achieving, promoting or maintaining good health & a sense of well-being

5. Heritage tourism
- Tourists visit India for its cultural heritage in various cities
- The country's rich heritage is amply reflected in the various temples, majestic forts, pleasure gardens, religious monuments, museums, art galleries, urban & rural sites

The tourism sector in India is gradually recovering from the impact of the pandemic. Even during the pandemic, the sector had shown resilience by adapting its operations to ensure safe practices and social distancing. The sector has huge untapped potential in India. The multiplier effect associated with the tourism sector can help raise the income levels and ensure inclusive growth. A burgeoning tourism industry can prove to be vital in ensuring India's transition to a high income economy.
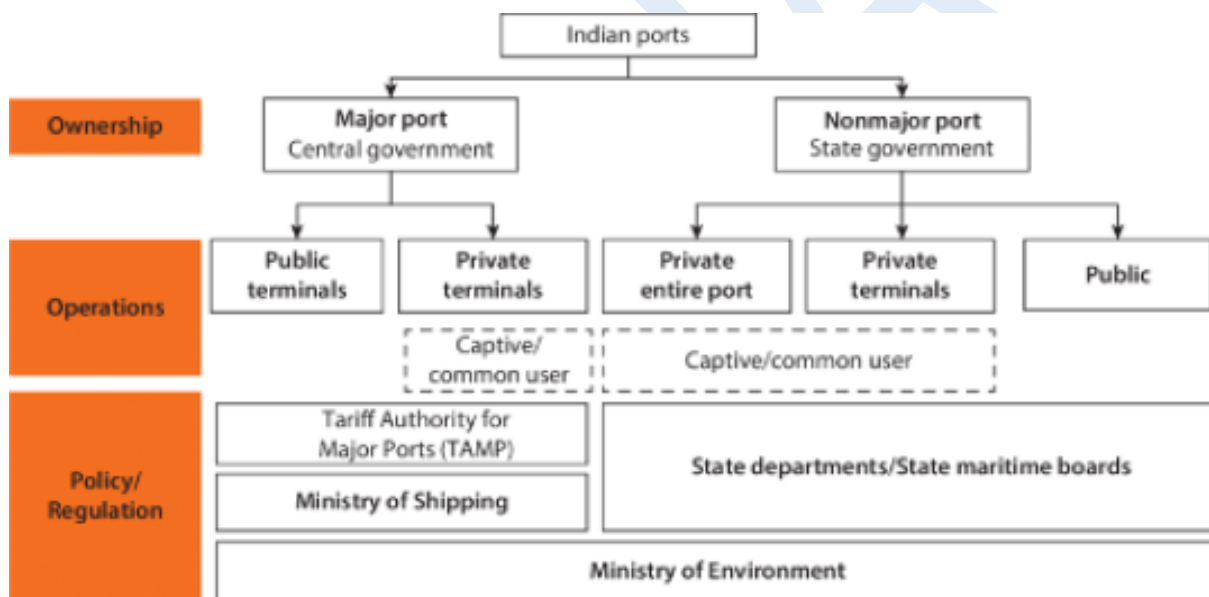
4.3 DRAFT PORTS BILL

Why in News: The Union Government has prepared a new Draft Ports Bill, 2022. It has been prepared to replace the Indian Ports Act, 1908. An earlier draft was released in 2021, and this Bill has some improvements over it.

The purpose of the Draft Ports Bill is to revamp the 1908 Act to reflect the present-day frameworks. In addition, it seeks to amend and consolidate legislation for containment, prevention of pollution and facilitate compliance with the country's maritime treaties and international instruments and aid the consultative development of the ports sector in the national interest.

Institutional Arrangements governing the Ports Sector in India

- Apart from the 1908 Act, the Major Ports are governed by the Major Port Authorities Act, 2021 which repealed the earlier Major Port Trusts Act, 1963.
- In 1997, a Maritime State Development Council (MSDC) was created by an Executive order, with the Union Minister of Shipping as chairperson and the Ministers in charge of ports of the maritime States/Union Territories (UTs) as members. The MSDC serves as an apex advisory body for the coordinated development of major ports and non-major ports.
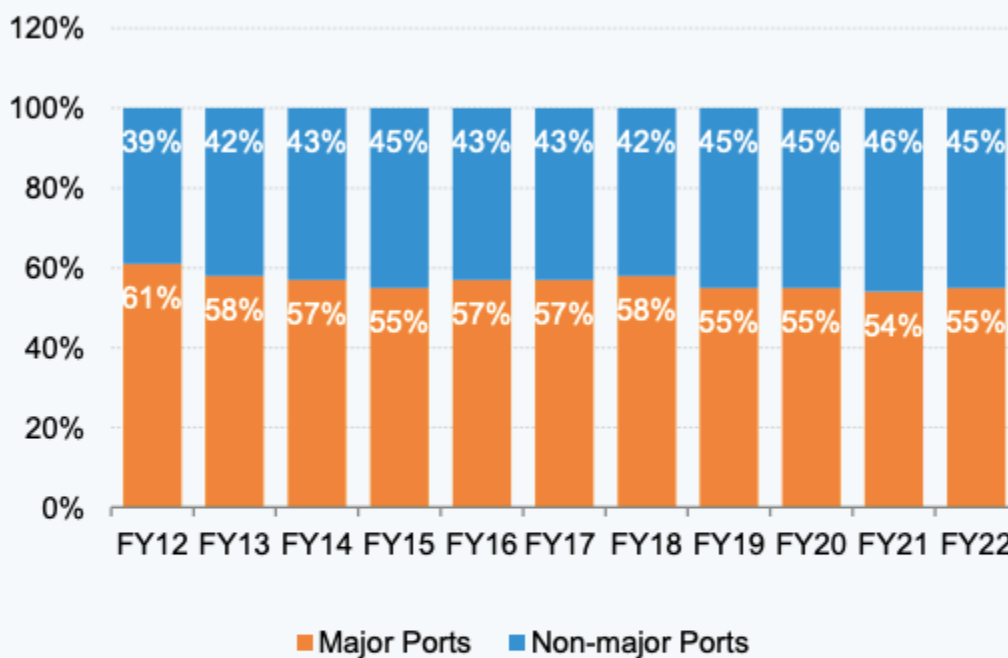

Provisions of the Draft Ports Bill, 2022

The Draft Indian Ports Bill has a 4-fold primary objectives:

- Promote integrated planning between States and Centre-States through a consultative and recommendatory framework;
- Ensure prevention of pollution measures for all ports in India while incorporating India's obligations under international treaties;
- Address lacunae in the dispute resolution framework required for burgeoning ports sector;

- Usher-in transparency and cooperation in the development and other aspects through the use of data.
- **The Bill is aimed at ensuring streamlined and homogenized development in the maritime sector.**
- **Its objective is to promote ease of doing business. Some of the redundant provisions of the 1908 Act have been deleted or replaced with contemporary provisions.**

Market Share of Major and Non-Major Ports

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
Non-major Ports	39%	42%	43%	45%	43%	43%	42%	45%	45%	46%	45%
Major Ports	61%	58%	57%	55%	57%	57%	58%	55%	55%	54%	55%

■ Major Ports ■ Non-major Ports

Non-major ports are evolving faster than major ports

- Non-major ports are gaining share and a major chunk of traffic has shifted from major ports to non-major ports.
- The contribution of non-major port traffic to the total traffic rose to 45% in FY22.

Key Challenges

Infrastructure Bottleneck: Indian ports are plug with the lack of capacity and low productivity. The high turnover time and freight costs make Indian ports less competitive.

- Although the turnaround time has improved it is still poor compared to global standards e.g., Japan (8.16 hours), Taiwan (10.56 hours), Hong Kong (12.48 hours) have much better turnaround times than Indian ports (62.16 hours). Poor planning has meant that India's port expansion has not been commensurate with rise in cargo traffic.

Logistics Bottleneck: The port productivity and efficiency also depend upon the quality and reliability of road and rail connectivity, and adequate storage and handling facilities. The lack of expressway connectivity between major ports and industrial clusters, high fuel cost make hinterland transportation inefficient and slow.

Technology Bottleneck: Major international ports are using advanced innovations and information technology to change the way goods are transported between port terminals.

- They have implemented end-to-end solutions and online tracking systems to streamline the flow of information between their trading partners.
- In India such smooth information flow between customs, ports, inland terminals and shippers involved in container trade is limited. This reduces efficiency.

Regulation Bottleneck: The port operations in India are marred by complex custom procedures, regulations, and lengthy documentation process.

In some major ports like Singapore modernized custom administrations have adopted a highly selective procedure for examinations of containers and about 95% of containers are allowed clearance without any physical examinations. In India, rules require 10% of the contents of each box to be checked and verified. It causes delay, and adds a high transportation costs.

Initiatives

- **FDI:** The government has allowed FDI of up to 100% under the automatic route for projects related to the construction and maintenance of ports. Indian ports have received cumulative FDI inflow worth US$ 1.63 billion between April 2000 and June 2021.
- **MAJOR PORT ACTS:** Major Port Authorities Act has been passed in 2021, replacing the Major Port Trusts Act, 1963. The new Act aims to decentralize decision-making and reinforce excellence in major port governance.

- **Project UNNATI** has been started by the Government of India to identify opportunity areas to improve operations of key Under the project, 116 initiatives were identified, out of which, 98 initiatives have been implemented, as of September 2020.
- **Model Concession Agreement (MCA)** has been finalised to bring transparency and uniformity to contractual agreements that major ports would enter with selected bidders for projects under the build, operate and transfer.

The Government has set a target to make India a developed nation by 2047. This will require rapid economic growth supported by domestic demand, investments and robust exports. Maritime trade and port infrastructure will play a vital role in achieving a robust growth in exports. Thus the Government has to support the development of world-class port infrastructure in India to make Indian ports and exports globally competitive.

4.4 HUMAN DEVELOPMENT INDEX

Introduction: **The theme of the HDR 2021-22 which was compiled amidst the COVID Pandemic is "Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World".**

Human Development Index

Human development is defined as the process of enlarging people's freedoms and opportunities and improving their wellbeing. Human development is about the real freedom people have to decide who to be, what to do, and how to live.

To guide towards and assess the status of this concept, the HDI Report is released by United Nations Development Program (UNDP).

- **It was released for the first time in the year 1990.**

It is a measure of achievements in three key dimensions of human development:

- Long and healthy life (Life expectancy),
- Access to knowledge (expected and mean years of schooling)
- Decent standard of living (GNI per capita).

Highlights of the Report

- **India was ranked 132 out of 191 countries in the Human Development Index (HDI) 2021. With this, India has registered a decline in its score for two consecutive years for the first time in 30 years.**

- **India's HDI value is 0.633 (medium human development category) as compared to the global average of 0.732.**
- The drop in India's HDI from 0.645 in 2018 to 0.633 in 2021 can be attributed to falling life expectancy at birth.
- The report also notes that about 90% of countries have registered a reduction in their HDI value in 2020 or 2021.
    - **India's life expectancy at birth:** 67.2 years as compared to the global average of 71.4 years
    - **India's expected years of schooling:** 11.9 years as compared to the global average of 12.8 years.
    - **India's mean years of schooling:** 6.7 years as compared to the global average of 8.6 years
    - **India's gross national income (GNI) per capita (2017 PPP):** $6,590 as compared to the global average of $16,752.

4.5 PRECISION FARMING

Why in News: India has one of the highest arable lands globally with over 155 million hectares and is one of the key agricultural producers.

- In 2019, the agricultural sector generated approximately INR 19 lakh crores (US$ 265 billion) business comprising 18% of India's Gross Domestic Product (GDP) and employs more than half of India's population. However, there are structural challenges plaguing the agriculture sector including low productivity, uneconomic landholding size, sub-optimal input use efficiency, high biotic losses, and a low level of mechanisation.
- In the wake of climate change, depletion of natural resources and an imminent food crisis, India must move beyond aggressive farming and towards precision farming.
- According to estimates, the global precision farming market is forecasted to reach US$ 14.6 billion by 2026 at CAGR of ~8%. Precision farming, although at a nascent stage in India, can help the country become the top agricultural producer across the globe by maximising farm productivity and profitability.

Precision Farming

- **Precision farming is an approach where inputs are utilised in precise amounts to get increased average yields, compared to traditional cultivation techniques.**
- It is the science of improving crop yields using high technology sensor and analysis tools.
- Precision Farming utilizes multitude of advanced technologies and tools to monitor several parameters and collect information related to crop growth (like soil moisture, pH etc.).

- The information is used for targeted interventions. It is referred to as 'precision' because it is focused on performing the right intervention (e.g., providing water to crops), in the right place, at the right time, responding to the specific demands of individual crops and individual areas of land with superior levels of precision.
- The precise nature of targeted interventions help to improve efficacy of the inputs and hence increase the yields. Precision Farming is being adopted throughout the world to increase production, reduce labor time, and ensure the effective management of fertilizers and irrigation processes. It uses a large amount of data and information to improve the use of agricultural resources, yields, and the quality of crops.

Technologies Used in Precision Farming

- **Global Positioning System:** GPS is used to identify the location of farm equipment in the field. It provides an accurate positioning system necessary for field implementation of variable rate technology in agricultural input management. The internet enables the creation of a system for efficient remote sensing-based agricultural management.
- **Grid sampling:** It is a technique for segmenting fields into small units (~0.5–5 hectares). Soil samples from those grids are used to calculate the proper application rates for crop inputs. Each grid has many samples collected, combined, and delivered to the lab for evaluation.
- **Variable-rate technology:** Variable-rate technology (VRT) consists of farm field equipment with the ability to precisely control the rate of application of crop inputs that can be varied in their application including fertilizers, irrigation, tillage, insect control etc.
- **Yield monitors:** Crop yield measuring tools fitted on harvesting machinery are called yield monitors. Along with the positioning data from the GPS device, the yield data from the monitor is recorded and saved. Utilizing the yield data, GIS software creates yield maps. The data helps in decisions related to the requirement of targeted intervention.
- **Remote sensors:** Remote sensing (in agriculture terms) means viewing crops from overhead (from a satellite or low-flying aircraft/drone) without coming into contact, recording and displaying the image. This technique provides the map to pinpoint the field problems more effectively. Remote sensors can be categorised as aerial or satellite sensors.
- **Proximate sensors:** Proximate sensors can be used to measure soil parameters (Nitrogen content, pH etc.) and crop properties as the tractor passes over the field.
- **Computer hardware and software:** Computer support is required to analyse the data gathered by other components of precision farming technology and to make it accessible in formats such as maps, graphs, charts, or reports.

Benefits of Precision Farming

- **Increase agriculture productivity:** Precise agriculture inputs (like fertilizers, water) determined scientifically through analysis of data captured by sensors enhances the agriculture output and promotes the yield.

- **Reduction of chemical application in crop production:** Amount of input is determined based on requirement. Fertilizers are supplied only where specific nutrients are missing. Similarly weedicides are used at location of weeds. Drones can be used for targeted delivery of chemicals with desired precision. This reduces unnecessary usage and cuts down waste.

- **Prevents soil degradation:** Since over-use of chemicals is avoided, prevents the leaching of undesired chemicals into soil, preventing their harmful impact on soil.

- **Efficient use of water resources:** Targeted delivery of water through techniques like fertigation reduces water usage. Fertigation is the process of directly applying fertilizer to a crop through the irrigation system.

- **Improvement in Farm Incomes:** Increase in productivity, reduction in use of inputs and wastage improves farm incomes and helps in raising the socio-economic conditions of farmers.

- **Job creation:** Precision farming has potential to create a lot of employment opportunities e.g., operating drones is a specialised skillset. Youth in rural areas can be trained and employed as certified drone operators. According to one estimate, these new-age technologies have a potential to create 2.1 million jobs in rural areas.

Challenges

- **High Cost:** Precision farming is dependent on technologies like GPS, drones, and sensors. All these technologies are capital intensive and require large investments in the beginning. Spending the requisite amounts is beyond the capacity of small and marginal farmers.

- **Lack of technical expertise knowledge and technology:** Deploying and using the technologies, interpreting the captured data require high level of awareness and skills.

- **Not viable for small land holdings:** Precision farming require high investments. Moreover, proximate sensors (say to capture information/samples of soils) are generally deployed on farm machinery like tractors. Thus precision farming is more conducive with mechanized farming. High investments and mechanzied farming are viable only in large holdings. Return in small landholding are too little (due to low absolute output even though yield may be high) to justify high investments required in precision farming.

Government Initiatives

- **'Digital Agriculture Mission 2021–2025':** The initiative aims to leverage a wide range of technologies from AI, blockchain along with drone technology to improve the sector's overall performance.
- **At present, ICRISAT (International Crop Research Institute for Semi-Arid Tropics)** is working with Microsoft to develop an AI Sowing App to send sowing advisories to farmers for telling the optimal date to sow.
- The sowing date is very critical when it comes to ensure the best yield and this app aims to eradicate the guesswork from the process.
- **Crop yield prediction model using AI:** In May 2018, NITI Aayog partnered with IBM to develop a crop yield prediction model using AI to provide real-time advisory to farmers. The partnership aims to provide insights to enhance crop productivity, increase soil yield, and control agricultural inputs with the goal of improving farmers' income.
- **It aims to identify systems of crop monitoring, early warning on pest and disease outbreak based on advanced AI innovations.** It also includes deployment of weather advisory rich satellite and enhanced weather forecast information along with IT and mobile applications with a focus on improving the crop yield and cost savings through better farm management.
- **AI sensors for smart farming:** The Government of India, in collaboration with Microsoft, has begun empowering small-holder farmers in India to increase income through higher crop yield and greater price control using AI sensors.
- Microsoft is engaging with multiple stakeholders including farmers, State Governments, the Ministry of Electronics and Information Technology (MeitY) and the Ministry of Agriculture and Farmers Welfare to create an ecosystem for AI into farming. Microsoft is also engaging with Escorts (Farm equipment manufacturer) to enable precision agriculture capabilities.

Drones to monitor crop and soil health: The project entitled 'SENSAGRI: Sensor-based Smart Agriculture is being undertaken by the Indian Council of Agricultural Research (ICAR) along with 6 partner institutes.

- Its objective is to develop indigenous prototype for drone based crop and soil health monitoring system using remote sensors. This technology could also be integrated with satellite-based technologies for large scale applications.

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   LITHIUM CELL PLANT

Why in News: The Minister of State for Electronics and Information Technology (MeitY) will inaugurate India's first lithium cell manufacturing facility at Tirupati, Andhra Pradesh.

Plant

- The state-of-the-art facility has been set up by the Chennai based Munoth Industries Limited with an outlay of Rs. 165 crores.
- The facility is located in one of the two Electronics Manufacturing Clusters set up in the temple town, by Prime Minister Narendra Modi in 2015.
- The installed capacity of the plant at present is 270 Mwh and can produce 20,000 cells of 10Ah capacity daily.
- These cells are used in power banks and this capacity is around 60 percent of India's present requirement.
- Currently India imports complete requirements of lithium-ion cells primarily from China, South Korea, Vietnam and Hong Kong.
- Cells for other consumer electronics like Mobile Phones, hearable and wearable devices will also be produced.
- These cells are used for Mobile Phones, hearable and wearable devices.
- Currently, India imports complete requirements of lithium-ion cells primarily from China, South Korea, Vietnam and Hong Kong.

Significance

This plant will be a step in the direction of realising Prime Minister Modi's vision of making India the global hub of electronic manufacturing.

5.2 CHIMERIC ANTIGEN RECEPTOR (CAR-T) CELL THERAPY

Introduction: Recently, researchers reported that India's first Chimeric Antigen Receptor (CAR)-T Cell T Cell therapy for specific types of cancer patients is showing promising results in India and could be the safest therapy in this category to date.

CAR-T cell Therapy

- **CAR-T cells** are a patient's own immune cells that are genetically engineered in the laboratory to fight cancer. **The CAR-T cell** is a promising therapy that has ushered in a new era of treatment for refractory and stubborn cancers.

- **CAR T cell therapy** is used as a third- or second-line treatment for patients with specific types of blood and lymph node cancers. In India, those willing to undergo this treatment have to travel to other countries, mostly the US.
- **The T-cell receptor** is widely used in developed countries for immunotherapy during cancer treatment. However, this technology was not yet available in India.

The therapy focuses on **leukemia and lymphoma.**

- **Leukemia** is a cancer of the blood-forming tissues, including the bone marrow.
- **Lymphoma** is a cancer of the lymphatic system, which is part of the body's bacteria-fighting network.

It uses lentiviral technology

- In gene therapy, it is a method of inserting, modifying or deleting genes in organisms using lentiviruses, a family of viruses responsible for diseases such as AIDS (acquired immunodeficiency syndrome).
- As part of the treatment, a specific type of **white blood cell called T cells** is changed in the laboratory so that they can find and destroy cancer cells.
- It is also sometimes referred to as a type of **cellular gene therapy** because it involves changing the genes inside T cells to help them attack cancer cells.

CAR T-cell Therapy
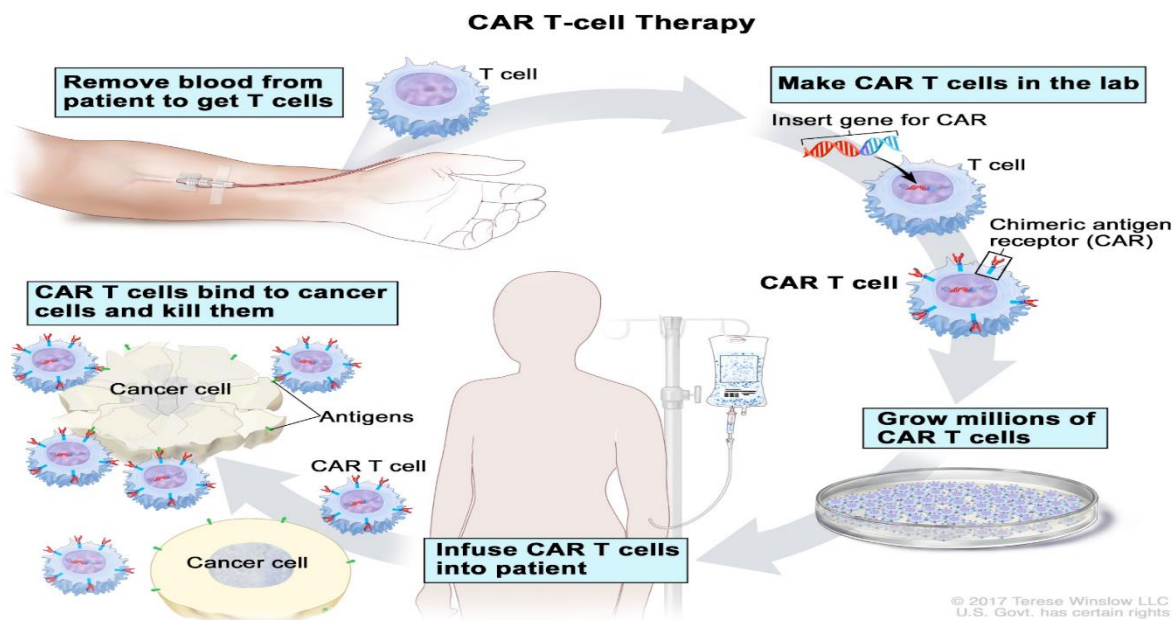
Types of cancer can be used: The therapy is mostly effective for blood cancers and lymphoma (cancer that starts in the cells of the lymphatic system). About 40,000-50,000 patients are diagnosed with these cancers annually in India.

Importance

- **HCAR19 therapy:** Participants received autologous HCAR19 therapy (a humanized CAR 19 therapy developed by IIT Bombay and it was observed that there was no dose-limiting toxicity and only low cytokine release syndrome (CRS) was observed in 40 percent of participants.
- **No neurotoxic syndrome:** None of the participants had immune effector cell-related neurotoxicity syndrome.
- **A more secure version**: Overall, the new humanized HCAR19 tested in phase I clinical trials for lymphoma in adults was found to be safe and shows promising early signs of activity.
- **No deaths:** None of the participants required ICU admission after CAR-T cell therapy, and there were no CAR-T-related deaths.

5.3 INCOVAAC

Why in News: Bharat Biotech's iNCOVACC, the world's first intranasal vaccine for Covid-19 received approval for emergency use in India.

It is a recombinant replication deficient adenovirus vectored vaccine with a pre- fusion stabilized spike protein.

Benefits

- **It produces antibodies as well as reduce risk of transmission**, while other vaccines only produce antibodies.
- **Additional immune response- addition to immunity** in blood, it activates immunity of cells found in tissues lining nose, mouth and lungs.
- **Easy delivery** – cut down syringe, needles etc.
- **High compliance** (Ideally suits for children's and adults)

5.4 NAVIC

Why in News: National Telecommunications Institute for Policy Research, Innovation and Training (NTIPRIT) conducts a webinar on "NavIC — Opportunities for the Telecom Industry".

- The webinar is conducted by NTIPRIT in collaboration with ISRO and the telecom industry.
- It highlighted the importance and relevance of NavIC technology and making NavIC available on L-1 band in addition to the presently used L-5 band.
- The L band is the Institute of Electrical and Electronics Engineers (IEEE) designation for the range of frequencies.
- Also, the NavIC system should be made mandatory for mobile phones that can help in tracking the oxygen tankers and other essentials in the time of Covid-19.

Navigation with Indian Constellation (NavIC) Technology

- An autonomous regional satellite navigation system, also known as Indian Regional Navigation Satellite System (IRNSS), is developed by ISRO.
- It has been designed to provide accurate position information service to users in India as well as the region extending up to 1500 km from its boundary.

It will provide two types of services:

- **Standard Positioning Service (SPS):** provided to all the users.
- **Restricted Service (RS):** It is an encrypted service provided only to the authorised users.

The IRNSS System is expected to provide a position accuracy of better than 20 m in the primary service area. Presently, it consists of 7 active satellites located at a distance of approximately 36,000 Km.

- Satellites are in Geostationary Orbit (GEO)
- Satellites are in inclined Geosynchronous Orbit (GSO)

## 5.5 DOUBLE ASTERIOD REDIRECTION TEST DART MISSION

Why in News: Recently, NASA crashed its $344 million the Double Asteroid Redirection Test (DART) mission on binary asteroid system Didymos and moonlet to test a kinetic impactor technology.

Binary asteroid system is made up by asteroid Didymos and its small moonlet called Dimorphos and the small moon (Dimorphos) orbits the larger body (Didymos).

- **The Double Asteroid Redirection Test (DART)** is a first of-its-kind spacecraft, which has been designed to test a unique method to deflect an asteroid to change its motion in space through kinetic impact and save the Earth from an incoming asteroid.

- The James Webb Space Telescope and the Hubble telescope were used to track the spacecraft and keep an eye on the asteroid to see the impact.

Nasa spacecraft will crash into asteroid's moon

Original orbit
New orbit

Didymos

Dimorphos

Impact alters orbit

Dart

LICIACube
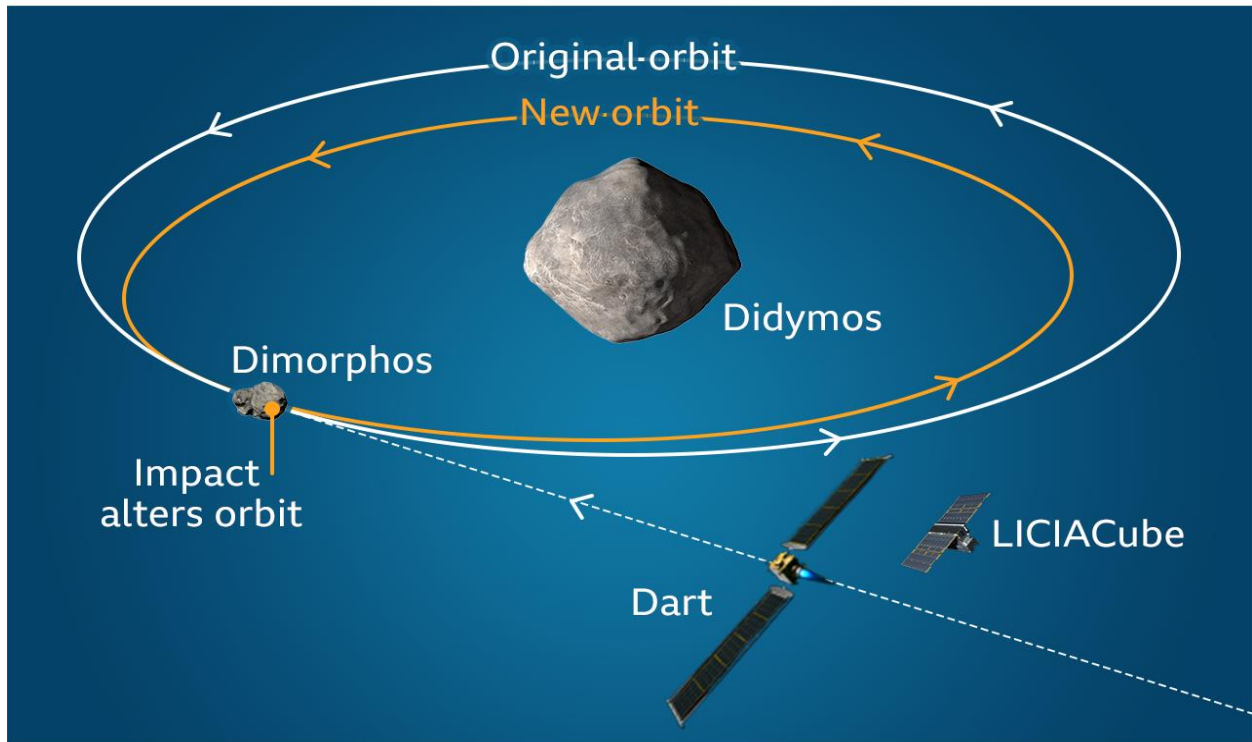
ECOLOGY and ENVIRONMENT

❖ **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 URBAN FLOODS

Why in News: The city of Bengaluru witnessed several spells of heavy rainfall in the last week. The city received > 130 mm of rainfall on September 05, 2022 which led to inundation of most parts of the city.

Over the last few years, similar incidents of urban floods have occurred in Mumbai, Chennai, Patna and several other major cities.

In fact, urban floods seem to have become an annual phenomena in most urban centers in India. While heavy rainfalls are a significant factor in urban floods, a major cause is poor planning, inadequate infrastructure, unauthorized construction and encroachment of river and lake beds.

Urban Flood

Floods are a result of both meteorological and hydrological factors. Meteorological factors include rainfall frequency and intensity, storms, temperature etc. and hydrological factors are associated with groundwater levels, extent of impervious surface etc.

When combined with anthropogenic factors in urban centers, events of inundation of large areas by water are classified as urban floods. Anthropogenic factors like land-use changes, exploitation of floodplains by construction and similar activities, poor solid waste management, and destruction of drainage complicate the system.

According to NDMA, Urban flooding is significantly different from rural flooding as urbanization leads to developed catchments, which increases the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times. As a result, flooding occurs very quickly due to faster flow times (in a matter of minutes). Urban areas are densely populated and thus the economic impact can be much higher than floods in rural areas.
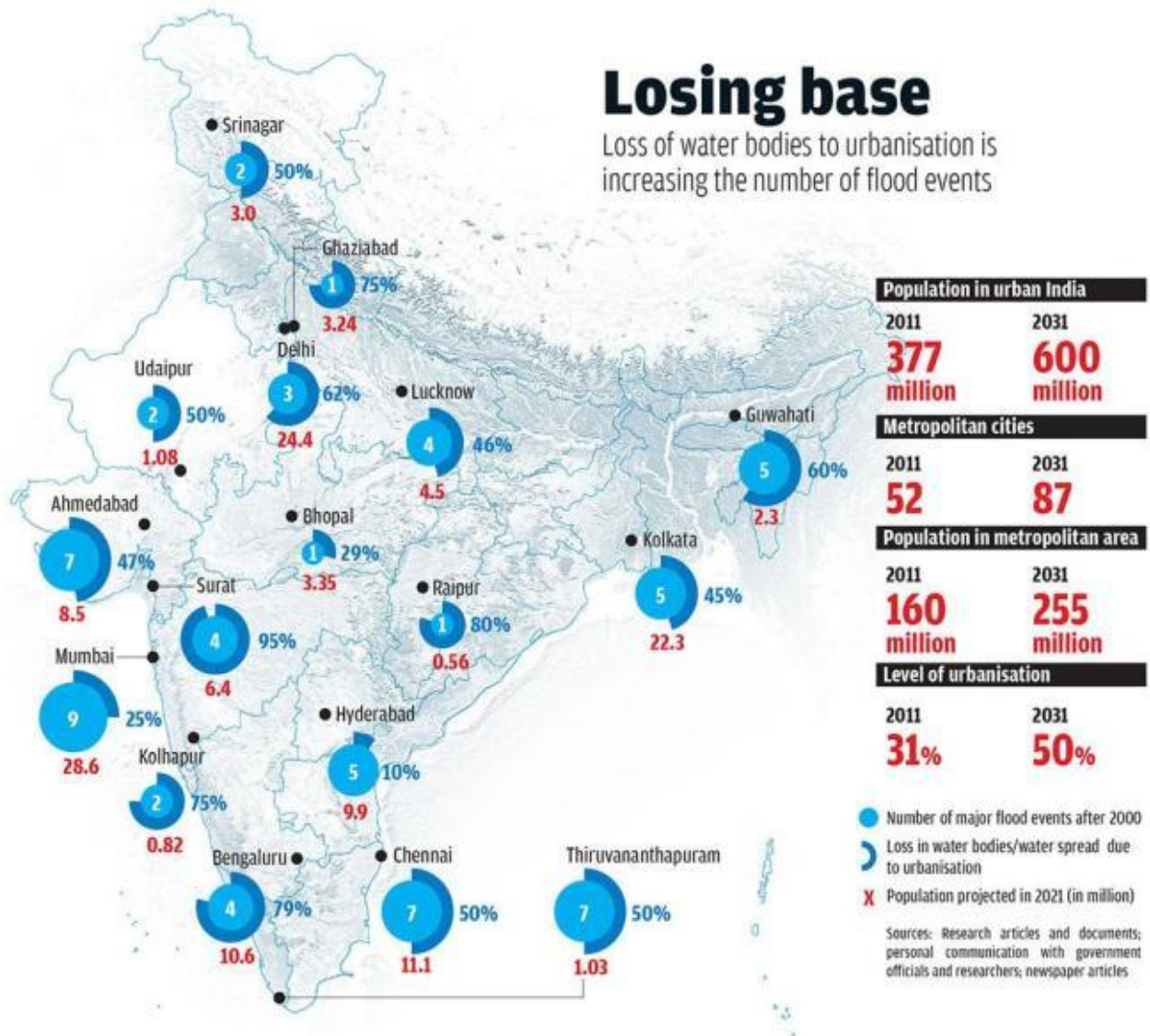
Reasons behind Urban Floods: Urban floods are caused by a wide variety of factors, but they typically result from a combination of natural and human influences.

Meteorological Factors: Most Indian cities receive heavy rainfall during monsoons. The extreme weather events with concentrated heavy rainfall are becoming more frequent due to climate change (increased cyclonic activity in Arabian Sea and Bay of Bengal due to warming). Most urban floods in recent times were consequent to episodes of heavy rainfall e.g., Bengaluru witnessed > 130 mm rainfall in one day, against average rainfall of ~4.5 mm/day in this time of the year. Similarly Mumbai recorded ~950 mm of rainfall on July 26, 2005.

Hydrological Factors: Flood risk arises when the surface runoff is greater than the infiltration rate during The infiltration rates depend upon the type of soil, their respective water retention capacities, vegetation cover (reduces speed of water and increases infiltration) etc. Urbanization

reduces rate of infiltration due to paved roads and lack of vegetation cover. Lower infiltration leads to higher run-off and flooding.

Anthropogenic/Human Factors: The risk of urban flooding has increased as a result of human interference in the natural environment. Urbanization has led to encroachments on water bodies and construction on beds of rivulets/rivers and lakes.

Losing base
Loss of water bodies to urbanisation is increasing the number of flood events

Srinagar — 2 — 50% — 3.0
Ghaziabad — 1 — 75% — 3.24
Delhi — 3 — 62% — 24.4
Udaipur — 2 — 50% — 1.08
Lucknow — 4 — 46% — 4.5
Guwahati — 5 — 60% — 2.3
Ahmedabad — 7 — 47% — 8.5
Bhopal — 1 — 29% — 3.35
Surat — 4 — 95% — 6.4
Raipur — 1 — 80% — 0.56
Kolkata — 5 — 45% — 22.3
Mumbai — 9 — 25% — 28.6
Kolhapur — 2 — 75% — 0.82
Hyderabad — 5 — 10% — 9.9
Bengaluru — 4 — 79% — 10.6
Chennai — 7 — 50% — 11.1
Thiruvananthapuram — 7 — 50% — 1.03

Population in urban India

2011	2031
377 million	600 million

Metropolitan cities

2011	2031
52	87

Population in metropolitan area

2011	2031
160 million	255 million

Level of urbanisation

2011	2031
31%	50%

● Number of major flood events after 2000
◗ Loss in water bodies/water spread due to urbanisation
X Population projected in 2021 (in million)

Sources: Research articles and documents; personal communication with government officials and researchers; newspaper articles

What causes urban floods?

Meteorological factors
- Unprecedented rainfall
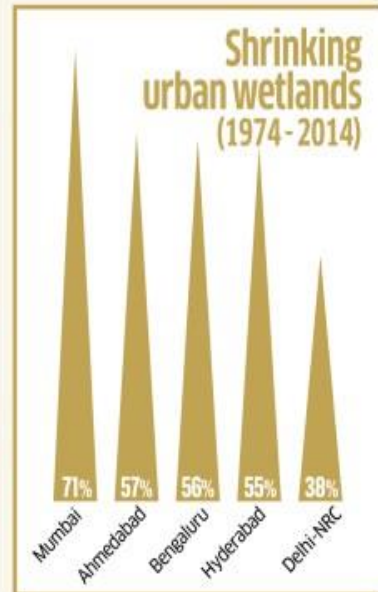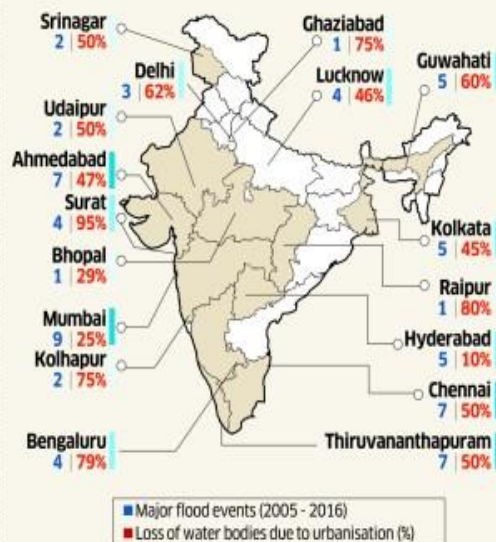- Influence of urban microclimate

Hydrological factors
- Change in the course of rivers
- Presence of high tide
- Syncronisation of runoffs of various parts of the watershed

Human factors
- Rapid urbanisation and deforestation
- Loss of waterbodies
- Encroachment of floodplains and low lying areas
- Damage to drainage channels
- Buildings designed without regard to flood risk
- Lack of water conservation infrastructure

Flooding occurs as waterbodies disappear

- Srinagar 2 | 50%
- Ghaziabad 1 | 75%
- Delhi 3 | 62%
- Lucknow 4 | 46%
- Guwahati 5 | 60%
- Udaipur 2 | 50%
- Ahmedabad 7 | 47%
- Surat 4 | 95%
- Bhopal 1 | 29%
- Kolkata 5 | 45%
- Raipur 1 | 80%
- Mumbai 9 | 25%
- Kolhapur 2 | 75%
- Hyderabad 5 | 10%
- Chennai 7 | 50%
- Bengaluru 4 | 79%
- Thiruvananthapuram 7 | 50%

- Major flood events (2005 - 2016)
- Loss of water bodies due to urbanisation (%)

Shrinking urban wetlands (1974 - 2014)

- Mumbai 71%
- Ahmedabad 57%
- Bengaluru 56%
- Hyderabad 55%
- Delhi-NRC 38%

CITIES AND THE YEAR THEY SAW MAJOR FLOODS

Mumbai: 2005 - Present; Bengaluru: 2005, 2007, 2015, 2020; Chennai: 2002, 2004, 2005, 2006, 2007, 2015; Ahmedabad: 2017; Kolkata: 2007, 2017; Hyderabad: 2020

PREVENTING FLOODS IN BENGALURU

1. Desilt and deepen existing stormwater drains
2. Implement rainwater harvesting facility in all buildings
3. Remove encroachments on waterbodies, stormwater drains
4. Remove pavements to reduce surface run-toff of water

RAINWATER HARVESTING

2017: Rainwater harvesting made compulsory for houses built since 2009 on 1,200 sq ft and above.

1.26 lakh buildings have installed RWH systems

EXPECT MORE FREQUENT FLOODS IN BENGALURU

- Green Cover
- Built-up area

- 1973: 68.2% | 7.97%
- 2010: 23.41% | 54.42%
- 2020: 2.96% | 93.3%
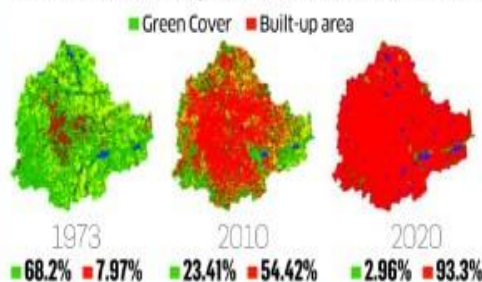
Encroachment of waterbodies in Bengaluru (hectares)

- **836** Total waterbodies
- **27,899** Total area
- **4,533** Encroached area

- Stormwater drain network **842 km**
- **400 km** upgraded

What have the governments done?

- Central government is mapping the surface water bodies under the AMRUT scheme
- In Bengaluru, the Karnataka State Natural Disaster Monitoring Centre has identified areas prone to flooding and is installing sensors to provide early warning
- Chennai has constructed new stormwater drains and repaired the existing network
- The Bruhat Bengaluru Mahanagara Palike is draining lakes so they can act as catchment areas
- Water pumps installed in flood-prone areas in Mumbai as a short-term measure

Government action is falling short

- Focused on response, rather than mitigation
- No effort to revive waterbodies and check unregulated construction
- Insufficient training and facilities given to local governments
- No real-time flood warning systems in urban areas
- New projects ignore guidelines for flood management

Source: Flood risk and adaptation in Indian coastal cities, Causes and Impacts of Urban Floods in Indian Cities: A Review (2020), Frequent Floods in Bangalore: Causes and Remedial Measures (2017) CES, IISc, Causes of Urban Floods in India: Study of Mumbai in 2006 and Chennai in 2015, BWSSB reports; Koliwada Committee Report on Lake Encroachment in Bengaluru - 2017

DH Graphics: Ramu M
Compiled by Prajwal Suvarna

A Climate Change Assessment Report (2020) of the Ministry of Earth Sciences has noted that the increased frequencies of heavy rainfall has enhanced flood risk all over India, particularly in the urban areas.

6.2   CLIMATE CHANGE

Why in News: Climate Change is a clear and present danger. The latest IPCC Assessment Report has warned that if nothing is done, global warming is likely to reach at least +2.8°C by the end of the century.

Developing countries will be most seriously impacted by the impending disasters. Globally, there is a concerted effort to address the challenge under the aegis of the UN Framework Convention on Climate Change (UNFCCC).

At the latest Conference of the Parties (COP) in Glasgow (COP26), many countries including India accepted a long term commitment to reduce carbon emissions to Net Zero. This is a departure from the position in 2015 (Paris, COP21) when most countries had committed only to reducing the emissions intensity of their GDP.

India has set a target to achieve Net Zero by 2070, while most developed countries intend to achieve the target by 2050. There are several challenges in achieving these targets. A research paper titled 'Managing Climate Change: A Strategy for India' authored by a noted economist has suggested several measures to achieve these targets.

INDIA's Climate Targets

- India had submitted its first pledge in 2015 that had three primary targets. The revised climate targets (or INDCs, Intended Nationally Determined Contributions) were officially submitted in August 2022. The new targets are: (a) Reduction in emissions intensity of the GDP by 45% by 2030 (compared to 2005 level); (b) Total non-fossil fuel electricity generation capacity to be raised to 500 Gigawatts (GW) by 2030.
- The long term target is to achieve Net Zero emissions by 2070.
- The targets are contingent on transfer of technology and low-cost international finance including Green Climate Fund (GCF).

- ➤ **The longer-term objective of getting to Net Zero can be achieved by a combination of both demand side and supply side actions.**
- ➤ **Demand Side actions include:** (a) Increased energy efficiency through adoption of energy-efficient technologies, combined with lifestyle changes; (b) Shifting from direct use of fossil fuels to electricity as the final energy source wherever possible.

Supply side actions include: (a) Shifting away from electricity generation using fossil fuels (coal, diesel and gas) to Renewable Energy (RE, mainly solar and wind); (b) Development of green hydrogen as a substitute for fossil fuels in key areas; (c) Expanding forest area to increase natural carbon sinks; (d) Developing CCUS techniques (Carbon Capture Utilization and Storage) to make them commercially viable to offset CO_2 emissions from residual use of fossil fuel that may remain.

The Report has provided sector-wise action points for promoting decarbonization.

6.3   BLUE TRANSFORMATION

Why in News: The Food and Agriculture Organization (FAO) released a document titled 'Blue Transformation - Roadmap 2022–2030'.

Blue Transformation is a targeted effort by which agencies, countries and dependent communities, use existing and emerging knowledge, tools and practices to secure and sustainably maximize the contribution of aquatic (both marine and inland) food systems to food security, nutrition and affordable healthy diets for all.

Key highlights of the report

- This document outlines a roadmap for the transformation of aquatic food systems – **'Blue Transformation',** providing a vision for the FAO's work on aquatic food systems for the period 2022–2030.
- **This roadmap for Blue Transformation aligns with the 2021 Declaration for Sustainable Fisheries and Aquaculture of the Committee on Fisheries (COFI) of the Food and Agriculture Organization of the United Nations (FAO) and FAO's Strategic Framework 2022–2031.**
- It focuses on the elements that would maximize the contribution of aquatic food systems to the Sustainable Development Goals (SDGs).
- The roadmap recognizes the importance of aquatic food systems as drivers of employment, economic growth, social development and environmental recovery, which all underpin the SDGs.
- It also recognizes the need to support the 2030 Agenda through the transformation to more efficient, inclusive, resilient and sustainable aquatic food systems for better production, better nutrition, a better environment, and a better life, leaving no one behind.
- It provides an overall framework to support planning, implementation, monitoring and communication of FAO Fisheries and Aquaculture Division (NFI)'s work.

➢ **World Water Development Report**

Why in News: Recently, The World Water Development Report of 2022 'Groundwater: Making the invisible visible' was released by UNESCO.

- It was officially launched by the UNESCO Director General at the 9th World Water Forum in Dakar, Senegal.
- It has encapsulated global concern over the sharp rise in freshwater withdrawal from streams, lakes, aquifers, and human-made reservoirs leading to water scarcity being experienced in different parts of the world. Key findings of the report
- Groundwater provides half of the volume of water withdrawn for domestic use by the global population.

Challenges: It is often poorly understood, and consequently undervalued, mismanaged and even abused.

Recommendations

- There is a need to manage Groundwater sustainably, with the help of an enabling and effective legal and institutional environment.
- It suggests codifications of the international customary law principles that govern the trans-boundary aquifers (engaged by the international boundary lines of States).
- The countries are invited to commit to developing an adequate and effective framework for groundwater governance that includes, laws, regulations, and their enforcement.
- It promotes, SDG 6 'Ensure availability and sustainable management of water and sanitation for all'.

➢ **One Water Approach**

Why in News: The United Nations has estimated that by the year 2050, four billion people will be seriously affected by water shortages, pushing the One Water approach towards all sources of water.

One Water approach: One Water Approach, also referred to as Integrated Water Resources Management (IWRM), is the recognition that all water has value, regardless of its source.

- It includes managing that source in an integrated, inclusive and sustainable manner by including the community, business leaders, industries, farmers, conservationists, policymakers, academics and others for ecological and economic benefits.

- It is an "integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability meeting both community and ecosystem needs.
- One Water is the future of the water industry when the barriers conventionally separating wastewater, storm water, drinking water, groundwater and the reuse and re-utilisation are broken down, many benefits realized.

Characteristics

- **All Water has Value:** The mindset that all water has value — from the water resources in our ecosystems to our drinking water, wastewater and storm water.
- **A Multi-faceted Approach:** Our water-related investments should provide economic, environmental, and societal returns.
- **Utilising Watershed-Scale Thinking and Action:** It should respect and respond to the natural ecosystem, geology, and hydrology of an area.
- **Partnerships and Inclusion:** Real progress and achievements will only be made when all stakeholders come forward and together will take a decision.

➤ **Global Alliance For Industry Decarbonization**

Why in News: International Renewable Energy Agency (IRENA), cofounding partner Siemens Energy, and 13 companies including Tata Steel and Jindal Steel Works have launched the Global Alliance for Industry Decarbonization.

- New alliance aims to accelerate net zero ambition and de-carbonisation of industrial value chain in pursuit of the climate goals of the Paris Agreement.
- Strengthens dialogue and coordinates activity industrial investors from the general public and the private sector.
- The first meeting of the Alliance, which was established under The Bali Declaration is planned for COP27 November 2022 in Sharm El Sheikh, Egypt.

• Decarbonization means the process of reduction human-caused carbon dioxide (CO_2) emissions activity in the atmosphere. It plays a very important role in limiting global warming up.

- Decarbonisation would result in
  - ✓ Low-carbon replacement with an alternative fuels, electrification, renewable energy sources, etc.
  - ✓ Life cycle supply chain neutrality evaluation, sustainable procurement practices etc.

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 ROAD SAFETY IN INDIA

Why in News: The National Crimes Records Bureau released the report on Accidental Deaths in India (2021) in the last week of August 2022. The Report highlighted that the number of fatalities due to road accidents, 155,622 in 2021, had reached the highest level since 2014.
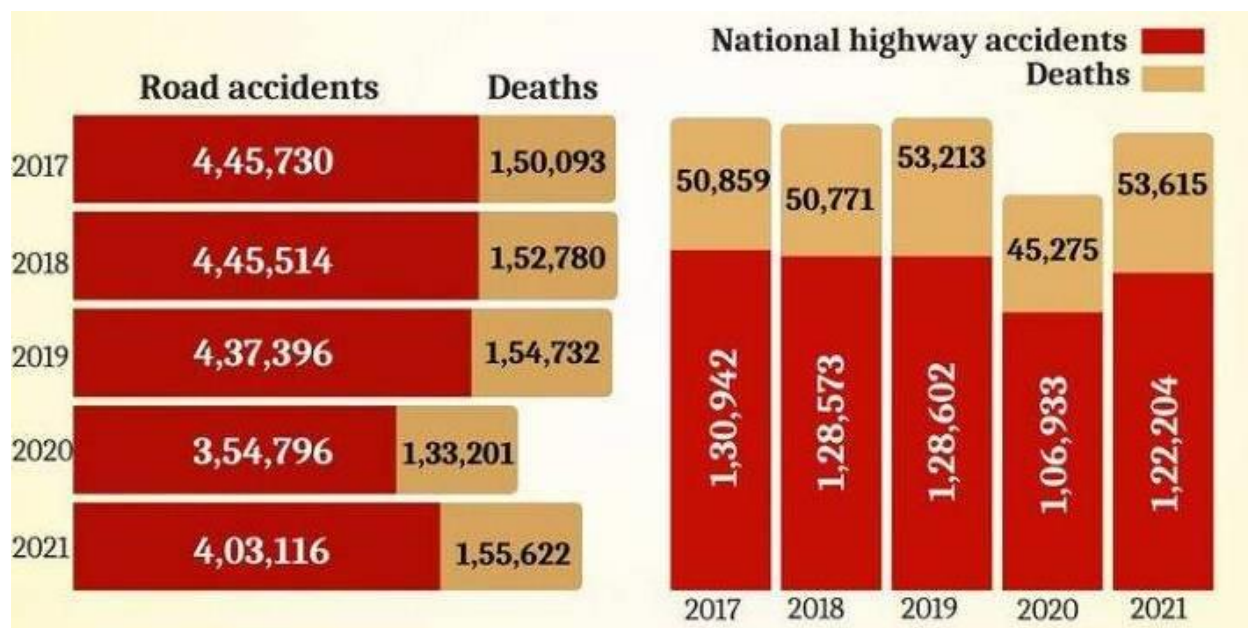
As concerns were being raised on the spike in the number of death, came the sad news of demise of industrialist Cyrus Mistry along with a fellow passenger, in a road accident. Police sources were quoted as saying that the passengers were not wearing their seat belts. These developments have brought the issue of road safety to limelight.

The tragic and avoidable accident indicate lack awareness about the car safety deployments and their enforcement by road safety authorities.

Despite the innumerable road safety campaigns and awareness drives, the road safety remains poor in India. India is ranked among the top countries in terms of accident related deaths ~430 lives are lost daily due to road accidents.
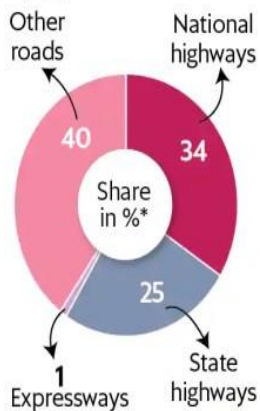
Road Accidents in India

According to the NCRB data, over 1.55 lakh lives were lost in road crashes across India in 2021 or 18 deaths every single hour. This is the highest death in any year. The number of accidents and deaths had decreased in 2020 due to lockdowns and travel restrictions. The number of accidents in 2021 were less than pre-pandemic levels, but the number of deaths have risen.

	Road accidents	Deaths
2017	4,45,730	1,50,093
2018	4,45,514	1,52,780
2019	4,37,396	1,54,732
2020	3,54,796	1,33,201
2021	4,03,116	1,55,622

National highway accidents / Deaths

Year	National highway accidents	Deaths
2017	1,30,942	50,859
2018	1,28,573	50,771
2019	1,28,602	53,213
2020	1,06,933	45,275
2021	1,22,204	53,615

- States of Tamil Nadu (57,000), Madhya Pradesh (49,500), Uttar Pradesh (36,500), Kerala (33,000) and Maharashtra (30,000) reported high number of accidents. Deaths per 100 km of National Highways have come down from 44 in 2018 to 40 in 2021.

- **Two-wheelers are most susceptible to fatalities due to road accidents. Of the total deaths in road accidents, 44.5% were riders of 'two-wheelers' followed by cars (15.1%), trucks/lorries (9.4%) and buses (3%).**

- **According to World Bank report ('Traffic Crash Injuries and Disabilities: The Burden on India Society')** India accounts for 11% of the global death in road accidents despite having just 1% of the world's vehicles. The road accidents costs INR 6 lakh crore or 3.14% of Gross Domestic Product (GDP). (However, the Ministry of Road Transport and Highways (MoRTH) estimates the socio-economic costs of road crashes at INR 1.5 lakh crore, or ~0.77% of the GDP).

- The report pointed out that there is a distinct correlation between socio-economic status and road use patterns in low- and middle-income countries like India and 'poor people are more likely to be involved in a road traffic crash'.

- **According to an IIT Delhi report**, while the national highways constitute only 2% of the total length of roads in India, they account for ~35% of the fatalities.
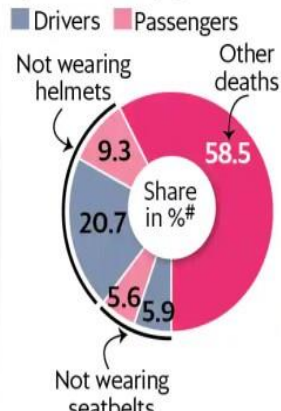
The anatomy of road accidents: where they happen and who they kill
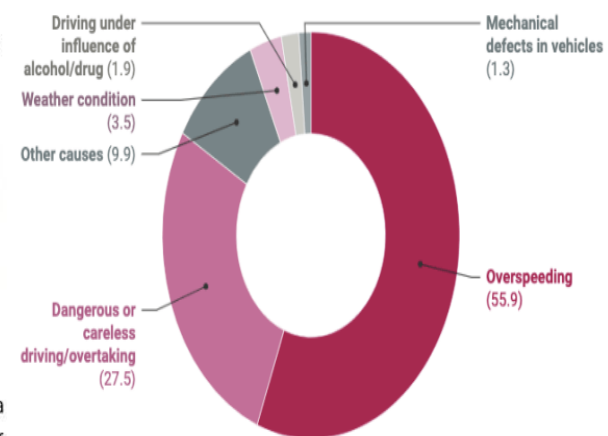
By type of roads

Other roads — 40
National highways — 34
Expressways — 1
State highways — 25

Share in %*

By use of safety gear

Drivers   Passengers

Not wearing helmets — 9.3
Other deaths — 58.5
20.7
Not wearing seatbelts — 5.6   5.9

Share in %#

*2019 to 2021

#2020 data

Over speeding is responsible for a majority of lives lost on roads

Road accident deaths, by cause (in %)

Driving under influence of alcohol/drug (1.9)
Weather condition (3.5)
Other causes (9.9)
Mechanical defects in vehicles (1.3)
Overspeeding (55.9)
Dangerous or careless driving/overtaking (27.5)

Source: National Crime Records Bureau; Ministry of Road Transport and Highways

WHY WE ALL NEED TO BUCKLE UP INSIDE A CAR

In a country that accounts for 10% of all road deaths in the world, the fatal car crash which killed former Tata Sons chairman Cyrus Mistry has once again drawn attention to the scanty use of seat belts. Government agencies say they plan to create more awareness for new licence applicants to ensure cars are not driven until all occupants, including those in the rear, have buckled up. Mistry and his friend Jehangir Pandole, who also died in the crash, were in the rear seat and not strapped in. **Somit Sen & Dipak Dash** report

SEAT BELT LAW

Central Motor Vehicle Rule 381(3) mandates occupants of front seats and those occupying front-facing rear seats must wear seat belts while vehicle is in motion

Rule came into effect from 2002

PUNISHMENT/FINE

Motor Vehicle Amendment Act specifies a fine of ₹1,000 for violation, but states notify their own rates. In Maharashtra, fine for not wearing seat belts and helmets is ₹500. Transport activists have demanded a hike in fines

ACTION TAKEN

➤ Mumbai traffic police have been fining car drivers for not wearing seat belts. But no case or challan is filed for not wearing seatbelts in the rear

➤ **Transport commissioner Avinash Dhakne** told TOI fines have been imposed near toll nakas when passengers are found in the rear without seatbelts. However, no data is maintained by govt on such offences

ADVANTAGES OF HAVING SEAT BELT FASTENED

Reduces risk of a fatal injury up to 50% in case of front seat passengers

In front row, buckling up protects passengers from impact of expanding airbags

Experts say airbags and seat belts are designed to complement each other

Belts save lives sometimes even in old cars which don't have airbags

Airbags are designed to cushion the impact while the belt serves to restrain movement. Without belt, airbags are ineffective

PAST STUDIES ON REAR-END SEATBELTS

2019 study by SaveLIFE Foundation, a non-profit involved in road safety, found

only 7% respondents across 11 cities said they used rear seat belts

only 28% were aware that use of seat belts was mandatory

WHO study says use of rear seat belts can cut probability of death by **25%**

Seat belts also prevent excess injury or death for the front seat passenger

Local Circles survey done recently showed 7 out of 10 Indians do not wear a seatbelt when seated in the rear of a vehicle

IMPACT OF A CRASH

➤ Purpose of belt is to restrain you so that you stop with the car. Without the belt, inertia continues to move the body forward at the same velocity until it hits an object inside the car

➤ Experts said even if a person is strapped in and airbags cushion the impact, person may still suffer some injuries

depending on the force of the impact. It could prevent fatalities, but result in abrasions, fractures of the jaw, neck and sometimes, the spine
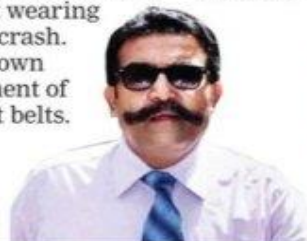
➤ Belts keep you in your seat, prevent person from being thrown against the windshield, or flung inside or outside the vehicle, which is fatal in most cases, police officials said

➤ In a high-speed crash, an unbuckled passenger can turn into a heavy projectile and hurt/kill other vehicle occupants wearing belts

➤ Though seat belts prevent deaths by reducing head injuries, they can still damage by the impact associated with the force of restraint on a passenger

❝ I had made it mandatory in Kerala and fined people in rear seats for not wearing seat belts in 2013. Those on rear seats not wearing belts can face maximum impact during a crash. Despite several crashes involving well known personalities, there is no proper enforcement of the law nor awareness about rear end seat belts. It is high time we implement the law and save lives

— **Rishi Raj Singh,** Former Kerala transport commissioner

INDIA: INJURIES, DEATHS DUE TO NOT WEARING SEAT BELT

Year	Category	Value
2018	Drivers	9,349
	Passengers	15,086
2019		9,562
		11,323
2020		7,810
		7,336
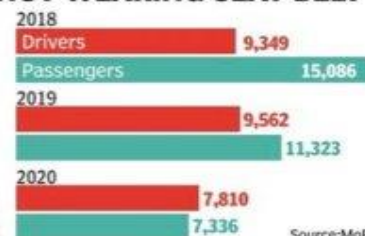
Source:MoRTH

7.2 EDUCATION FOR TRIBALS

Why in News: The intention of any training machine is to ensure inclusive and equitable excellent training at all levels of faculty education. An inclusive schooling machine ensures that no child loses any opportunity to research and excel because of the circumstances of beginning or heritage.

To ensure inclusive schooling for tribals, the Ministry of schooling and Ministry of Tribal Affairs were enforcing various schemes regarding training, fitness, economic empowerment, etc. inside the Scheduled Tribe dominated areas of the United States. Many schemes are carried out with unique goal of uplifting the training among tribal groups.
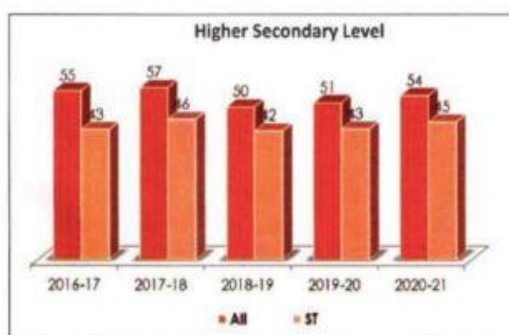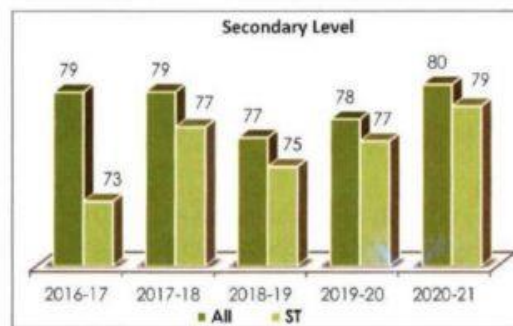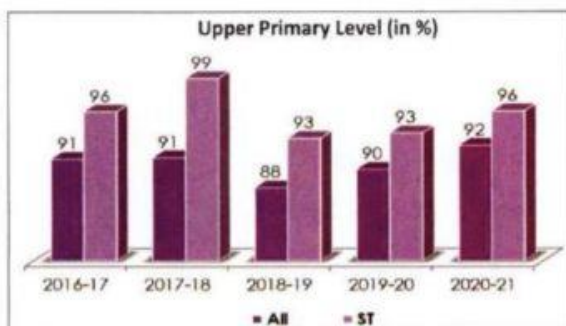
Tribal Education Status

- According to the 2011 Census, Scheduled Tribes (notified by the Government of India under Article 342 of the Indian Constitution) constitute 8.6% of the total population. There are 705 Scheduled tribes living in different parts of India and are notified in 31 States/UTs (Census 2011).
- There is direct correlation between education and economic growth but this impact are evident only after certain period of time as the impact might not be ascertainable immediately.
- The government has formulated a number of schemes for the socio-economic development and adopted a tribal sub-plan. Education was conceived as a means for promoting the overall development of the tribes and also adopted as a strategy for mainstreaming them.

Table 1. Literacy Rates among STs and All (in %)						
Year	All			Scheduled Tribes		
	Persons	Males	Females	Persons	Males	Females
1961	28.30	40.40	15.35	8.53	13.83	3.16
1971	34.45	45.96	21.97	11.30	17.63	4.85
1981	43.57	56.38	29.76	16.35	24.52	8.04
1991	52.21	64.13	39.29	29.60	40.65	18.19
2001	64.84	75.26	53.67	47.10	59.17	34.76
2011	73.00	80.90	64.60	58.96	68.50	49.40

Gross Enrolment Ratio

Upper Primary Level (in %)

Secondary Level

Higher Secondary Level

Genesis of Educational Policies and their Focus on Tribal Education

After independence various commissions were constituted to study, review, analyse and recommend the desired contextual changes in education system.

Education Commissions/Committees formed by the Government of India	
Name	Recommendation
Scheduled Areas and Scheduled Tribe Commission (1961)	Educating the tribes in vernacular language with the support of trained teachers from the tribal communities. Promoting tribal culture and arts, by adding folklore, songs, etc. in the curriculum. Identified the basic issues related to the educational backwardness of tribal communities and the drop-out of the students leading to formation of new tribal education policies.

National Education Commission (1966) (Kothari commission)	Supported the recommendations and suggestions of Debar Commission. Noted the importance of the need for promoting **parental education among tribal population**, and **early childhood learning**.
2nd National Policy on Education (NPE) (1986)	Vision to remove the disparities, inequality and to bring educational opportunity for all. Gave more priority to the promotion of tribal education, such as the establishment of primary schools in tribal areas; address the need for starting Model Residential Schools including Ashram Schools for tribal students in the country; starting Anganwadis in tribal hamlets, etc.
Review of NPE (1990)	Highlighted the issue of removing disparities in education by stating that "the rural areas in general and the tribal areas in particular, have suffered in terms of resources, personnel and infrastructure facilities". Recommended special earmarking for girls within the special component plan for Scheduled Castes and Tribal sub-plan.

Various Scheme on Education

The RTE Act: With the 86th Amendment to the Constitution Article 21A was inserted to ensure that every child has a right to full time elementary education of satisfactory and equitable quality in a formal school satisfying certain norms and standards.

This subsequently resulted in formulation of the Right of Children to Free and Compulsory Education (RTE) Act, 2009 which gave a legal mandate to provide free and compulsory elementary education to every child in the age group of 6-14 years.

Samagra Shiksha Scheme: Department of School Education and Literacy (DoSEL), Ministry of Education is implementing the Samagra Shiksha scheme, effective from 2018-19. Its objective is to bridge gender and social category gaps at all levels of school education. The Scheme reaches out to girls, and children belonging to SC/ST, Minority communities and Transgender.

Ministry of Tribal Affairs has been implementing various schemes relating to education, health, economic empowerment, etc. in the Scheduled Tribe dominated areas of the country.

Eklavya Model Residential School (EMRS): EMRS are targeted to be established in every block having more than 50% ST population and at least 20,000 tribal persons (as per census 2011). These EMRSs are to be at par with Navodaya Vidyalayas with special facilities for preserving local art and culture besides providing training in sports and skill development. The scheme has target

to establish 740 schools. At present out of 684 schools sanctioned, only 378 schools have been made functional with an enrolment of 1.05 lakh students.

PRELIMS UPDATE

❖ **National Commission for Protection of Child Rights (NCPCR)**

- NCPCR has revamped the online portal E-Baal Nidan.
- E-Baal Nidan is a Complaint Management System of NCPCR.
- Through this, any individual or organisation can file complaint relating to the violation of child rights through internet facilities.
  Some of the revamped features include:
- Bifurcation of complaints based on subject matters like POCSO, Labour, Education etc.
- Tracking of complaints at every stage in a more mechanised and time bound manner.
- Option of transferring complaints from NCPCR to the concerned State Commission.

❖ **Global Estimates of Modern Slavery**

It is released by International Labour Organization (ILO).

Modern slavery, as defined in the report, is comprised of two principal components: forced labour and forced marriage. Both refer to situations of exploitation that a person cannot refuse or cannot leave because of threats, violence, deception, abuse of power etc.

Key findings of report

- 50 million people in the world were living in modern slavery in 2021 compared to 40 million in 2016, jump of 25% in last five years.
- Of these, 28 million were in forced labour and 22 million were trapped in forced marriage.

❖ **Gender Snapshot Report 2022**

Why in News: The report was initiated by UN Women, which works for Gender Equality and the United Nations Department of Economic Affairs and Social Affairs (UN DESA).

Key points of the report

- It will take 286 years to reach full sex equality at the current rate of progress.

- By the end of 2022, approximately 383 million women will a girls will live in extreme poverty (for less than $1.90 per day) compared to 368 million men and boys.
- More than 1.2 billion women and girls of reproductive age aged (15-49) live in countries and regions with some limiting access to safe abortion.
- Women have only 2 sciences out of every 10, engineering and information and communication technology jobs worldwide.
- Global challenges such as the COVID-19 pandemic and its consequences, violent conflict and climate change, further exacerbating gender differences.

❖ **Global Ocean Observing System (GOOS)**

World Metrological Organisation recently released Global Ocean Observing System (GOOS) Report Card, 2022.

Report has been released annually since 2017 in partnership with Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) and other GOOS partners.

- GOOS is a permanent global system for observations, modeling, and analysis of marine and ocean data.

It highlighted biological observations for the first time and identifies gap in system.

- It pointed at inequality in operational services across oceans like Indian, Atlantic and Southern Ocean.

Key findings

- Oceans take up 26% of 40 gigatons of carbon emitted to atmosphere annually (48% remains in atmosphere while terrestrial biosphere takes rest).
- Only 5% cent of platforms at sea carry biogeochemical sensor, including carbon dioxide sensors.