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NOTE:

Dear Students,

Memorisation and recollection of information in Current Affairs is as important as understanding the articles. In order to enhance the learning outcomes from the Monthly Current Affairs Magazine, we are introducing following additions:



A thematic based colors has been used in the document in the boxes, tables etc to enable easy identification and recollection of various concepts and topics.



Questions are an important tool to assess and retain information. To enable this we are adding a Smart Quiz at the end of each section in the document for practicing the questions.



A wide variety of infographics have been added to ensure smoother learning experience and enhanced retention of the information. This will also help in effective presentation of information in the answer writing as well.



Places and persons in news are being presented in an objective manner through Maps, Tables & Pictures. This will help in easier recollection of factual information.

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1. POLITY AND GOVERNANCE

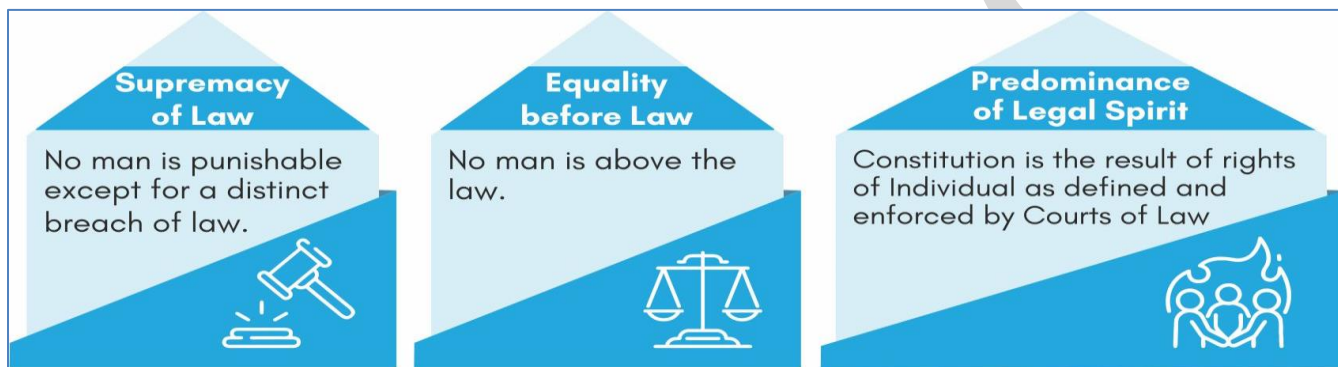
1.1. RULE OF LAW

Why in news?

Recently, Chief Justice of India delivered a lecture on Rule of Law and he advocated that, “the story of ‘Rule of Law’ is nothing but the story of civilization of humans.”

What is Rule of Law?

- According to **A.V. Dicey**, the rule of law means the **absolute supremacy or predominance of the regular law as opposed to the influence of arbitrary power** and excludes the existence of arbitrariness or even of wide discretionary.
- Only a State that is **governed by law imbining ideals of justice and equity** can be said to have the ‘Rule of Law’. According to Prof. Dicey, **Rule of law contain three principles:**



- The origins of the **Rule of Law theory** can be traced back to the Ancient Romans during the formation of the first republic; it has since been championed by several medieval thinkers in Europe such as **Hobbes, John Locke, and Rousseau** through the social contract theory.
- Indian philosophers such as **Chanakya** have also espoused the rule of law theory by maintaining the state is governed, not by the ruler or the nominated representatives of the people but by the law. The expression '**Rule of Law**' has been derived from the French phrase '**la principe de legalite**', i.e., a **government based on the principles of law**.

Rule of Law Vs Rule by Law

In essence, the **Rule of Law is to control the unlimited exercise of the power by the supreme lawmaking authority of the land** while the **Rule by Law is laid down by the supreme lawmaking authority of the land**.

Simply, **Rule of law** is upheld when the laws are guided by the ideals like Justice and Equity. For example, as per Article 14 of the Indian Constitution, the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India and discrimination on grounds of religion, race, caste, sex, or place of birth is prohibited

On the other hand, **Rule by law** can embody ethical as well as unethical laws. For example, the apartheid regime in South Africa was justified based on enacted laws.

Key Principles that emphasize the Rule of Law

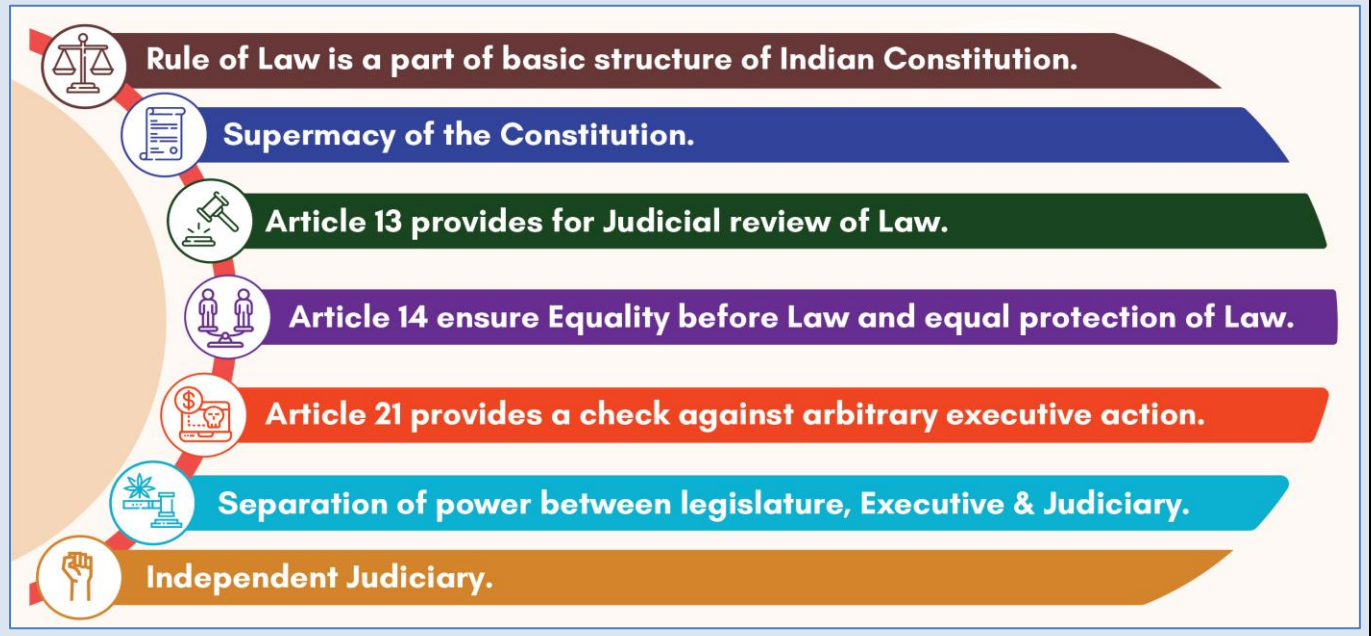
- **Laws must be clear and accessible:** Laws are expected to be obeyed and for that people at least ought to know what the laws are. Hence, laws need to be worded in **simple & unambiguous language**.
- **Equality before the law:** Important aspects of equality before law are having **equal access to justice & ensuring Gender Equality**.
 - Equal access to justice forms the bedrock of the Rule of Law.



- **Right to participate in the creation and refinement of laws:** The very essence of a democracy is that its citizenry has a role to play, whether directly or indirectly, in the laws that govern them.
 - In India, it is done through elections, where the people get to exercise their universal adult franchise to elect the people who form part of the Parliament which enacts laws.
- **Strong independent judiciary:** The judiciary is the primary organ which is tasked with ensuring that the laws which are enacted are in line with the Constitution.
 - So, judicial review of laws is one of the main functions of the judiciary.

Rule of Law & Indian Constitution

Rule of law is a foundational pillar of Indian Constitution and is embedded in different provisions of the Indian Constitution.



What are the challenges in implementation of Rule of Law?

- **Challenges rooted in laws and legislative framework:**
 - **Archaic Laws:** Laws which are obsolete, redundant, repetitive, and irrelevant to the current times, make the legal process long, expensive, and time-consuming.
 - **Multiplicity of laws:** The multiplicity and complexity of laws make compliance, deterrence, and effective enforcement difficult if not impossible. The result is circumvention by citizens and businesses, making them vulnerable to harassment from state functionaries.
 - **Criminalization of Politics:** The proportion of elected candidates with criminal cases, which stood at 15% in the year 2009, rose up to 17% in 2014 election and has further gone up to an excruciating 19% in 2019 election in India as reported by the Association for Democratic Reforms (ADR).
- **Challenges rooted in implementation of legislations:**
 - **Administrative Challenges:** Colonial-era laws, deep politicization, and an over-centralized hierarchy have also burdened the police.
 - **Law as a tool of oppression:** Using law for oppression illustrates a tear in the **fabric of constitutionalism** and **the rule of law** in India.
 - ✓ For example, sedition case registered against senior journalist Vinod Dua for criticising the government's handling of the Covid-19 lockdown indicates rule by law rather than rule of law.
- **Challenges rooted in upholding justice:**
 - **Overburdened Judicial System:** Pending court cases have continued to rise gradually over the past year, straining the already overburdened judicial system. India now has almost 4 crore pending cases in the Supreme Court, high courts and the numerous subordinate courts.
 - **Influence of social media:** The new media tools have enormous amplifying ability and hence judges should not be swayed by the emotional pitch of public opinion either, which is getting amplified through social media platforms.
 - **Lack of access to justice:** Lack of access to justice for vulnerable sections due to poverty, illiteracy violates fundamental aspect of natural justice.

What can be done to overcome these challenges?

- **Repeal Archaic Laws:** The revising, repealing, and updating of old laws are sorely needed—and greater precision in the drafting of replacement language is essential.
 - For example, legislative consolidation and simplification is the model established by the Financial Sector Legislative Reforms Commission.
- **Safeguards against misuse of Laws:** Proper legal and concrete evidence has to be there to prevent misuse of law and there should be close scrutiny at every level.
 - Different agencies of state should ensure that due process of law is applied while dealing with various cases under legislations like UAPA, etc.
- **Curbing Criminalization of Politics:** As recommended by the **Law Commission of India's report on Electoral Disqualifications**, by effecting disqualification of tainted politicians at the stage of framing of charges, with adequate safeguards, the spread of criminalization of politics may be curbed.
- **Use of Information technology (IT) solutions:** The use of technology for tracking and monitoring cases and in providing relevant information to make justice litigant friendly.
 - **Electronic filing of cases:** e-Courts are a welcome step in this direction, as they give case status and case history of all the pending cases across High courts and Subordinate courts bringing ease of access to information
- The **Economic Survey 2018-19** has suggested formation of **Indian Courts and Tribunal Services** to provide administrative support functions needed by the judiciary and identify process inefficiencies and advise the judiciary on **legal reforms**.

1.2. CITIZEN'S CHARTER

Why in news?

Recently, the **Ministry of Panchayati Raj (MoPR)** in collaboration with **National Institute of Rural Development and Panchayati Raj (NIRDPR)** has released a **Model Panchayat Citizens Charter framework**.

Model Panchayat Citizens Charter

Panchayats in India constitute the **third tier of government in the rural areas**. They are **responsible for delivery of basic services as enshrined under article 243G** of the Constitution of India, specifically in the areas of Health & Sanitation, Education, Nutrition, and Drinking Water.

- **The basic objective** of the Gram Panchayat Citizen Charter is to empower the citizens in relation to public services and to **improve the quality of services without any prejudice**, and in accordance with the **expectations of the citizens**.
 - It **brings professionalism in Panchayat functioning** and helps to reach out to all sections of community without any discrimination.
 - The standards committed by the Panchayats are **useful yardsticks for monitoring and evaluation of service delivery**.
 - It will help in making the **citizens aware of their rights** on the one hand, and to **make the Panchayats and their elected representatives directly accountable to the people**, on the other hand.
- It has been prepared for **delivery of the services across the 29 sectors**, aligning actions with localised **Sustainable Development Goals (SDGs)**.
- It would **ensure transparent and effective delivery of public services** for sustainable development and enhanced citizen service experiences, **deepening inclusive and accountable Local Self Governments** by incorporating diverse views while designing and delivering services.

National Institute of Rural Development and Panchayati Raj (NIRDPR)

- It is an **autonomous organization** under the Ministry of Rural Development and a premier **national centre of excellence in rural development** and Panchayati Raj.
- It is recognized internationally as one of the **UN-ESCAP (Economic and Social Commission for Asia and the Pacific) Centres of Excellence**.
- Its vision is to **focus on the policies and programmes that benefit the rural poor**, strive to energise the **democratic decentralization processes**, improve the operation and efficiency of rural development personnel, **promote transfer of technology** through its social laboratories, **technology parks** and create environmental awareness.
- It **studies the functioning of the Panchayati Raj Institutions (PRIs)** and rural development programmes across the States.

How did the concept of Citizen charter evolve?

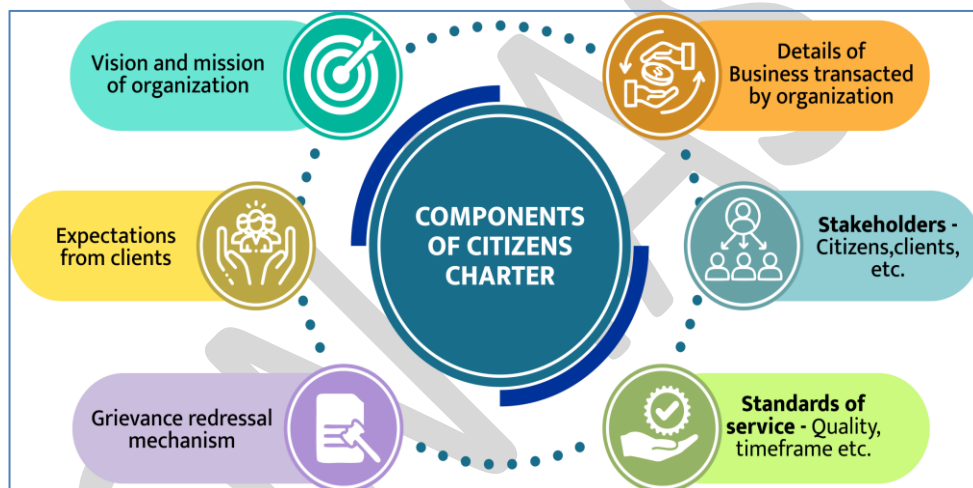
- The concept was **first articulated and implemented in the United Kingdom in 1991** with an aim to improve the quality of public services for the people of the country.
- Originally, **six principles of the Citizens Charter movement** are framed. (Refer infographic)
- **India adopted citizen's charter in 1997** at Conference of Chief Ministers of various States and Union Territories held in New Delhi.
 - The **Department of Administrative Reforms and Public Grievances (DARPG)** initiated the task of coordinating, formulating and operationalising Citizen's Charters.
 - The **Right of Citizens for Time Bound Delivery of Goods and Services and Redressal of their Grievances Bill, 2011 (Citizens Charter)** seeks to create a mechanism to ensure timely delivery of goods and services to citizens. However, it lapsed due to the dissolution of the Lok Sabha in 2014.

What is Citizen Charter and why is it significant?

- Citizens' Charters initiative is a response to the quest for solving the problems **which a citizen encounters**, day in and day out, while dealing with the organizations providing public services.

Key features of citizen charter:

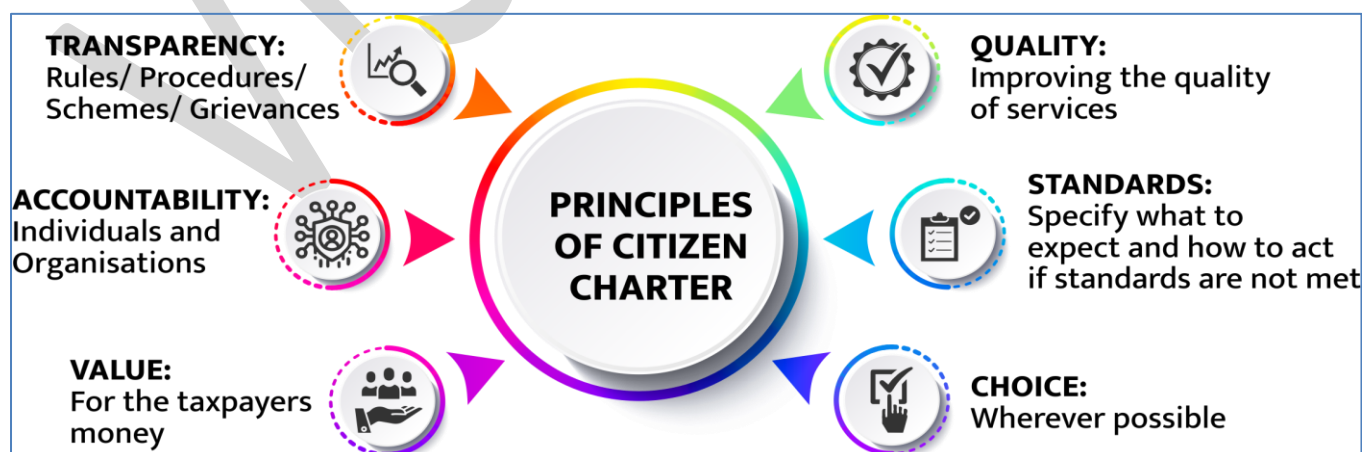
- It is a **written, voluntary declaration** by service providers about service standards, choice, accessibility, non-discrimination, transparency, and accountability.



- It is **not legally enforceable** and, therefore, is **non-justiciable**.

Significance of Citizen Charter

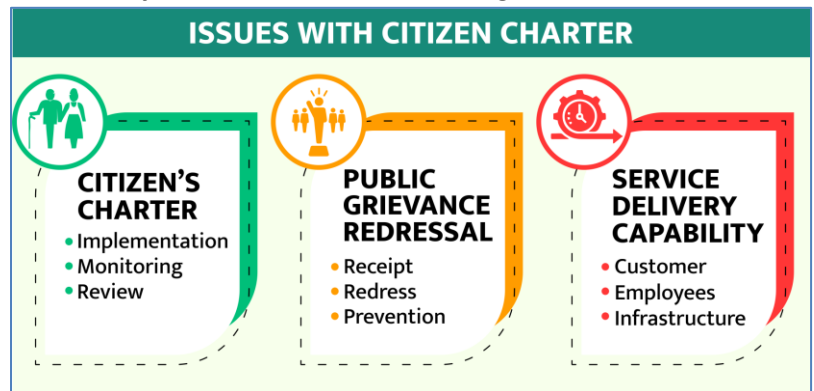
- It is a **tool to achieve good governance**. The three essential aspects emphasised in good governance are **transparency, accountability and responsiveness** of the administration.
- It **provides services to the people in a time bound manner, redressing their grievances** and improving their lives.
- It **enshrines the trust between the service provider** and its users and empowers the citizen in relation to public service delivery.



Challenges in implementing Citizens Charter (CC)

- **Issues with respect to design of CC:**
 - **Difficult language:** The effectiveness of CC is questioned on many accounts. Often, the citizen charter is published in a difficult language which is not easily understandable.

- **Rarely updated:** Citizens Charters are rarely updated which makes it a **one-time exercise**, frozen in time.
- **Devoid of participative mechanisms:** In most of the cases, it is not formulated through a consultative process with staff who will finally implement it. **End-users, Civil society organizations and NGOs are not consulted** either when citizens' charters are drafted.
- **Issues related to Implementation of CC:**
 - **Standards of delivery:** Measurable **standards of delivery are rarely defined** that makes it difficult to assess whether the desired level of service has been achieved or not.
 - **Uniform CC for all agencies:** There is a tendency to have a uniform citizen's charter for all agencies under the same parent organization. **CC has still not been adopted by all Ministries/Departments** which overlooks local issues. Also, there is **lack of diversity** in citizen charter across all agencies.
- **Issue related to citizens:**
 - **Information asymmetry:** There is **lack of awareness regarding the charter**, and departments are reluctant in handing out punishments for non-compliance with it.
 - **Lack of interest:** Organizations are generally disinterested in following through with the standards committed in the CC since there is no incentive or motivation to enforce it on their employees.
- **Issue related to grievance redressal:**
 - **Lack in Accountability:** In case of most organisations, **no reporting and periodic review mechanism** has been evolved to assess the implementation of Charter. Even the Annual Report does not include a review of Charter implementation or plans for implementation.
- **Issues related to human resource:**
 - **Lack of trained staff:** In many cases, the **concerned staff were not adequately trained**. For any Charter to succeed the employees responsible for its implementation should have proper training.
 - **Transfer of staff:** Sometimes, **transfers and reshuffles of concerned officers** at the crucial stages of formulation/implementation of the Citizen's Charter in an organization severely **undermines the strategic processes which were put in place and hampers the progress** of the initiative.

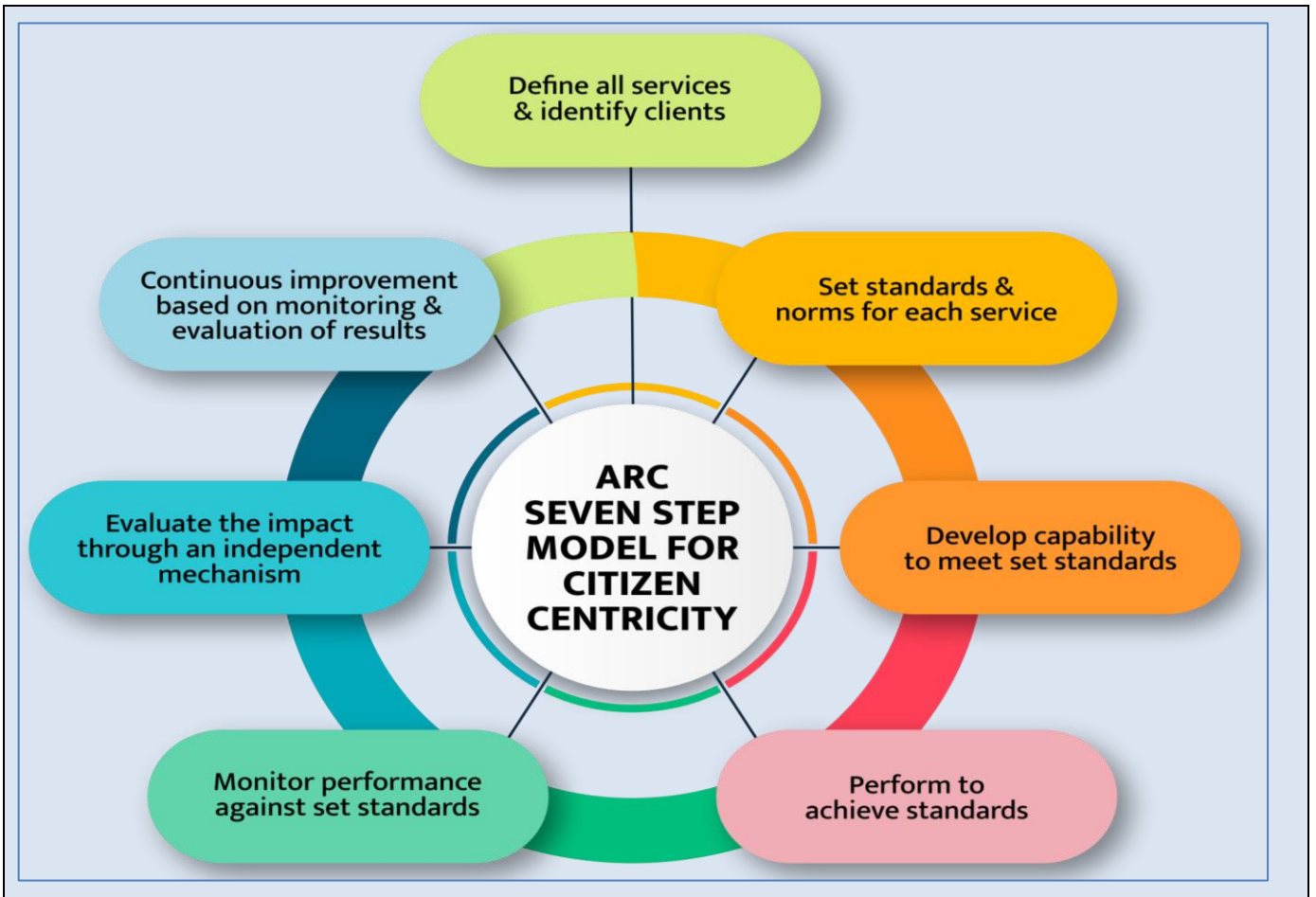


Way Forward

- **Clarity and Precision in Standards:** To deliver on Citizens Charter's purpose, it is important to include precision into standards and commitments to **address the ambiguous vision and mission statements**.
- **Participatory Structures:** **Effective monitoring and evaluation system** ensures regular review of the performance on the Charter and thereby make the **organization participatory, responsive, and accountable**.
- **Easy language:** Effort should be made to use **local language** while formulating the Citizen Charter.
- **Sevottam (Service Delivery Excellence Model):** It can help in **improving the quality of public service delivery**, effective grievance redressal mechanism, and **successful implementation of Citizen's Charters**.
- **Capacity-Building Workshops:** For enhancing the capacity of trainers, staff, effective implementation of charter and generating awareness among the public, capacity building workshops should be organized.
- **Technology upgradation and incorporation** for smooth implementation of rules and guidelines and **revision and updation of the information** about Citizen's Charters.

Recommendations of Second Administrative Reforms Commission (ARC)

- **One size does not fit all:** Formulation of CC should be a **decentralized activity** with the head office providing only broad guidelines.
- **Wide consultation** which include civil society in the process.
- **Firm commitments** to be made: **CC must be precise and make firm commitments of service delivery** standards to the citizens/consumers in quantifiable terms wherever possible.
- **Internal process and structure should be reformed** to meet the commitments given in the Charter.
- **Redress mechanism** is case of default.
- **Periodic evaluation** of Citizen's Charters through an external agency.
- **Hold officers accountable** for results.



SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Polity at our open test online platform for testing your understanding and recalling of the concepts.



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- One senior mentor will be provided for each group consisting of 25 students for regular mentoring, performance monitoring, guidance and support. It will be done through various modes like Google Hangouts & Groups, email and telephonic communication.

LIVE / ONLINE CLASSES

3 AUG, 1 PM | 8 July 5 PM

2. INTERNATIONAL RELATIONS

2.1. NUCLEAR DISARMAMENT

Why in news?

According to recently released **Stockholm International Peace Research Institute (SIPRI) 2021 report**, the overall number of nuclear warheads in global military stockpiles now appears to be increasing.

More about the report

- **Indian nuclear warheads** increased from 150 at the start of 2020 to 156 at the start of 2021.
- **Pakistan and China's nuclear warheads** have also increased.
- **Russia and the U.S.** together possessed over 90% of global nuclear weapons.

These increasing numbers of nuclear warheads highlights a **worrisome sign for Nuclear Disarmament** as it indicates that the declining trend of global nuclear arsenals since the end of the Cold War has stalled.

What is Nuclear Disarmament?

- Nuclear disarmament is the act of **reducing or eliminating nuclear weapons**. It aims towards achieving a state where nuclear weapons are eliminated. The term **denuclearization** is also used to describe the process leading to complete nuclear disarmament.
- **UN sought to eliminate nuclear weapons in the first resolution adopted by UN General Assembly in 1946.**

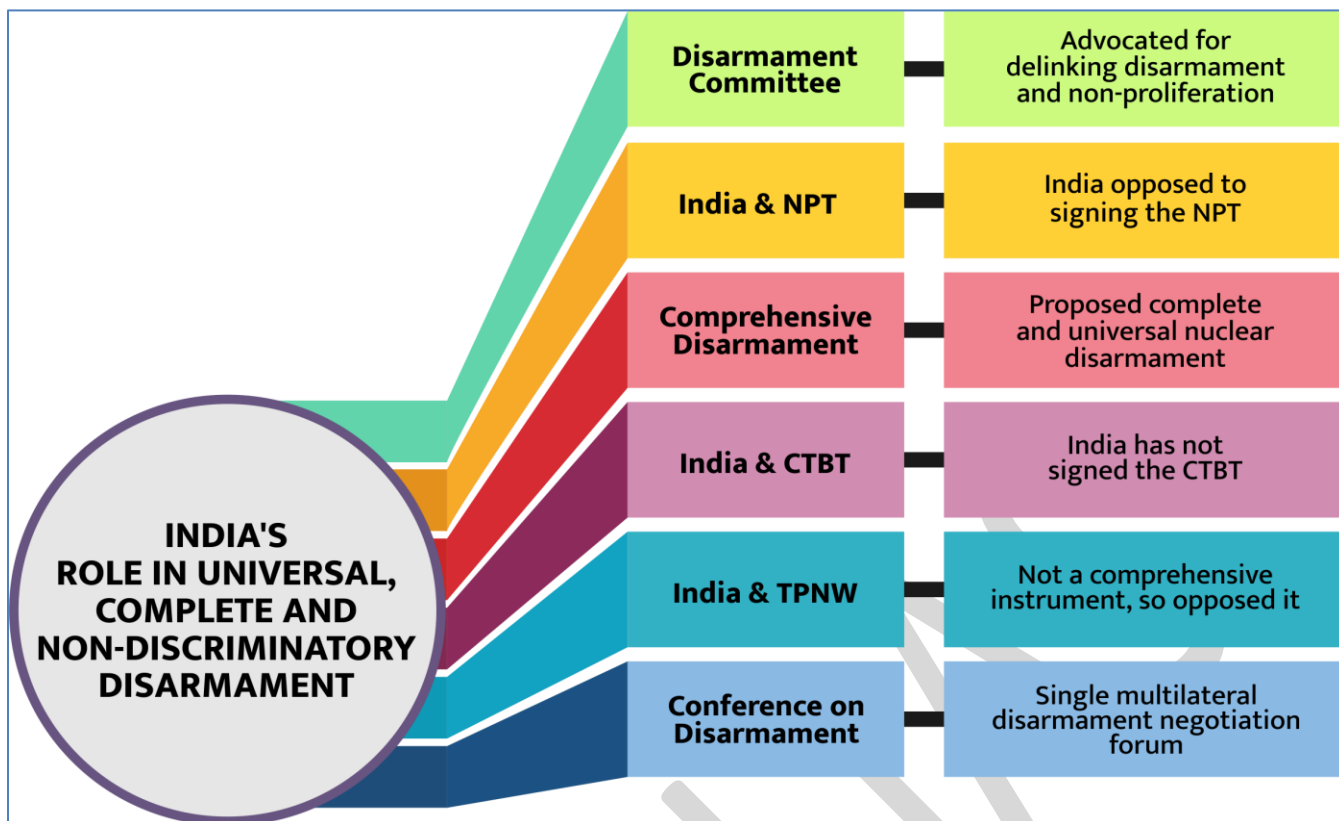
Steps taken till now to achieve nuclear disarmament

Key Treaties for Nuclear Disarmament, Arms Control and Non-Proliferation	Mandate of the treaty
Partial Test Ban Treaty (PTBT), 1963	It prohibits testing of nuclear weapons in the atmosphere, in outer space, under water, or in any area within a state's territory that would cause radioactive fallout outside the state's territory.
Treaty on the Non-Proliferation of nuclear weapons (NPT), 1970	It seeks to prevent the spread of nuclear weapons , to promote peaceful uses of nuclear energy and to move towards nuclear disarmament. ✓ It is the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
Comprehensive Nuclear-Test-Ban Treaty (CTBT)	It is an international treaty that bans all nuclear explosions in all environments. It opened for signature in 1996 but has not yet entered into force.
Treaty on the Prohibition of nuclear weapons (TPNW)	It is a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination. ✓ It includes a comprehensive set of prohibitions on participating in any nuclear weapon activities which include undertakings to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons. ✓ It entered into force recently in 2020.



India's role in global nuclear disarmament

India has always been an **ardent supporter of multilateral nuclear disarmament and non-proliferation efforts.**



Conference on Disarmament (CD)

- It was formed in 1979 as the **single multilateral disarmament negotiation forum** of the international community, after agreement was reached among Member States during the first special session of the UN General Assembly (UNGA) devoted to disarmament (1978).
- Since the conclusion of the negotiation of the CTBT in 1996, the CD remains deadlocked and has not been able to reach consensus on a programme of work and thus to commence substantive deliberations.

India's nuclear doctrine

- Building and maintaining a **credible minimum deterrent**.
- A posture of "**No First Use**". Nuclear weapons will only be used in retaliation against a nuclear attack on India.
- Nuclear retaliation to a first strike will be massive and designed to inflict **unacceptable damage**.
- Non-use of nuclear weapons against non-nuclear weapon states.
- Continued commitment to the goal of a **nuclear weapon free world**, through global, verifiable and non-discriminatory nuclear disarmament.

**To know more about India's Nuclear Doctrine, kindly refer to our Weekly Focus document- "India's Nuclear Doctrine."*



India's Nuclear Doctrine

India's Nuclear Doctrine encompasses the goals and missions that guide the deployment and use of nuclear weapons. The doctrine acts as a necessary evil in the light of various threats including from China and Pakistan. Though the doctrine has served its purpose up till now, the changing circumstances warrant a relook at the current shape of the doctrine



What are the challenges associated with global Nuclear Disarmament?

- **Modernisation of nuclear weapons:** There has been considerable effort at modernizing nuclear inventories among several nuclear weapon states.
 - ✓ For example, U.S. efforts at deploying new low-yield warheads on its nuclear-powered ballistic missile submarines (SSBNs) are a case in point.
- **Lack of Consensus among major powers:** US has eliminated key nuclear agreements such as the **Intermediate-Range Nuclear Forces Treaty (INF)** and the **New Strategic Arms Reduction Treaty (START)** further brought considerable strain on the bilateral relationship between major nuclear powers, USA and Russia, and also on global nuclear order.
 - ✓ Also, US withdrawal from **Joint Comprehensive Plan of Action (JCPOA)** nuclear deal pushed Iran towards Uranium enrichment programs.

- **China's expansionist nuclear policy:** China's rejection to join multilateral discussions on a possible post-INF mechanism and the worsening of relations of the West with China and Russia, as well as the growing adversarial nature of relations between India, Pakistan, and China will likely mean that the pace of nuclear modernization and expansion will continue.
- **Impact of COVID Pandemic:** Worsened China-US bilateral ties, fueled by COVID tensions, coupled with the erosion of global nuclear governance have stirred a nuclear populism in China that calls for a dramatic increase in its nuclear stockpile.
- **Nuclear Activism in Indo-Pacific region:** It is difficult to uphold the policy of nuclear disarmament with **global power shift to Indo-Pacific region** and when the Quad is lobbying to counter Chinese expansionism in this region.

What can be done to reignite nuclear disarmament?

To eliminate nuclear weapons, the international community may take the following steps:

- **Major role by major nuclear powers:** The nuclear-weapon States possessing the largest nuclear arsenals **bear special responsibility** for nuclear disarmament. They should continue to reduce drastically their respective nuclear arsenals on the principle of irreversibility.
- **Renunciation of Nuclear deterrence policy:** All the nuclear-weapon States should renounce the **nuclear deterrence policy** based on the first use of nuclear weapons, undertake unconditionally not to be the first to use nuclear weapons and conclude an international legal instrument to such effect.
 - ✓ Also, there should be no use of nuclear weapons against non-nuclear-weapon States or nuclear-weapon-free zones, and a relevant international legal instrument should be concluded.
- **Creation of nuclear-weapon-free zones:** All the nuclear-weapon States should support the efforts to establish nuclear-weapon-free zones, respect the status of those zones and assume the relevant obligations.
- **Denuclearization:** Based on the above-mentioned efforts, a convention on the **complete prohibition of nuclear weapons** could be negotiated.

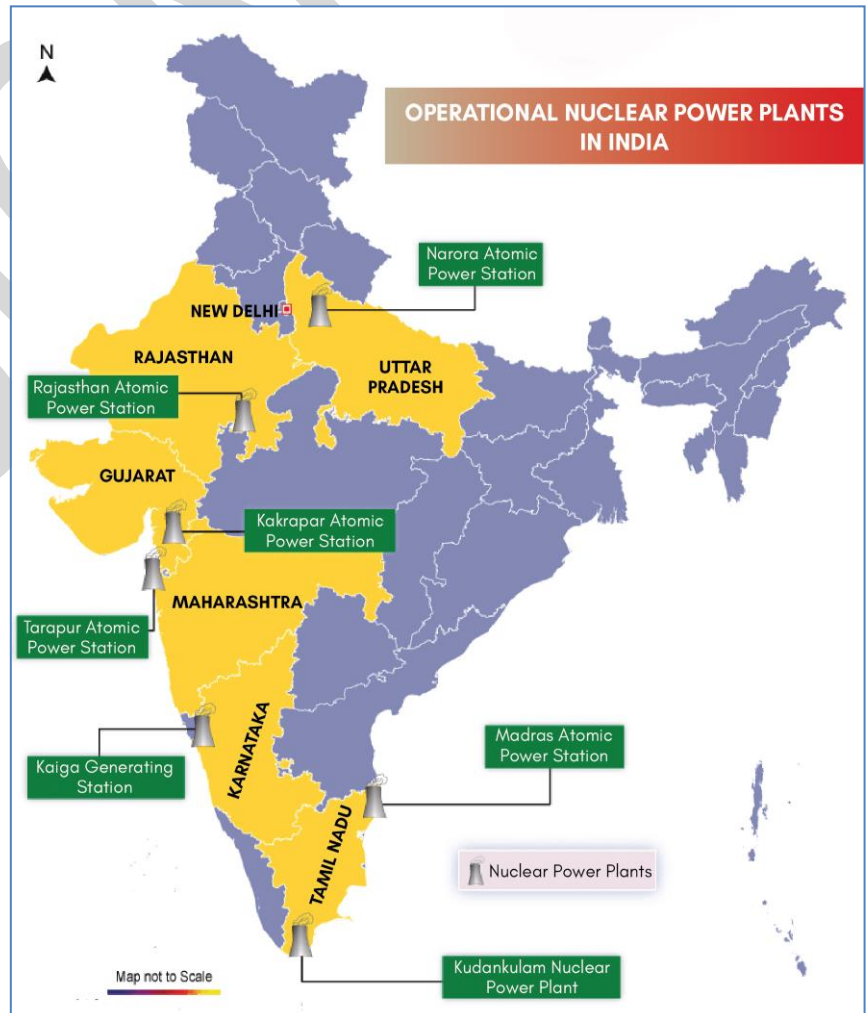
2.2. INDIA'S CIVIL NUCLEAR ENERGY COOPERATION

Why in news?

Recently, Russian nuclear major **Rosatom** began construction of **Kudankulam Nuclear Power Plant (NPP) Unit 5** in India in cooperation with **Nuclear Power Corporation of India Ltd (NPCIL)**, a PSU under the **Department of Atomic Energy (DAE)**.

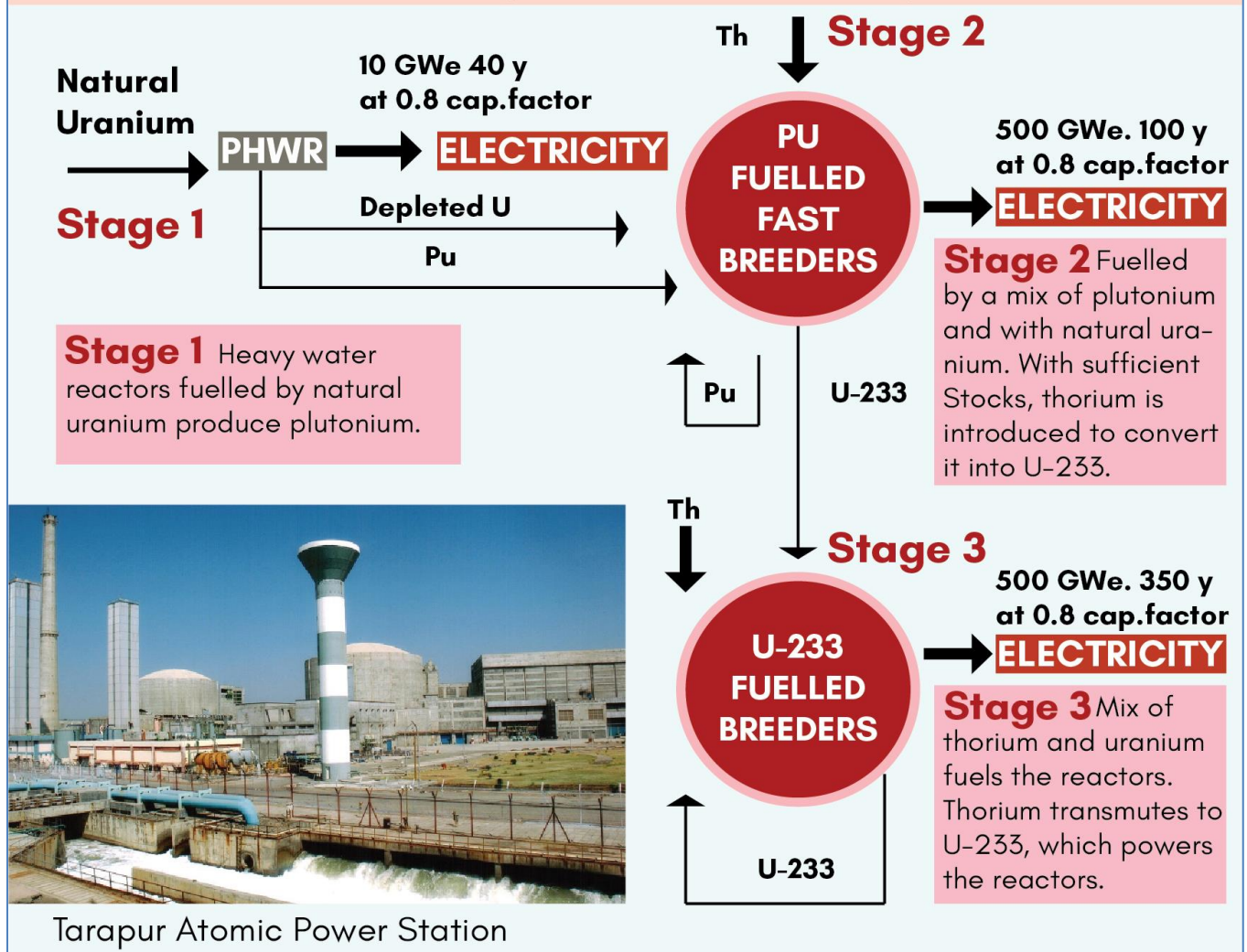
About India's Nuclear Energy Architecture

- At present, India has civil nuclear agreements with 14 countries, namely Argentina, Australia, Canada, Czech Republic, France, Japan, Kazakhstan, Mongolia, Namibia, Russia, South Korea, United Kingdom, US and Vietnam.
- This, is despite India **not being a signatory to the Non-Proliferation Treaty** and operating outside the ambit of the **Nuclear Suppliers Group**.



INDIA'S THREE-STAGE NUCLEAR PROGRAMME

Homi Bhabha envisioned India's nuclear power programme in three stages to suit the country's low uranium resources profile



- A central tenet of these agreements is the focus on the **peaceful purposes of nuclear power** which entails the use of information, nuclear material, equipment, or components in such fields as research, power generation, medicine, agriculture, and industry.
- India has observed a **self-moratorium on conducting nuclear tests** after the second round of Pokhran in 1998 and has abided by the **principles of the NPT** far better than even some of its signatories.
- India has a 3-stage nuclear energy program which is based on a closed nuclear fuel cycle-
 - **Stage-I:** Natural uranium fuelled Pressurised Heavy Water Reactors (PHWRs).
 - **Stage-II:** Fast Breeder Reactors (FBRs) utilising plutonium-based fuel.
 - **Stage-III:** Advanced nuclear power systems for utilisation of thorium.

Nuclear Suppliers Group (NSG)

- It was established in 1974 as a result of successful nuclear test conducted by India (Operation Smiling Buddha or Pokhran-I).
- It is a group of nuclear supplier countries that seeks to contribute to the non-proliferation of nuclear weapons through the implementation of guidelines for nuclear exports and nuclear-related exports.
- **India is not a member of this group.**

What is the need for engaging in Nuclear Energy Cooperation?

- **Sustainable harnessing of energy:** Nuclear energy cooperation is needed for **long-term planning and collaboration** on innovations in reactors, fuel cycles and institutional approaches that will promote the sustainable development of nuclear energy.

- **Expertise sharing:** Such cooperation provides necessary assistance including information, knowledge, financing, human resource development, nuclear infrastructure development, and a feasible technical solution for managing and disposing of spent fuel and high-level waste.
- **Energy Potential:** India depends on importing nuclear fuel as raw material for running its nuclear reactors.
 - Over two-thirds of the world's production of uranium from mines is from Kazakhstan, Canada and Australia.
- **Clean Energy:** In an energy-starved world, the potential of nuclear energy to be an important and cleaner option in India's energy basket must be recognised.
 - India currently runs 22 nuclear reactors with an operational capacity of 6,780 MW which is just 1.97 percent of India's total capacity.
- **Ensuring Safety:** Partnership of countries ensures that new nuclear energy initiatives meet the highest standards of safety, security and non-proliferation.
 - For example, **International Framework for Nuclear Energy Cooperation (IFNEC)** aims to accelerate the development and deployment of advanced nuclear fuel cycle technologies while providing greater disincentives to the proliferation of nuclear weapons.

INDIA'S MAJOR CIVIL NUCLEAR ENERGY CO-OPERATION PROGRAMS

INDIA-FRANCE

- Both had a long history of cooperation since the 1950s as it offered technical cooperation to India on civil nuclear innovation in 1950.
- Following India's 1974 peaceful nuclear explosion, France emerged as the only western country to commend the event, pointing to it as a reflection of India's advancement in the nuclear sector.
- France, in 2008, became the first country to sign a civil nuclear agreement with India following the India-specific NSG waiver.
- According to the agreement, France will construct six European Pressurized Reactors of 1,650 MW each for implementing the 9,900 MW Jaitapur Nuclear Power Project in an expedited manner.
- Recently, France Energy Company EDF has submitted a binding techno-commercial offer to Nuclear Power Corporation of India (NPCIL) for building these six reactors.

INDIA-RUSSIA

- The nuclear cooperation between both dates to the 1960s, when India and the then Soviet Union signed several agreements.
- Initially, focus was on scientific and technical cooperation and key supplier of nuclear fuel to India, during a time of limited progress in India's engagement with the global nuclear architecture.
- In 2008, both signed an agreement for the construction of nuclear power plant at Kudankulam, Tamil-Nadu.
- Both agreed to consider cooperation on the peaceful uses of nuclear energy with third countries like India signing a tripartite agreement with Russia and Bangladesh to work together on the Rooppur Nuclear Power plant in Bangladesh.

US-INDIA CIVIL NUCLEAR AGREEMENT (123 AGREEMENT)

- Through this agreement, United States took India's case to the NSG to grant New Delhi a waiver in order to initiate global civil nuclear trade.
- NSG granted a clean waiver to India in 2008.
- India became the only country with nuclear weapons who is not party to the NPT that was allowed to engage in nuclear trade with the rest of the world.
- In 2009, India signed an agreement with IAEA (called the India Safeguards Agreement) which subjected India's civil nuclear facilities to IAEA safeguards.

INDIA-JAPAN

- India-Japan Agreement for Cooperation in the Peaceful Uses of Nuclear Energy was signed in 2016 and entered into force in 2017.
- A contested aspect of this agreement is the 'Nullification clause', which automatically suspends cooperation between the parties in the case of India conducting nuclear tests.
- The importance of this agreement is evident from the fact that Japan holds a near monopoly on reactor elements of the reactors, such as safety components and domes.

What are the challenges associated with India's civil nuclear engagements?

- **Global Challenges:** A key challenge to India's civil nuclear engagements with other countries is its status as a **non-signatory to the NPT**.
 - Key barriers to India's acceptance within the global non-proliferation regime have been **India's nuclear weapons program**, and its **strained relationship with its neighbor Pakistan** (which is similarly a nuclear weapons state).
 - **China has expressed its strong opposition to India's inclusion in NSG** since India has not signed the NPT Treaty.
- **Domestic Challenges:** Concerns regarding nuclear safety have also led to protests in the domestic front.
 - Concerns such as **diversion of water to the plants, environmental degradation, land acquisition**, as well as issues of rehabilitation have led to protests. For example, the **Jaitapur power plant** in the state of Maharashtra was opposed on the **grounds that it would destroy some 938 hectares of eco-sensitive land**.
- **Issues related to Nuclear Liability:** In wake of lack of adequate compensation for the victims of the Bhopal tragedy, the issue of nuclear liabilities continues to be a challenge for India in its further engagements with other countries for civil nuclear trade.

- **Safety of nuclear and non-nuclear materials:** The driving concern for countries entering into civil nuclear agreements with India has been the threat of nuclear disasters like Chernobyl and Fukushima.

What can be done to overcome these challenges?

- **Taking global leadership role:** India needs to undertake a **proactive role in establishing and improving global mechanisms** through bilateral engagements and multilateral conversations so that states that are engaged in the civil nuclear industry are guided by strict guidelines and regulations.
- **Addressing Global concerns:** India should also undertake **public outreach efforts** that would assuage concerns not only in the domestic context, but also of those of the nuclear supplier countries.
 - **Outlining civil nuclear engagement policies as well as India’s own nuclear security policies** even in broad template could remove many suspicions and concerns of India’s nuclear security policies and practices.
- **Ensuring Nuclear Liability:** The application of **international liability frameworks** can remove the concerns of many supplier parties who may otherwise have been dis-incentivized by the Indian domestic liability law.
- **Ensuring Safety:** At a domestic level, public participation should be incorporated at the planning stage, through initial studies relating to impact on environment, water balance and waste management systems; as well as issues of rehabilitation and resettlement.
 - An example of ensuring safety through an institutional mechanism is the **Environmental Impact Assessment**.
 - Furthermore, **emergency plans prepared by the Atomic Energy agencies** needs to be made available to the public. These plans must be revised frequently and training exercises with police should be conducted.

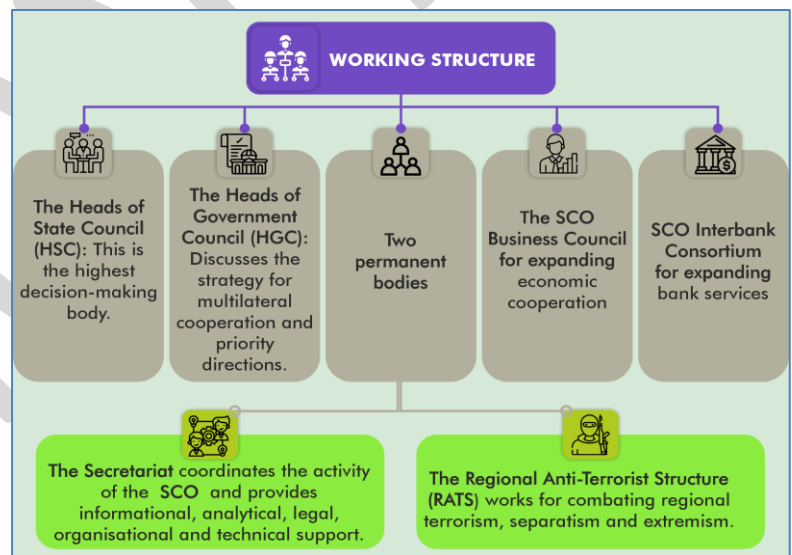
2.3. SHANGHAI COOPERATION ORGANISATION (SCO)

Why in news?

Recently, the 16th meeting of Secretaries of Security Councils of SCO was held at Dushanbe, Tajikistan (current President of the SCO).

More on news

- **India and Pakistan agreed to cooperate** in the joint fight against the threats of “international terrorism”, “extremism”, “separatism” and “religious radicalism”.
- **Special attention** was given to the “current military and political situation in **Afghanistan**” and the risk of “escalation”.
- The meeting also discussed cooperation between member states in **ensuring reliable information security, the joint fight against cybercrime and the issues of biological security and food security.**



About the SCO

- It is a **permanent intergovernmental political, economic, and military organization** founded in Shanghai in 2001 (The precursor group **Shanghai 5** included: China, Kazakhstan, Kyrgyzstan, Russia and Tajikistan).
 - **Regional development and security issues** (terrorism, ethnic separatism, and religious extremism) are its main focus.

Relevance of the SCO for India

- **Global influence of SCO:** 4 of SCO’s members (India, Russia, China and Pakistan) are **nuclear powers** and 2 (Russia and China) are **permanent members of the UN Security Council (UNSC)**.
 - Also, the SCO is considered a counterweight to the North Atlantic Treaty Organization (NATO) as
 - Both the organizations have geopolitical interests in Central Asia and the Gulf.
 - The SCO holds a degree of influence that is greater (in terms of land-mass) than NATO.

- **Controlling regional terrorism:** SCO's defence-centric structures and activities of RATS have achieved considerable successes in curbing regional terrorism.

- **Participant in the political dynamics of Afghanistan:** It is likely that after the withdrawal of US and NATO forces from Afghanistan SCO will start playing a more prominent role.

- The SCO-Afghanistan Contact Group which was suspended in 2009 has also resumed

working since 2017. Thus, SCO could provide a platform to India for engaging in the Afghanistan's political dynamics.

- **Political:** At annual summit of the SCO India gets opportunity to renew bilateral ties with regional countries.
 - The forum also provides India greater visibility in the **affairs of the Eurasian region**.
 - India can also **scuttle influence of Pakistan in Central Asia**.
 - SCO also makes India an active key stakeholder in **shaping the dynamics of politically fragile, Central Asian Region (CAR)** which is also seen as a fertile ground for terrorism and drug trafficking.
- **Economic advantages:** CAR is rich in iron-ore, coal, oil, gas, gold, lead, zinc, molybdenum, uranium, gold, gas and energy gas, etc. India's economic diplomacy in SCO is focused less on Russia, China and Pakistan and more on CARs. Frequent meeting with the leaders of CAR and the India-Central Asia Business Council under the SCO would give fillip to the economic cooperation.
- **Push to regional connectivity:** India's pending energy projects like the TAPI (Turkmenistan-Afghanistan-Pakistan-India) pipeline, IPI (Iran-Pakistan-India) pipeline, CASA (Central Asia-South Asia)-1000 electricity transmission projects all of which are blocked by Pakistan may get a much-needed push through the SCO.

Challenges in the SCO for India



- **Dominance of China:** The SCO is a China dominated organisation. Barring India, the Belt and Road Initiative (BRI) has been endorsed by all other members.
 - BRI is a concern for India as China-Pakistan Economic Corridor (CPEC) violates India's sovereignty. China may try to limit and balance India's influence in the region by supporting Pakistan.
- **Russia-Pakistan-China axis:** Growing closeness of Russia and China adds to the difficulties that India faces due to China-Pakistan axis in the SCO.
 - China has always condoned Pakistan's link with terrorist activities in India. China also used its veto repeatedly against UNSC's blacklisting of Mumbai attack mastermind.
 - Other member countries are also well disposed towards Pakistan. This puts India at the risk of being isolated in the organization.



- **Lack of connectivity with Central Asia and beyond:** A major impediment in connectivity with Central Asia and Eurasia remains the strategic denial of direct land connectivity between India and Afghanistan and beyond by Pakistan.
 - For e.g. India's bilateral trade with Central Asia stands at about \$2 billion against over \$50 billion of China's.

Way ahead for India

- **Maintaining strategic autonomy:** India should retain its independent voice against China's dominance. On BRI, India has articulated its view that connectivity projects must respect the sovereignty, and territorial integrity.
 - The SCO has traditionally adopted a clear **anti-West** posture which **India must avoid** as the US is the biggest card India can play against China.
 - **India-Russia diplomatic relations and India's cultural and historical connect with the CAR could be leveraged** for promoting India's interests in the SCO.
- **Constructively engage Pakistan:** According to the mandates of the SCO bilateral differences cannot hinder working of the SCO. Connectivity is considered as central to cooperation among the SCO members. Therefore, India should mobilize opinion in the SCO to ensure its connectivity projects to extended neighbors are unblocked by Pakistan.
- **Play a constructive role in CAR:** India could play a role in de-radicalisation of youth in Central Asia. It should also leverage its soft power to enhance its spheres of engagements in the field of culture, cuisine, education etc. This will ensure India does not get isolated in the organization.
- **Revitalise connectivity projects:** The opening of Chabahar port and entry into Ashgabat agreement should be utilized for a stronger presence in Eurasia. Also, a clear focus on operationalising International North-South Transport Corridor (INSTC) is needed. This will pave the way for enlarging economic clout in the central Asia which in turn makes India indispensable in the region.

 <p>SMART QUIZ</p>	<p>You can scan this QR code to practice the Smart Quiz of International Relations at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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फाउंडेशन कोर्स सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा 2022

इनोवेटिव क्लासरूम प्रोग्राम



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कक्षाएं ऑनलाइन आयोजित की जाएंगी। ऑफलाइन कक्षाएं सरकारी नियमों और छात्रों की सुरक्षा के अधीन उपलब्ध होंगी।

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का-विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करंट अफेयर्स मैगजीन

DELHI: 15 July | 5 PM | 23 March | 1:30 PM

JAIPUR 28 June | 4 PM

लाइव/ऑनलाइन कक्षाएं भी उपलब्ध

3. ECONOMY

3.1. 4 YEARS OF GST

Why in news?

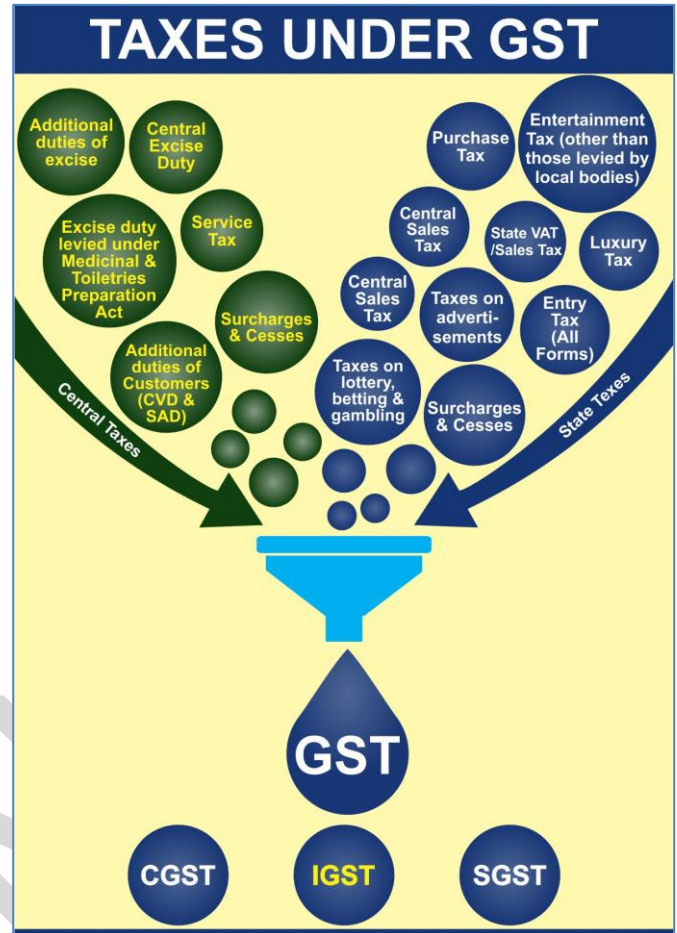
Recently, India marked the fourth anniversary of the Goods and Services Tax (GST).

About Goods and services Tax

- GST is a single domestic indirect tax law for the entire country levied on the supply of goods and services.
- It is a comprehensive, multi-stage, destination-based tax that is levied on every value addition. Under GST, several indirect taxes like excise duty, VAT, service tax, luxury tax etc. **have been subsumed.**
 - However, several goods like Property Tax & Stamp Duty, Electricity Duty, Excise Duty on Alcohol, Basic Custom Duty, Petroleum crude, Diesel, Petrol, Aviation Turbine Fuel, Natural Gas, etc **are not covered under GST.**
- It has multiple slabs- 5%, 12%, 18%, 28% with different products classified in them. Apart from these, GST on gold is 3% and 0.25% on semi-precious and rough stones.
 - Also, a minor portion of all goods and services under the GST regime does not invite any tax, including different salt types, sanitary napkins etc.
- GST rates are decided mutually by States and Center via **GST Council.**
- The GST is levied at every stage of the production process but is collected from the point of consumption (Reverse Charge Mechanism), refunding all parties eventually other than the end consumer.

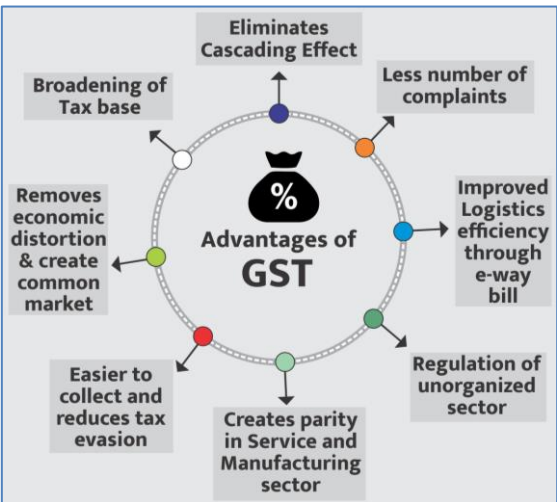
Achievements of GST

- **Widening of India’s tax base:** Tax base has almost doubled from 66.25 lakhs to 1.28 crores in the last four years (2017-2021).
- **Increase in GST revenue collection:** Revenue collection has been over the Rs 100,000 crore mark for eight consecutive months in a row. The revenue collection in FY 2019-20 soared by 42% as compared to the collections made in FY 2016-17.
- **Ease of compliance:** It has also brought in efficiencies in indirect tax compliances and reduced the number of indirect tax authorities that business needed to interact with.
 - “**E-Invoicing**” has also ensured that a trade invoice is identified by a unique identification number which is generated by automated government-backed online portals.
- **Increased Logistics efficiency:** GST has eliminated all the inter-state barriers by removing check-posts, introducing a nationwide e-way bill, eliminating the entry tax. Thus, it has reduced transit time of movement



Reverse Charge Mechanism

- The GST has to be typically paid by the supplier of goods and services. But in some cases, the liability to pay the tax falls on the buyer. This is called reverse charge.
- This is only applicable in certain instances e.g. when a business buys goods or services from a supplier who is not registered to pay GST or in cases of import.

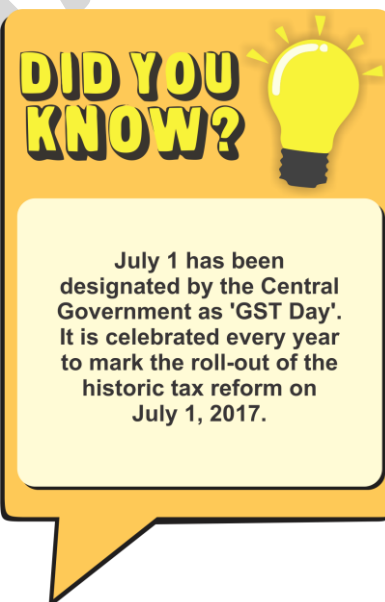


of goods within the country. As per an estimate more than 50% of logistics effort and time is saved in GST regime.

- **Impact on transaction costs:** In previous regime, all the interstate transactions had an additional cost of 2% (Central Sales Tax), which post GST has now been reduced to 0%. This has reduced the transaction cost significantly.
- **Reinforced Cooperative Federalism:** GST council has emerged as a successful example of cooperative federalism and its functioning has been free from political biases.
- **Increase in Transparency:** Taxpayers can track their compliances online on the GST Portal. Also, they can easily get the basic information about any business by entering the respective PAN or GSTIN which has increased transparency in the system.

Challenges

- **Overestimation of GST collection:** In the initial year government has overestimated the GST collection, which was not fulfilled, and hence created a sense of failed taxation regime.
- **Complex tax slabs:** The complex slab structure and continually switching between them has created an undesired confusion in the compliance system. Additionally, fluctuating tax rates often led to unethical profiteering practices.
- **Cumbersome filing structure:** The current GST return filing structure is complex and cumbersome and put too much onus on the taxpayer. The requirement to possess a valid tax invoice/debit note, actual receipt of goods/service by the recipient, tax submission at each level by different seller etc., has deprived the nation of seamless tax regime.
- **Ambiguous and conflicting AAR judgments:** Conflicting rulings from various benches of the Appellate Authority for Advance Ruling across different States has led to confusion among taxpayers. Additionally, more than 80% of rulings, since the establishment of the AARs, have been revenue biased, leading to disgruntled taxpayers.
- **Cracking down on tax evasion and tax fraud:** GST tax evasion and tax fraud, including use of fraudulent invoices, fake e-way bills, etc has led to massive losses in revenue collection.
 - A news report in March 2020 states that India has faced over ₹70,000 crore worth of losses due to tax evasion.
- **Expanding the GST purview:** Many commodities, especially fuel and alcohol are not under the GST purview mainly due to Centre and State being at loggerhead over revenue collections.
 - The Centre and states have been increasingly dependent on excise duties on petroleum products to shore up their revenues. Hence, the GST council has been reluctant to discuss the matter, as around 30 per cent of the states' revenue comes from excise duties on petrol and diesel.
- **Concerns related to compensation to states:** The pandemic and lockdown have intensified the problem of revenue shortfall for States and the Centre, thus leading to the Centre's inability to pay the dues to states on time. This has led to tensions in cooperative federalism, with states getting disenchanted with the system.
 - Also, Central Government's over reliance on Cess and Surcharges has undermined the constitutional arrangement related to fiscal federalism.
- **Delay in reforms:** Falling revenue amid disruptions caused by the pandemic is said to have continuously delayed reforms related to revision of tax slabs, robust compliance regime, etc., has made GST regime lackluster.
- **Transitional Issues:** Even after four years, many assesses are still experiencing technical/legal issues as a result of the transition from the old to the new GST system.



Way Forward

- **Simpler tax structure:** A simpler tax slab structure limiting commodities to three tax slabs is the need of the hour. Experts have recommended a three-slab structure that will help rationalize this indirect tax system.
- **Optimising digital resources:** It can help accelerate the process of claiming input tax credit. It can also increase the capacity of the portal to handle higher numbers of data processing.

- **Robust compliance regime:** To catch the tax evaders indulge in unethical and illegal tax practices the Government should focus on creating a robust, technology driven intelligent GST system.
- **Focus on Cooperative federalism:** The Centre needs to urgently figure out and put to rest the battle between the Central and State Governments on sharing of revenue collections.

3.2. DIRECT MONETISATION OF THE FISCAL DEFICIT

Why in news?

There is a debate whether India should undertake direct monetisation of the deficit by Reserve Bank of India (RBI), given the hurt to its economy caused by second wave of Covid-19 infections.

More on the news

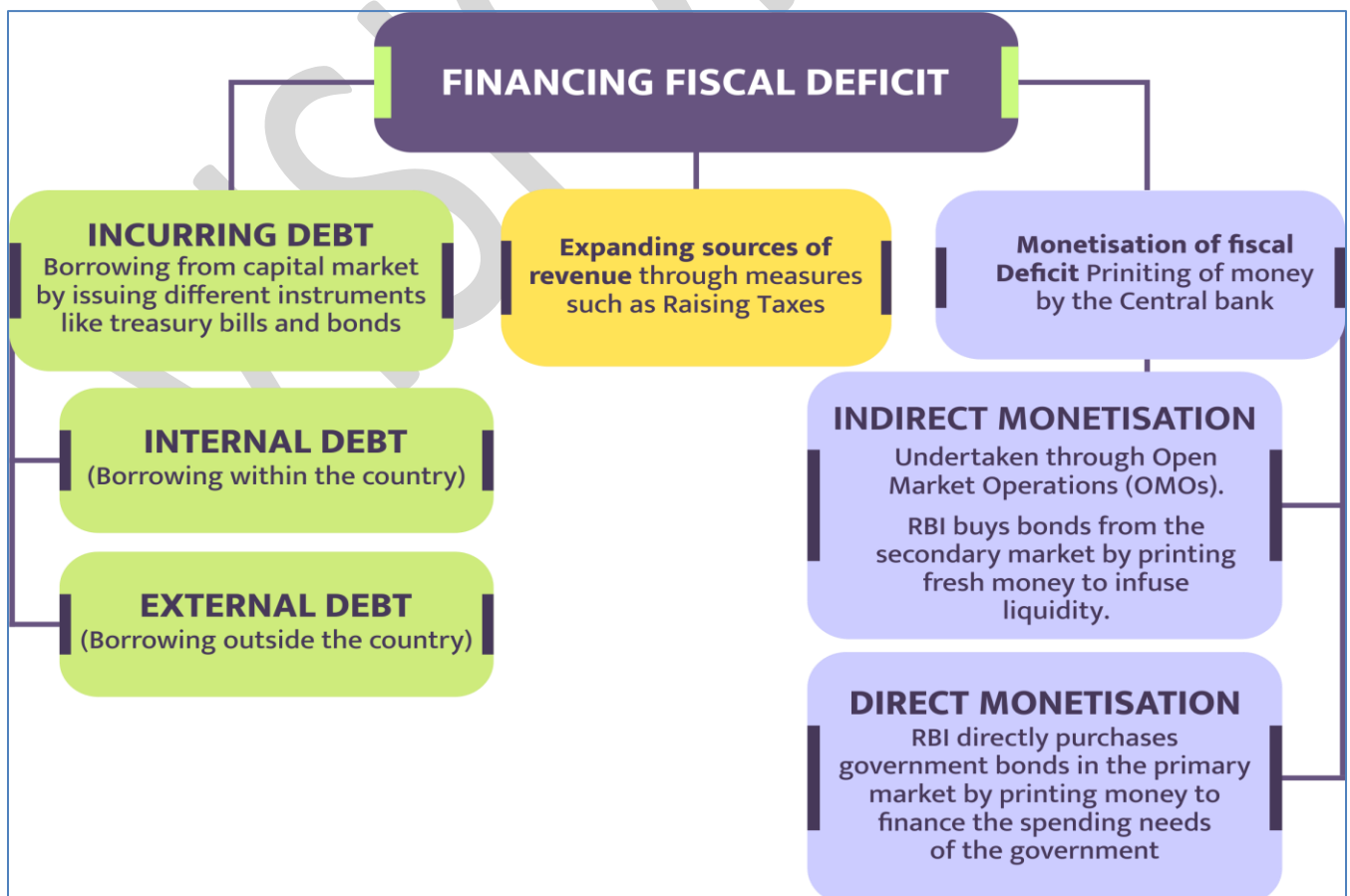
- India has recorded a fiscal deficit of 9.3% of GDP in 2020-21 and for 2021-22, the deficit has been put at 6.8 per cent of the GDP.
 - This is mainly due to rise in expenditure to mitigate the fallout of pandemic and moderation in revenue and low tax collection due to COVID 19 induced economic slowdown.
- Thus, there have been debates on how to finance the growing fiscal deficit given the need to provide additional stimulus to the Indian economy amid the ongoing pandemic.

What is Fiscal deficit and how is it financed?

- Fiscal Deficit is the difference between the total income of the government (total taxes and non-debt capital receipts) and its total expenditure. It occurs when the government's expenditure exceeds its income.

Fiscal Deficit = Total expenditure of the government (capital and revenue expenditure) – Total income of the government (Revenue receipts + recovery of loans + other receipts)

- Typically, governments have two basic choices for financing their fiscal deficits: they can borrow (issue debt) or raise taxes.
- Alternatively, the central bank can print currency for the government to bridge its fiscal deficit, which is known as **monetisation of deficit**.



About Direct Monetisation of deficit

- It refers to a scenario where a central bank prints currency to the tune of accommodating massive deficit spending by the government. It happens when the government privately places its bonds with the Central bank i.e., the central bank purchases government bonds in the primary market.
 - Direct monetisation may not necessarily involve actual printing of currency as the central bank could simply credit the Government's account with itself through an electronic accounting entry.
- The exercise leads to an increase in total money supply in the system.
- Direct monetisation of deficit is also referred to as **helicopter money** when large sums of new money are printed to stimulate an economy during a crisis — like a recession.

Direct Monetisation of Deficit in India	
Until 1997: Automatic monetisation of deficit	<ul style="list-style-type: none"> • India's deficits were automatically monetised until 1997. <ul style="list-style-type: none"> ○ Ad-hoc treasury bills (non-marketable short term debt instruments issued by the Government of India), were automatically issued by the RBI on behalf of the Centre to itself at a fixed rate, to replenish the central government's cash balances. • An agreement was signed between the RBI and the Government of India in 1997 completely phasing out funding through ad hoc treasury bills and the practice was replaced with a system of ways and means advances (WMA) from April 1, 1997.
1997-2006: RBI participating in primary issuance of Government securities	<ul style="list-style-type: none"> • Even after a cessation of automatic monetisation, monetisation continued in another form as the RBI continued to subscribe to the primary issuances of Government securities (G-secs).
2006-2018: Complete prohibition on direct monetisation	<ul style="list-style-type: none"> • Fiscal Responsibility and Budget Management Act (FRBM Act), 2003, was enacted which completely barred RBI from subscribing to the primary issuances of the government from April 1, 2006.
Since 2018: Direct monetisation allowed on certain grounds	<ul style="list-style-type: none"> • FRBM Act was amended in 2017 adding an escape clause which permits monetisation of the deficit under special circumstances. <ul style="list-style-type: none"> ○ RBI can subscribe to the primary issue of central government securities in case the government exceeds the fiscal deficit target on grounds such as national security, act of war, national calamity, collapse of agriculture severely affecting farm output and incomes etc.

Reasons behind demand of Direct monetisation

- **Financing recovery programmes:** Monetization can solve several problems for a government during the COVID-19 crisis as it can provide easy liquidity to the government to directly cover some of the costs of extraordinary recovery programs.
 - For instance, it can be used to finance Government of India's stimulus to the economy, under Atmanirbhar Bharat 3.0 which amounts to around ₹ 2.65 Lakh crore.
- **Mitigating deflation and stimulating moderate inflation:** Printing money can ensure that the money reaches the masses which can then lead to higher spending. This provides an opportunity for the government to boost overall demand at the time when private demand has fallen.
 - If money printing leads to an increase in demand, Indian manufacturing companies can increase production quickly, without having to increase prices.
- **Maintaining financial stability:** Since savings in an economy are limited, financing large deficits through issuance of G-Secs can substantially increase interest rates and cost of borrowing for the Government. This could increase the probability of default, threatening financial stability of the national economy.
- **Infusion of liquidity:** Direct monetisation can provide liquidity in the financial system when interest rate cuts are not possible due to inflationary concerns.
 - For instance, the RBI reduced the repo rate by 115 bps between March and May of 2020. However, further interest rate cuts were not possible, and the repo rate was kept unchanged at 4% thereafter.
- **Keeping interest rates low:** Printing money ensures that there is enough money going around in the financial system and in the process, interest rates continue to remain low.
 - Lower interest rates allow the Government to borrow and invest in productive assets such as roads, hospitals etc., corporates to borrow and expand, and people to borrow and spend leading to economic revival.
- **Other Benefits:**
 - Unlike debt-financed fiscal programs, a money-financed program does not increase future tax burdens.

- It can reduce the value of a government's outstanding obligations to some extent by increasing inflation.

Concerns regarding use of Direct monetisation in India

- **High inflation:** Monetisation of the government's fiscal deficit may give rise to unproductive spending and may lead to higher inflation.
 - Estimates suggest that inflation could surge to an average of 12% in 2021 if the RBI was to finance a second stimulus package of \$270 billion (a similar amount to Atma-nirbhar Bharat package 1.0).
- **Erodes the credibility of RBI:** The quantum and timing of money to be printed being decided by the government's borrowing requirement rather than the RBI's monetary policy.
 - Adopting monetization as a regular part of a central bank's toolkit, or even setting a precedent that it is available, could gradually erode the barriers between monetary and fiscal policy, damaging the central bank's credibility and limiting its ability to fulfill its mandate.
- **May hurt fiscal prudence:** Direct monetisation can disincentivize fiscal consolidation activities of the Government. India has already repeatedly pushed back its target of achieving 3% fiscal deficit.
- **Fiscal dominance:** The lack of fiscal discipline in the long run affects the independence of the central bank as it will be forced to monetize an unsustainable, out-of control deficit to avoid negative economic outcomes leading to fiscal dominance.
 - Fiscal dominance is particularly detrimental to overall macroeconomic stability if it leads to reserve money growth above the desired level, which is required for monetary policy actions consistent with economic growth and inflation.
- **Ineffective to increase liquidity:** Money extended by a fiscal program inevitably ends up in the banking system. This can increase the amount of bank reserves at the central bank as in times of stress banks are usually reluctant to lend, so they are likely to keep these excess reserves at the central bank and earn interest on them.
- **Depreciation of currency:** The supply-demand imbalance in the currency market can cause the Indian rupee to depreciate.
 - RBI could step in and intervene using its forex reserves. However, running down on forex reserves can ultimately result in a balance of payments crisis.

DID YOU KNOW?



In 2008 Zimbabwe decided to print more money to grow its economy. However, it reduced the value of their local currency and instead increased the prices of goods causing 'hyperinflation'. As a result, prices were increased to 231,000,000% in a single year.

Way Forward

- **Productive use of fiscal deficit prior to direct monetization:** If there exists enough underutilized resources and opportunities in the economy (as is the case in point for a labour abundant India), then printing money does not stoke excessive inflation. So, before India adopts direct monetization, the government should develop 'credibility' of its fiscal spends and ensure productive spending decisions for higher growth multiplier effects.
- **Exploring alternatives:** The government could raise a part of its borrowing requirements by issuing **Covid bonds** to the public.
 - Appropriately priced and structured, they can provide relief to savers who are short-changed by the low-interest rates on bank fixed deposits. Moreover, such Covid bonds will not add to the money supply and will not, therefore, interfere with RBI's liquidity management.
- **Using Direct monetization as a last resort:** RBI is currently printing money and buying bonds from the secondary market through Government Securities Acquisition Programme (GSAP). G-SAP 1.0 was worth Rs 1 trillion; G-SAP 2.0 will be of Rs 1.2 trillion.
 - Hence, presently there is no need for a direct purchase on bonds as GSAP has been successful in providing necessary liquidity, fulfilling economy stimulus, and keeping the bond yields comfortably low.

Conclusion

As the costs of COVID-19 continue to mount, so too have the sizes of government deficits and with them, the calls for monetization. It is a powerful emergency tool, capable of providing substantial stimulus and a dramatic reduction in real interest rates if it is communicated successfully and seen as credible.

3.3. GLOBAL MINIMUM CORPORATE TAX RATE

Why in News?

Recently, Finance Ministers from the Group of Seven (G7) nations reached a landmark accord on backing a global minimum corporate tax rate of at least 15%.

About Global Minimum Corporate Tax

- Governments have long grappled with the **challenge of taxing global companies** (such as Google, Amazon and Facebook) **operating across many countries**.
 - Such companies generate huge revenues but **pay very little tax because they set up offices for tax purposes in low-tax jurisdictions** (tax havens).
 - Also, **income from intangible sources** such as drug patents, software and royalties on intellectual property has migrated to these jurisdictions, allowing companies to avoid paying higher taxes in their traditional home countries.
- Global Minimum Corporate Tax is an **additional tax imposed on large multinational companies** (MNCs), potentially forcing them to pay taxes to countries based on where their goods or services are sold, **regardless of whether they have a physical presence in that nation**.
- It will **undercut any advantage of shifting to lower-tax places** and pressures countries to conform to the global norm.
 - From 2000-2018, US companies booked half of all foreign profits in just seven low-tax jurisdictions: Bermuda, the Cayman Islands, Ireland, Luxembourg, the Netherlands, Singapore and Switzerland.

How a global minimum corporate tax works?

- Suppose, a company headquartered in Country A is reporting income in **Country B, where the rate is 11%**.
- With a global minimum rate of 15% in effect, **Country A would "top up" the tax and collect another 4%** of the company's profit from Country B representing the **difference between Country B's rate and the global minimum rate**.

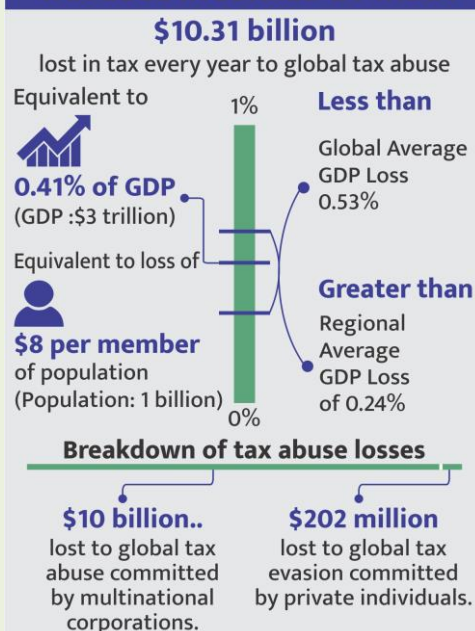
Other Significant outcomes of the G7 summit (Carbis Bay Declaration)

- **G7 to secure a further 1 billion COVID-19 vaccine doses** (over next 12 months) either through donating surplus supplies or providing further finance to Covax, UN-backed scheme to distribute vaccines to low- and middle-income countries.
- **G7 to increase their climate finance contributions** and meet an overdue spending pledge of \$100 billion a year to help poorer countries cut carbon emissions.
- **Build Back Better World (B3W) Partnership**, a values-driven, high-standard, and transparent infrastructure partnership led by major democracies to help narrow the \$40+ trillion infrastructure need in the developing world, which has been exacerbated by the COVID-19 pandemic.
 - Infrastructure plan aims to rival China's Belt and Road Initiative.

Possible Impact on India

- India is likely to benefit as the **effective domestic tax rate is above the threshold**, and the country would continue to attract investment.
 - In 2019, India **announced a sharp cut in corporate taxes for domestic companies** to 22% and for new domestic manufacturing companies to 15%.
 - The cuts effectively brought India's headline corporate tax rate broadly **at par with the average 23% rate in Asian countries**.
- In respect of outbound investments, it **will prevent base erosion of tax in the country** as the government will be able to claw back any shortfall in tax paid below 15% by an overseas business owned by an Indian resident
- India has **already been proactively engaging with foreign governments in double taxation avoidance agreements**, tax information exchange agreements, and multilateral conventions to plug loopholes. This proposal of a common tax rate, thereby, adds no further benefits to India.

TAX LOSS INCURRED BY INDIA



Need for a Global Minimum Corporate Tax Rate

- **Bringing uniformity:** It is aimed at ending a decades-long "race to the bottom" in which countries have competed to attract corporate giants with ultra-low tax rates and exemptions.
- **Check on tax havens:** It neutralizes the low tax incentive and will discourage multinationals from shifting profits - and tax revenues - to low-tax countries regardless of where their sales are made.
- **Additional tax revenue to fight pandemic:** According to estimates, governments lose \$245 billion annually to tax havens. If that money were instead available to governments, they could use it for, among other things, managing their heavy costs for pandemic relief.
- **Boost to global economy:** by leveling the playing field for businesses and encouraging countries to compete on positive bases, such as educating and training their work forces and investing in research and development and infrastructure.
- **Allow taxing global digital MNCs:** It will be giving a right to tax a slice of profits of large digital MNCs and will put an end to various digital taxes that have proliferated around the world, similar to equalization levy in India.

OECD and Global Minimum Tax

- **Under the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS), 139 countries and jurisdictions are collaborating to put an end to tax avoidance strategies** that exploit gaps and mismatches in tax rules to avoid paying tax.
 - BEPS refers to **tax planning strategies used by multinational enterprises (MNEs) that exploit gaps and mismatches in tax rules** to artificially shift profits to low or no-tax locations where there is little or no economic activity, resulting in little or no overall corporate tax being paid.
- OECD/G20 Inclusive Framework on BEPS is **working to improve the coherence of international tax rules, ensure a more transparent tax environment and address the tax challenges arising from the digitalisation of the economy.**
- Recently, **130 countries, including Switzerland, China and India, have joined a new two-pillar plan to reform international taxation rules** and ensure that multinational enterprises pay a fair share of tax wherever they operate.
 - **Pillar One** ensures that large MNEs, including digital companies, **pay tax where they operate and earn profits.**
 - **Pillar Two** seeks to ensure that **large MNEs pay at least a Global Minimum corporate tax rate**, currently proposed at 15%, regardless of the jurisdiction where profits may be recorded.

Challenges

- **Global consensus:** There are challenges of getting all major nations on the same page, especially since this impinges on the right of the sovereign to decide a nation's tax policy.
 - Ireland, which has a tax rate of 12.5 percent, has come out against the global minimum tax, arguing that it would be disruptive to its economic model.
- **Consensus on tax rate:** a minimum tax of 15% may not raise substantial revenues and there is a possibility that other countries may want a higher minimum global tax rate.
- **Impact on socio-economic development in developing/ least developed countries:** MNCs are a source of foreign direct investment (by lowering tax rates). These corporations help to generate demand with efficient utilisation of resources and create employment in low-income countries.
- **Right to sovereignty:** Any global minimum tax operates to limit a national government's ability to exercise tax policy how it sees fit.
- **Issue of Digital taxation:** Global minimum tax's lack of clarification on the issue of digital taxation may be further dissuasion to countries like India, who are not in the stage of development so as to not differentiate between distinct sectors and industries.

Conclusion

In a post-Covid world, where all countries will be looking to rejuvenate their economies, there may be some concerns that a global minimum tax **could cause that economic recovery to stutter, particularly in countries that are heavily reliant on the inward investment encouraged by tax incentives.** Also, some governments believe that **an element of appropriate tax competition should still be allowed** by any global minimum tax regime, especially for smaller nations in order to enable them to compete with larger countries that have inherent economic advantages. Therefore, there is a need to **build a consensus among countries so that the pandemic ridden world is able to come out fast of its economic problems** and efforts of development can be speeded up in all the countries of the world.

3.4. MICROFINANCE REGULATIONS

Why in news?

The Reserve Bank of India (RBI) has proposed a new regulatory regime for microfinance with uniform set of guidelines for all lenders.

About Microfinance

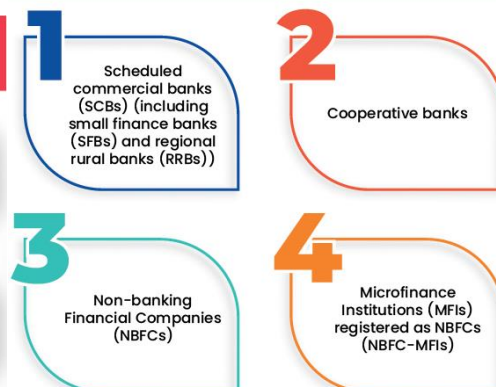
Microfinance is a form of financial service which provides small loans and other financial

services to poor and low-income households to enable borrowers to work their way out of poverty by undertaking income generating activities.

CORE FEATURES OF MICROFINANCE:



MICROFINANCE IS DELIVERED IN INDIA THROUGH:



Evolution of Microfinance

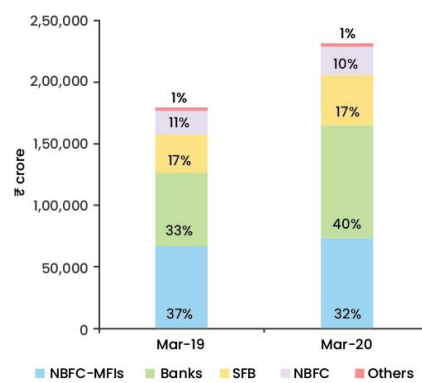
- Micro finance originated in Bangladesh with the institution of Grameen Bank in 1983. Under this model, women borrowers are organised into Self-Help Groups (SHGs), which would be entitled to borrow from the lending institution either for their individual or group requirements.
- In several countries across the world, micro finance originated from the activity of Non-Governmental Organisations (NGOs) that were aided largely or partly by foreign donors for their lending operations.
- The Indian experiment with micro finance was different. India involved its public banks network with their unparalleled geographical spread and functional reach to provide micro finance.
 - In this experiment, there exists a link between SHGs, NGOs and Banks. The SHGs are formed and nurtured by NGOs and only after accomplishing a certain level of maturity in terms of their internal thrift, they are entitled to seek credit from the banks.
- The SHG-Bank linkage programme, which was undertaken since 1992 in India, has now metamorphosed into the world's largest microfinance movement that financed more than 100 lakh SHGs with a credit outstanding of more than Rs. 1 lakh crore.
- The micro finance experiment in India has been described by NABARD as relationship banking rather than parallel banking elsewhere in the world.



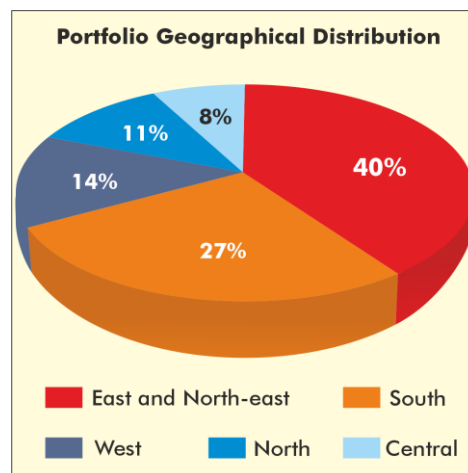
Overview and background

- Indian microfinance sector has witnessed phenomenal growth over past two decades in terms of increase in both the number of institutions providing microfinance and quantum of credit made available to the microfinance customers.
 - Currently it is serving around 102 million accounts of the poor population of India.
- However, as the sector grew, certain inadequacies and failures became apparent culminating in the Andhra Pradesh microfinance crisis in 2010.
 - This crisis was attributed to the irrational exuberance of some MFIs who, in their eagerness to grow business, had given a go by to the conventional wisdom and good practices such as due diligence in lending and ethical recovery practices.
- In the wake of this crisis, RBI constituted Y H Malegam Committee to study issues and concerns in the MFI sector.

CHART 1: GROSS LOAN PORTFOLIO OUTSTANDING



- Based on the recommendations of the Malegam Committee, RBI introduced a **comprehensive regulatory framework for NBFC-MFIs in 2011.**
- An **NBFC-MFI has been defined as**
 - ✓ a **non-deposit taking NBFC,**
 - ✓ with **minimum net owned fund of ₹5 crore** (₹2 crore for NBFC-MFIs registered in the North Eastern Region) and,
 - ✓ having **minimum 85 per cent of its net assets** (assets other than cash, bank balances and money market instruments) **in the nature of 'qualifying assets'.**



This comprehensive regulatory framework is however, applicable only to NBFC-MFIs, whereas other lenders, which comprise of around 70 per cent share in the microfinance portfolio, are not subjected to similar regulatory conditions.

The RBI is therefore now proposing a **single uniform set of regulations for all Regulated entities (REs) of RBI** operating in the microfinance sector.

Regulation of MFIs

Parameters	Existing Regulatory framework for NBFC-MFIs	Proposed changes in regulatory framework
Definition of Microfinance borrower	A microfinance borrower is identified by annual household income not exceeding ₹1,25,000 for rural and ₹2,00,000 for urban and semi-urban areas.	<ul style="list-style-type: none"> • Same criteria shall be extended to all REs for the purpose of the common definition. <ul style="list-style-type: none"> ○ All REs shall have a Board approved policy enumerating factors considered for assessment of household income.
Limits on household indebtedness	Total indebtedness of the borrower does not exceed ₹1,25,000 (excluding loan for education and medical expenses);	<ul style="list-style-type: none"> • Link the loan amount to household income in terms of debt-income ratio. <ul style="list-style-type: none"> ○ Accordingly, all lending institutions has to ensure that the EMI a household has to pay does not exceed 50 per cent of its income.
Nature of loans	Collateral free loans without any prepayment penalty	The collateral free nature of microfinance loans shall be extended to all REs.
Limit on number of loans, loan amount and tenure	<ul style="list-style-type: none"> • Loan amount limit of ₹1,25,000 (₹75,000 in first cycle and exclusion of loans for meeting education and medical expenses from loan limit); • Minimum tenure of 24 months for loans above ₹30,000 • No more than two NBFC-MFIs can lend to the same borrower. • Minimum 50 per cent of loans to be given for income generation activities 	All limits shall be withdrawn
Repayment periodicity	Microfinance borrowers of NBFC-MFIs are permitted to repay weekly, fortnightly or monthly instalments as per their choice.	All REs shall have a Board approved policy to provide the flexibility of repayment periodicity to microfinance borrowers as per their requirement.
Pricing of micro loans	Maximum interest charged by an NBFC-MFI shall be the lower of – <ul style="list-style-type: none"> • the cost of funds plus a margin cap of 10% for MFIs with loan portfolio of ₹100 crore or above and 12% for others; • The average base rate of the five largest commercial banks by assets multiplied by 2.75. 	No ceiling prescribed for the interest rate of NBFC-MFIs. <ul style="list-style-type: none"> • The Board of each NBFC-MFI shall adopt an interest rate model taking into account relevant factors such as cost of funds, margin and risk premium and determine the rate of interest to be charged for loans and advances. • NBFC-MFIs, like any other NBFC, shall be guided by fair practices code and would ensure disclosure and transparency of interest rates.
Exemptions to not-for-profit	Exemption from registration requirements to those 'not for profit' microfinance	Exemption to those 'not for profit' microfinance companies which are-

companies	<p>companies (registered under Section 25 of the Companies Act, 1956 (Section 8 of the Companies Act, 2013)) which are:</p> <ul style="list-style-type: none"> • engaged in providing credit not exceeding ₹50,000 for a business enterprise and ₹1,25,000 for meeting the cost of a dwelling unit to any poor person and • not accepting public deposits. 	<ul style="list-style-type: none"> • engaged in providing collateral-free loans to households with annual household income of ₹1,25,000 and ₹2,00,000 for rural and urban/semi urban areas respectively, • EMIs of loans does not exceed 50 per cent of the household income and • having asset size of less than ₹100 crore.
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Need for review of the current regulatory framework

The emerging dynamics in the microfinance sector as well as the concerns of customer protection call for a review of the regulations so that all the regulated entities (REs) engaged in microfinance pursue the goal of customer protection within a well-calibrated and harmonized set-up.

- **Over-indebtedness of borrowers:** Current regulations which do not permit more than two NBFC-MFIs to lend to the same borrower give space to other lenders. As a result, small borrowers are increasingly able to get multiple loans from several lenders, contributing to their over-indebtedness leading to difficulties in repayments and forced recoveries.
 - The recommendation of linking the loan amount to household income in terms of debt-income ratio is to ensure that the household is not strained.
- **Creating a level playing field:** Prevailing regulations on interest rate ceiling has been keeping the interest rates at a higher level for NBFC-MFIs. As a result, lending rates of banks also hover around this ceiling rate, despite comparatively lower cost of funds. Ultimately the borrowers are getting deprived of the benefits from enhanced competition as well as economy of scale.
 - The proposed removal of capping on interest rate of NBFC-MFIs could enable the market mechanism to bring the interest rates downwards in the microfinance sector and empower the borrowers to make an informed decision by enhancing prevalent mechanisms on transparency of loan pricing.
- **Increasing accessibility of microloans by withdrawing the need for collateral:** Low-income borrowers often lack the type of collateral often preferred by the lenders and what they have for pledging, instead is of little value for the lenders but is highly valued by the borrower (e.g. household items, furniture, etc.). Even if lenders take such collateral, it is for leverage to induce repayments rather than to recover losses.
- **Obviating the dependency on informal sources of credit:** Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households' had recommended that over-emphasis on income-generating loans may drive the borrowers towards more expensive informal loans for fulfilling their entire financial needs.
 - Therefore, limits regarding minimum 50 per cent of loans for income generation purpose, which are presently applicable only to NBFC-MFIs, are proposed to be withdrawn.
- **To prevent trickling down of the risks:** Section 8 companies are dependent for their funding needs on public funds including borrowings from banks and other financial institutions. Due to their interconnectedness with other financial intermediaries, any risk arising out of their business can get transmitted to the financial sector. Thus, companies having asset size more than 100 crores are not exempted from RBI regulations.

Conclusion

Microfinance is doing very well, and RBI's forward-looking ideas for updating its regulatory framework can further secure the foundations for this weapon to fight poverty.

3.5. URBAN TRANSFORMATION

Why in news?

Recently, the **Ministry of Housing and Urban Affairs (MoHUA)** organised an event to commemorate 6 years of the **three transformative Urban Missions** vis. **Smart Cities Mission (SCM)**, **Atal Mission for Urban Rejuvenation and Urban Transformation (AMRUT)** and **Pradhan Mantri Awas Yojana-Urban (PMAY-U)**.

What is Urban transformation and why is it important?

Urbanization is a form of **social transformation from traditional rural societies to modern urban communities**. Urban transformation expresses entire **strategies and actions used to improve the economic, social, physical,**

and environmental conditions of damaged and collapsed urban areas by comprehensive and integrated approaches.

For example, in Pune, India's first worker-owned waste-pickers' cooperative is helping to create an efficient waste-collection system that reaches more residents and showing cities how to incorporate informal workers into a modern economy.

The approach of urban transformation becomes important due to following reasons:



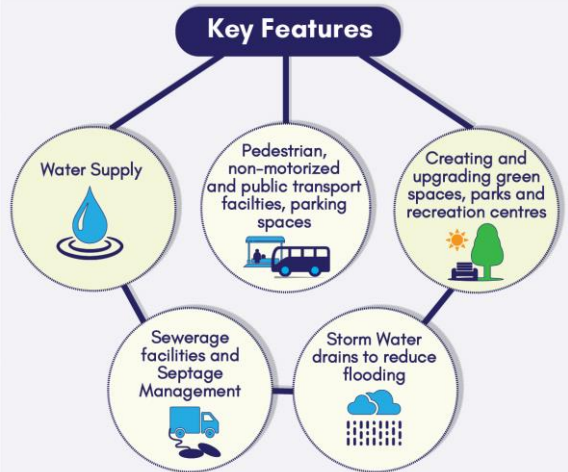
- **Population growth:** The population of Indian towns is expected to increase from 282 million to 590 million in the next 20 years. By 2050 the proportion living in urban areas is expected to reach 66%.
- **Employment opportunities:** Due to **industrialisation**, majority of people migrate into urban areas to seek a better livelihood as **ample job opportunities in cities** are available in all **developmental sectors such as public health, education, transport, sports and recreation etc.**
- **Economic growth:** India is one of the **fastest growing economies** in the world, and its high economic growth is due to expansion of towns and cities. Indian cities are likely to contribute to **70% of India's GDP by 2030.**
- **Sustainable development:** The urban transformation puts the cities on a central stage for **accelerating change towards local and global sustainability and resilience** which are enshrined in the **2030 United Nations Sustainable Development Goals (SDGs).**

What are the challenges in effecting urban transformation?

- **Institutional:**
 - **74th amendment act has been implemented half-heartedly** by the states which has not fully empowered the Urban local bodies (ULBs) functionally and financially.
 - **Public monopoly**, organizational inefficiency, **technical flaws in the form of high leakages, lack of preventive maintenance**, poor accounting as well as over staffing and **lack of autonomy** have led to failure of the public sector to provide adequate service delivery.
 - State and national planning institutions **lack qualified planning professional.**
 - **Lack a modern planning framework (decentralised planning)** which limits effective land utilisation and cities' abilities to grow in accordance with changing needs.
 - Growing trend of **declining ratio of revenue generation** with the ULBs.
- **Infrastructural:**
 - The rapid **growth of urban population by natural and migration** ways has put **heavy pressure on public utilities** like housing, sanitation, transport, water, electricity, health, education and so on.
 - **Lack of investment** in urban infrastructure and capacity building.
 - Despite high economic growth, India cities are the centres of **high income inequality and poor quality of life.** In 2019, **New Delhi and Mumbai ranked 118th and 119th** respectively, on the Global Liveability Index that covered 140 cities.
- **Environmental:**
 - Urban areas are at **higher risk to floods, earthquakes** owing to low density and overcrowding. Urban areas are becoming **heat islands, rising air and groundwater pollution and persistent water crisis.**
 - **Example**, pollution in Delhi, floods in Mumbai and Chennai indicate poor urban planning and management.
- **Social:**
 - Issues of lack of resources, overcrowding, unemployment, poverty, and lack of social services and education habitually lead to many social problems and crimes including **violence, drug abuse, human trafficking, sexual assault, child labour etc.**

Steps taken by government to overcome these challenges and their progress

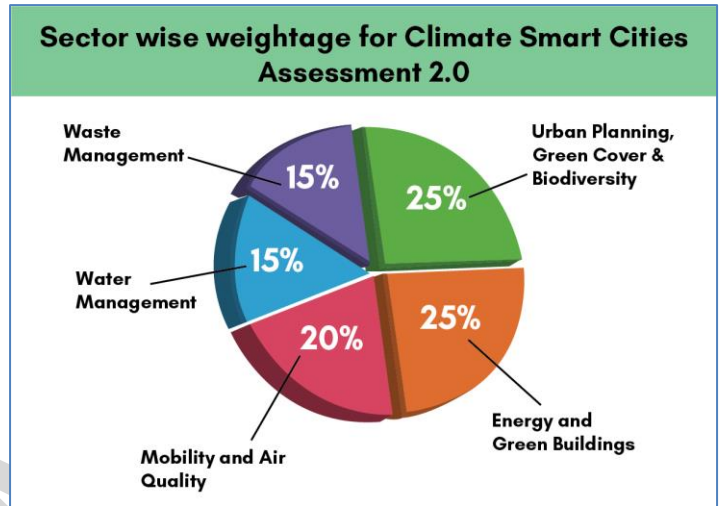
Mission	Description	Progress
PMAY-U	<ul style="list-style-type: none"> • It addresses urban housing shortage among the Economically Weaker Sections (EWS) and Middle Income Group (MIG) categories including the slum dwellers by ensuring a pucca house to all by 2022. 	<ul style="list-style-type: none"> • 1.12 crore houses sanctioned and more than 50 lakh houses completed. • For the first time, interest subsidy on home loans given to MIG having annual income of upto Rs. 18 Lakh under Credit Linked Subsidy Scheme (CLSS).

	<ul style="list-style-type: none"> • Components of PMAY-U includes: <ul style="list-style-type: none"> ○ In-situ Slum Redevelopment (ISSR) ○ Credit Linked Subsidy Scheme (CLSS) ○ Affordable Housing in Partnership (AHP) ○ Beneficiary-led Individual House Construction/ Enhancement (BLC) 	<ul style="list-style-type: none"> • Affordable Rental Housing Complexes (ARHCs) for urban migrants/ poor launched as response to reverse migration induced by COVID-19. 
<p>AMRUT</p>	<ul style="list-style-type: none"> • It is first focused national water Mission which aims to provide basic services like water supply, sewerage, etc. to households and build amenities in cities. • 500 cities selected under AMRUT.  <ul style="list-style-type: none"> • All cities having population above 1 lakh are covered under Mission. 	<ul style="list-style-type: none"> • 105 lakh household water tap and 78 lakh sewer connections have been provided. • 88 lakh streetlights have been replaced with energy efficient LED lights against target of 101 lakh leading to energy savings and reduction in CO2 emission. • As per The Energy and Resources Institute (TERI), 84.6 lakh tons carbon footprint reduced under AMRUT.
<p>SCM</p>	<ul style="list-style-type: none"> • It aims to promote cities that provide core infrastructure, clean and sustainable environment to their citizens through the application of 'smart solutions' like smart grid, smart water using Internet of Things (IoT) etc. • It is based on 6 fundamental principles (refer infographic) 	<ul style="list-style-type: none"> • 70 Smart cities have developed and operationalised their Integrated Command and Control Centres (ICCCs) which were used as war-rooms for COVID management. • Smart solar, Smart Water and Vibrant Public Spaces projects are heading towards progressive paths in the Mission. • 212 PPP projects have been grounded/ completed stage in the SCM.



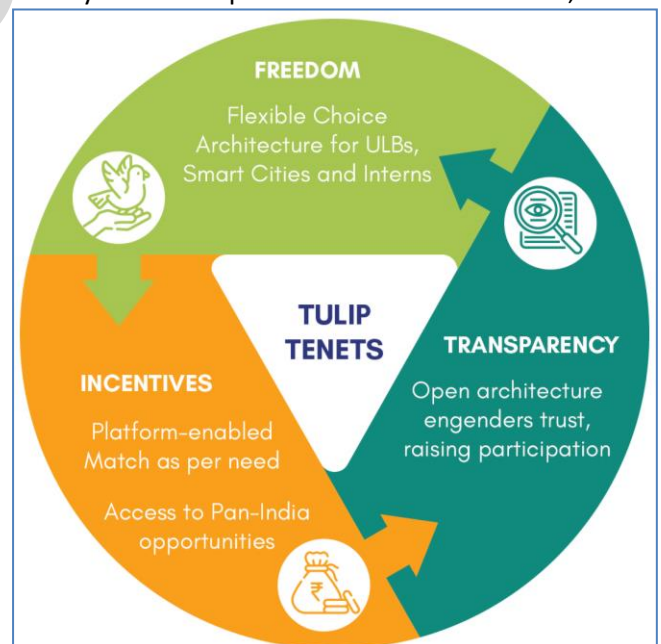
Other recently taken steps to further strengthen above missions

- **Climate Smart Cities Assessment Framework (CSCAF) 2.0:** It aims to provide an overarching roadmap to **formulate, implement and monitor urban climate actions** in India.
 - CSCAF 2.0 consists of **28 diverse indicators across five sectors.** (refer infographic)
- **Data Maturity Assessment Framework 2.0:** Every year, the Smart Cities are being ranked so that Urban Local Bodies (ULBs) continue to **invest in developing and strengthening their data ecosystems.**
 - It assess the data readiness of **100 smart cities on the systematic pillars across 5 components** namely policy, people, process, technology and outcomes.



- **ICT initiatives under Smart Cities:**
 - **ICCC Maturity Assessment framework (IMAF):** It is a **self-assessment tool kit** developed to assess the maturity of Integrated Command and Control Centres (ICCC) across **key aspects of functionality, technology, governance and citizen/stakeholders engagement.** It helps cities identify areas of improvement in their ICCCs to deliver better services to the citizens.
 - **Smart City ICT standards:** It facilitates interoperability between products in a multi-vendor, multi-network and multi-service environment that exists in a smart city.

- **India Smart Cities Fellows Report:** It **promotes youth leadership** and usher vibrancy in the design of India's urban future.
- **TULIP (The Urban Learning Internship Program) Report:** It is a platform to **connect graduates to ULBs and Smart Cities** to co-create new solutions for our cities.
 - It was launched in partnership with All India Council for Technical Education (AICTE).



- **NIUA (National Institute of Urban Affairs) Knowledge products:**
 - **CITIIS (City Investments to Innovate, Integrate and Sustain) Program:** It was launched in partnership with the French Development Agency and the European Union in 2018. It has a novel approach of **developing demonstrative projects while furthering the agenda of sustainability and innovation in urban infrastructure.**
 - **Handbook of Urban Statistics:** It is the first of its kind document with a **special focus on Persons with Disabilities (PwDs)** in Indian cities. It captures the data related to the nature and cause of disability, the socio-economic condition of PwDs and their access to various physical and social infrastructures.

- **Cities Insights Report:** It investigates **urbanization trends in Indian cities** from the lens of marginalized populations, persons with disabilities, elderly, children and women. This initiative is under the '**Building Accessible Safe Inclusive Indian Cities**' (BASIIIC) Programme at the NIUA, New Delhi.
- ✓ NIUA is an **autonomous body of MoHUA**, tasked to bridge the gap between research and practice on issues related to urbanization.

What can be the approach to accelerate urban transformation in future?

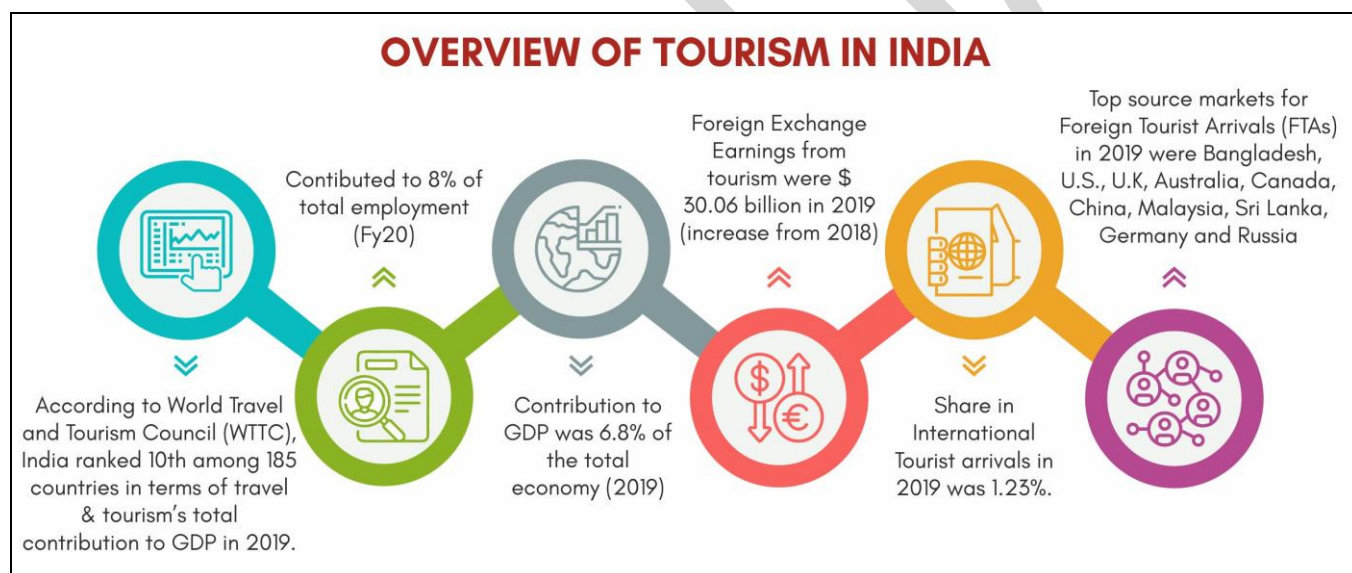
- **Urban governance:** With cities growing beyond municipal boundaries, having fully formed metropolitan authorities with clearly defined roles will be essential for the successful management of large cities in India.
- **Integrated planning and management:** It should include the needs of the marginalized sections including their residence, health, water, transportation, and other amenities at affordable prices.
- **Finance:** Devolution must be supported by more reforms in urban financing that will reduce cities' dependence on the Centre and the states and unleash internal revenue sources.
- **Trained human resource:** **Special knowledge and expertise** is needed in urban planning of urban areas, especially in hill states, coastal regions, riversides, and disaster vulnerable areas.

3.6. TOURISM SECTOR IN INDIA

Why in News?

Recently, Ministry of Tourism has formulated several Draft National Strategies and Roadmaps for development and promotion of tourism in the country.

Overview of Tourism in India



About Ministry of Tourism

- It is the **nodal agency to formulate national policies and programmes** for the development and promotion of tourism.
- **Ministry also has the following autonomous institutions:**
 - Indian Institute of Tourism and Travel Management (IITTM).
 - National Council for Hotel Management and Catering Technology (NCHMCT); and the Institutes of Hotel Management (IHMs).
 - Indian Culinary Institute (ICI).
- **India Tourism Development Corporation (ITDC)** is the **only public sector undertaking** under the charge of the Ministry of Tourism.

Recent initiative taken to promote tourism

- **e-visa facility has been extended to the nationals of 169 Countries under 5 sub-categories** i.e e-Tourist visa, e-Business visa, e-medical visa, e-Medical Attendant Visa and e-Conference Visa.
 - **Triple entry is permitted** for e-Medical Visa and for e-Medical Attendant Visa.
- Ministry of Tourism has **two major schemes for development of tourism infrastructure** in the country including historical places and heritage cities:
 - **Swadesh Darshan - Integrated Development of Theme-Based Tourist Circuits.**

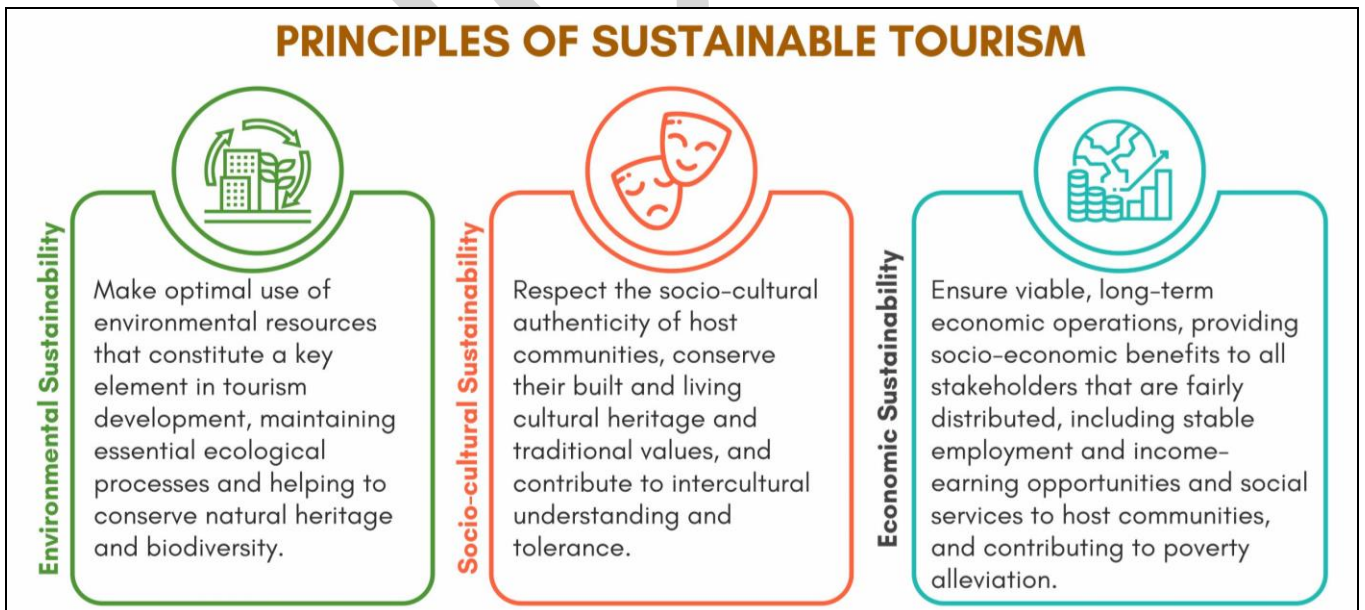
- ✓ Under the scheme, fifteen thematic circuits have been identified for development, namely: North-East India Circuit, Buddhist Circuit, Himalayan Circuit, Coastal Circuit, Krishna Circuit, Desert Circuit, Tribal Circuit, Eco Circuit, Wildlife Circuit, Rural Circuit, Spiritual Circuit, Ramayana Circuit, Heritage Circuit, Tirthankar Circuit & Sufi Circuit.
- **PRASHAD- Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive**
 - ✓ Under the scheme, 51 sites have been identified at present in 28 States for development.
- Ministry of Tourism has **identified 17 iconic sites in the country for development under Iconic Tourist Sites Development Project.**
- **“Incredible India 2.0” Campaign** of the Tourism Ministry marks a shift from the generic promotions being undertaken across the world to market specific promotional plans and content creation.
- **Under RCS UDAN-3, connectivity is further improved** with 46 tourism routes included for better connectivity of important tourist places.
- Recently, **Centre announced free visas for 500,000 tourists and a loan guarantee scheme** to support recognised tour operators and tourist guides whose business has been disrupted due to Covid-19 pandemic.

Recognising the immense potential of tourism sector, Ministry has released Draft National Strategy and Roadmap for Sustainable Tourism along with strategy and roadmap for development of niche areas of tourism (rural, Medical and Wellness, MICE (Meetings, Incentives, Conferences and Exhibitions)).

3.6.1. DRAFT NATIONAL STRATEGY AND ROADMAP FOR SUSTAINABLE TOURISM

What is Sustainable Tourism?

- It is the **tourism that takes full account of its current and future economic, social and environmental impacts**, addressing the needs of visitors, the industry, the environment and host communities.
 - **Aim of sustainable tourism includes** economic viability of host destination, local prosperity, social equity, Employment quality, community wellbeing, cultural richness, biological diversity and resource efficiency.
- **Tourism has been included as targets in sustainable development goals (SDGs) 8, 12 and 14** on inclusive and sustainable economic growth, sustainable consumption and production (SCP) and the sustainable use of oceans and marine resources, respectively.
 - Tourism, however, **has the potential to contribute, directly or indirectly, to all of the SDGs.**
- As per United Nations World Tourism Organization (UNWTO), Sustainable tourism **should follow the three basic principles:**



Why a National strategy and roadmap for Sustainable Tourism?

- **Inclusive Community Development:** Tourism can be a key driver of inclusive community development contributing to resiliency, inclusivity, and empowerment, while safeguarding natural and cultural resources.
- **India ranks poor in sustainability:** 96th position in Adventure Tourism Development Index 2020, 128th under Environment Sustainability in 2019.

- Such a strategy with focus on adventure and ecotourism has been prepared **to mainstream sustainability in Indian tourism sector.**
- **Potential of Eco tourism:** powerful tool for conservation of forests, biodiversity/ wildlife and scenic landscapes, fastest growing segment of the travel and tourism industry, public interest in nature-based recreation etc.
- **Potential of Adventure tourism:** attracts visitors outside of peak season, highlights the natural and cultural values of a destination, attracts high value customers etc.
- **COVID-19 crisis is a watershed moment to align the efforts** of sustaining livelihoods dependent on tourism to the Sustainable Development Goals.

Steps taken for sustainable tourism

- Special focus on **promoting 'Incredible India' brand** to attract tourists, not only to major cities and heritage attractions, but also to rural India.
- With the institutionalization of Global Sustainable Tourism Council (GSTC) in 2010, **India adapted GSTC criteria for sustainable tourism in the Indian context.**
- Ministry of Tourism has launched the **Sustainable Tourism Criteria for India (STCI)** with an aim to promote and ensure environmentally responsible and sustainable practices in the tourism industry.
- **Guidelines for classification of hotels under various categories**, which require hotels to incorporate various eco-friendly measures like Sewage Treatment Plant (STP), Rain Water Harvesting System, waste management system etc.
- Ministry has also prescribed that the **architecture of the hotel buildings in hilly and ecologically fragile areas** should be sustainable and energy efficient.
- The tour operators approved by Ministry of Tourism have to sign a **pledge for commitment towards Safe & Honorable Tourism and Sustainable Tourism.**

Key Features of draft National strategy and roadmap for Sustainable Tourism

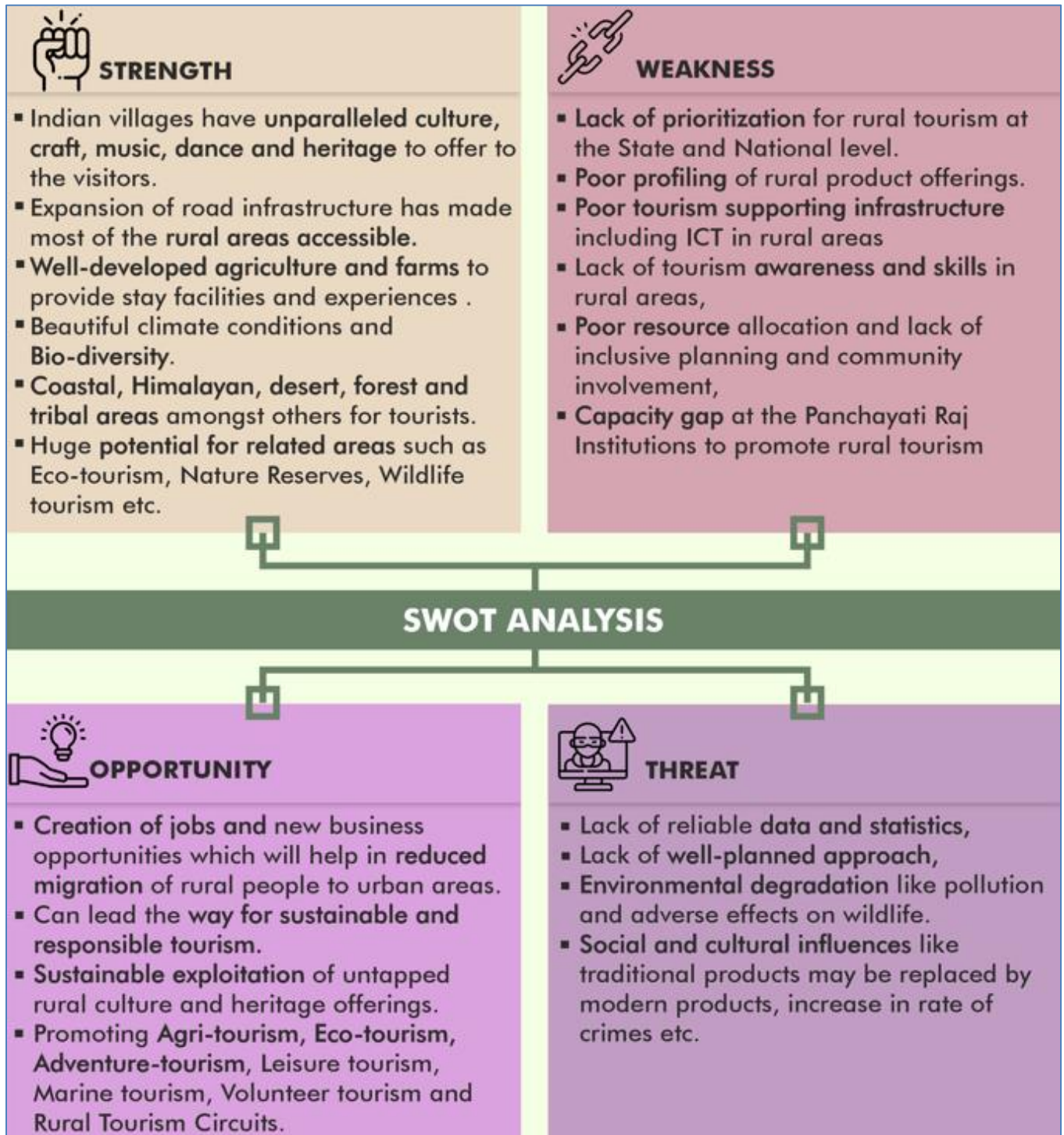
Aim	<ul style="list-style-type: none"> ● To mainstream sustainable tourism development and to improve attractiveness and competitiveness of India as a destination for ecotourism and adventure tourism.
Strategic pillars identified	<ul style="list-style-type: none"> ● Certification Scheme for Sustainable Tourism based on Sustainable Tourism Criteria of India, Certification Scheme for tour operators, guides and other service providers for ecotourism and adventure tourism, Digitalization and branding of Certification Schemes etc. ● Information, Education and Communication (IEC) campaign to create awareness, understanding and acceptance of sustainable tourism. ● Capacity Building of field functionaries and conservation agencies, Skill development and entrepreneurship support to local communities etc. ● Ranking of the States to foster competitiveness ● Marketing and Promotion by creating a sub brand around Adventure tourism and Ecotourism, developing state specific/destination specific campaigns etc. ● Safety Standards and Regulations have been framed for 15 Land Based, 7 Air Based and 7 Water Based activities which cover the entire gamut of Adventure Tourism available in India. ● Each State will identify the adventure destinations by offerings (Land, Air and Water based activities) in Soft, Hard and Other categories and create a detailed profile ● Private Sector partnership in areas of marketing, operations, product and experience creation, quality assurance and finance etc. <ul style="list-style-type: none"> ○ State Governments should designate areas for private sector operator to be called ecotourism block for development and management. ○ Owners of farmland adjoining forests may be encouraged to adopt ecotourism as an alternative land use. ○ Homestays and community lodges, shall be encouraged through appropriate incentives. ● Ministry of Tourism will prepare a detailed National Action Plan for implementation of the Strategy <ul style="list-style-type: none"> ○ National Board on Sustainable Tourism under Secretary (Tourism) to strengthen the ecosystem for development of sustainable tourism, adventure tourism and ecotourism

3.6.2. DRAFT NATIONAL STRATEGY AND ROADMAP FOR DEVELOPMENT OF RURAL TOURISM

About Rural Tourism

- Any form of tourism **that showcases the rural life, art, culture, and heritage at rural locations**, thereby benefiting the local community and **enabling interaction between the tourists and the locals** for a more enriching tourism experience can be termed as rural tourism.

- As per a 2011 report of MoT, there are **172 Rural Tourism sites and 52 commissioned rural tourism sites** in India.
- **Initiatives taken in India**
 - Rural Tourism was recognized as a **focus area in National Tourism Policy 2002**.
 - In 2003, **Endogenous Tourism Project-Rural Tourism Scheme** was started by MoT in collaboration with United Nations Development Project (UNDP).
 - **Help Tourism’ organization** launched a village-based tourism initiative in West Sikkim by **offering rural home-stays**.
 - Rural Tourism Project at the **Hodka Village in Kutch District of Gujarat** won the Pacific Asia Travel Association (PATA) award 2010 in the heritage category.



About National Strategy and Roadmap for Development of Rural Tourism

- **Objective is to:**
 - **Identify strategies** for Rural Tourism and bring **synergy and convergence** in the Central and State programs for Rural Tourism.

- **Facilitate coordination** of rural tourism development initiatives and create a **platform to share** knowledge of **best practices, development opportunities and challenges**.
- Identify and recommend **strategic areas/ clusters for tourism development** in rural areas.

To make tourism an important driver for rural economy and jobs while promoting sustainable and responsible tourism, **following pillars are identified in draft Strategy:**

Pillar	Components
Benchmarking of state policies and best practices	<ul style="list-style-type: none"> ● Conduct ranking of the States on Rural Tourism to foster competitiveness. ● Prepare a State Specific Report containing analysis of respective strengths and priority areas. ● Work with the States to implement successful models for private sector and community partnership.
Digital technologies and platforms for rural tourism	<ul style="list-style-type: none"> ● Enabling broadband internet infrastructure to rural areas. ● Capacity Building of various segments and providing financial, technical and networking support.
Developing clusters for rural tourism	<ul style="list-style-type: none"> ● Identify clusters of villages for tourism development ● Development plans for identified rural tourism cluster should be prepared by covering components like Physical Infrastructure, Digital Infrastructure, Social Infrastructure
Marketing support for rural tourism	<ul style="list-style-type: none"> ● Coordinated and synchronized approach for marketing rural tourism. ● Product and theme specific rural tourism campaigns may be launched as part of Incredible India campaign. ● Rural tourism to be a focus area under the overall “Dekho Apna Desh” campaign. ● Market development assistance schemes may be prepared.
Capacity building of stakeholders	<ul style="list-style-type: none"> ● Capacity building resource centres to be set up at National, State and Cluster level. ● Several Areas for Capacity Building has been identified like Built Heritage and Maintenance, Hygiene and basic service standards etc. ● Skill training in the relevant vocations and Entrepreneurship development programs will be organized for rural youth.
Governance and Institutional Framework	<ul style="list-style-type: none"> ● Broad institutional structure will include: <ul style="list-style-type: none"> ○ Vision Group under Union Minister for Tourism, ○ Task Force under Secretary (Tourism), ○ State Steering Committee under Chief Secretary, ○ District level Committee, ○ Cluster level monitoring and Coordination Committee. ● A national nodal agency to coordinate and evolve strategy and actionable plans and schemes. ● Each State/ UT may also designate a State Nodal Agency to assist the State Department of Tourism ● Prepare a detailed National Action Plan in consultation with relevant Ministries, State Governments and Industry Stakeholders for implementation of the Strategy.

3.6.3. DRAFT NATIONAL STRATEGY AND ROADMAP FOR MEDICAL AND WELLNESS TOURISM

About Medical and Wellness Tourism

- Medical tourism may be defined as ‘activities related to travel and hosting a foreign tourist who stays at least one night at the destination region for the purpose of maintaining, improving or restoring health through medical intervention.
- **It may be broadly classified into following three categories:**
 - **Medical Treatment:** Treatment for curative purpose that may include cardiac surgery, organ transplant etc.
 - **Wellness & Rejuvenation:** Offerings focused on rejuvenation or for aesthetic reasons such as cosmetic surgery, stress relief, spas etc.
 - **Alternative Cures:** Access to alternative systems of medicines such as India’s offering of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy).
- **Medical tourism is now often referred as Medical Value Travel (MVT)** as it captures patient’s healthcare seeking behaviour as well as the wider economic impact of such travel on nations hosting them.



To position India as a sustainable and responsible medical value travel and wellness destination, the Strategy has identified the following key pillars:

Pillars	Need	Strategies that will be undertaken
Develop a brand for India as a wellness destination	<ul style="list-style-type: none"> ● Although India is currently promoted under Incredible India and Individual hospitals are also marketing themselves but there is no campaign for the country as a destination for medical and wellness tourism. 	<ul style="list-style-type: none"> ● Heal in India campaign: an integrated communication strategy to promote brand India will be prepared and executed in partnership with the industry. ● Partnership with Indian Missions in establishing the “Heal in India” brand in their respective source markets. ● Corporate Arrangements with Foreign Governments in order to promote medical value travel from the source markets. ● Attracting diaspora to meet their medical and tourism needs. ● Marketing Development Assistance scheme to benefit Wellness Tourism Service Providers (WTSPs) and Medical Tourism Service Providers (MTSPs).
Strengthen the ecosystem for medical and wellness tourism	<ul style="list-style-type: none"> ● To establish linkages and understanding amongst the stakeholders about the role and responsibilities of and forge partnerships for promoting the sector. 	<ul style="list-style-type: none"> ● Organizing Medical Value Travel Facilitators (MVTF) by facilitating their registration, formation of associations etc. ● NABH accreditation will be made mandatory after stipulated number of years of successful operations in the field. ● Organising medical service providers such as hospitals by facilitating registration and categorizing them based on factors like quality of health care, volume and range of services provided. ● Organizing Wellness Tourism Operators and Capacity building of enterprises and staff to ensure quality of services. ● Ministry of Tourism will conduct assessment and ranking of the States and Destinations, with the key objective to foster competitiveness and encouraging States.
Enable digitalization by setting up Online MVT Portal	<ul style="list-style-type: none"> ● Providing One stop solution to facilitate international patients. It will help in exploring, 	<ul style="list-style-type: none"> ● Main features of the portal will include <ul style="list-style-type: none"> ○ Accounts for every stakeholder working in the industry like Immigration, Governmental body, service providers etc.

	planning, booking of services, payments and post-operative services.	<ul style="list-style-type: none"> ○ Capturing of data about international patients ○ Maintaining stringent regulations ● Online portal will help in formalization of the industry, enforcing regulations, better healthcare services, focused and concentrated efforts from government etc.
Enhancement of accessibility for MVT	<ul style="list-style-type: none"> ● To make India a more attractive destination. 	<ul style="list-style-type: none"> ● Liberalized VISA policy (e-visa facility already provided). ● Better air connectivity, especially for tourists from Africa and Middle East. ● Helpdesk and MVT Concierge and Lounge will be set up at important airports.
Promoting Wellness Tourism	<ul style="list-style-type: none"> ● Because wellness is multidimensional — spanning the physical, mental, social, emotional, spiritual, and environmental spheres — wellness travel is also multifaceted. 	<ul style="list-style-type: none"> ● Every destination has something unique to offer to wellness travelers, thereby creating opportunities for all kinds of businesses and providers. ● Convergence of Wellness, Hospitality and Travel businesses to help travellers incorporate wellness into every aspect of their trips. ● Government Support for Tourism Wellness Companies through incredible India campaign, Market Development Assistance Scheme etc. ● An effective quality assurance program through regulation, standardization, accreditation and streamlining of institutional procedures.
Governance and Institutional Framework	Setting up a Board as one-stop centre for the promotion, business development, facilitation, networking, regulation and grievance redressal.	<ul style="list-style-type: none"> ● National Medical & Wellness Tourism Promotion Board (NMWTB) was constituted in 2015. ● Board will have an advisory committee, a technical committee and an executive committee to discharge its functions. ● States having significant presence of Medical Value Travel business or future potential may constitute a State Medical and Wellness Tourism Promotion Board.

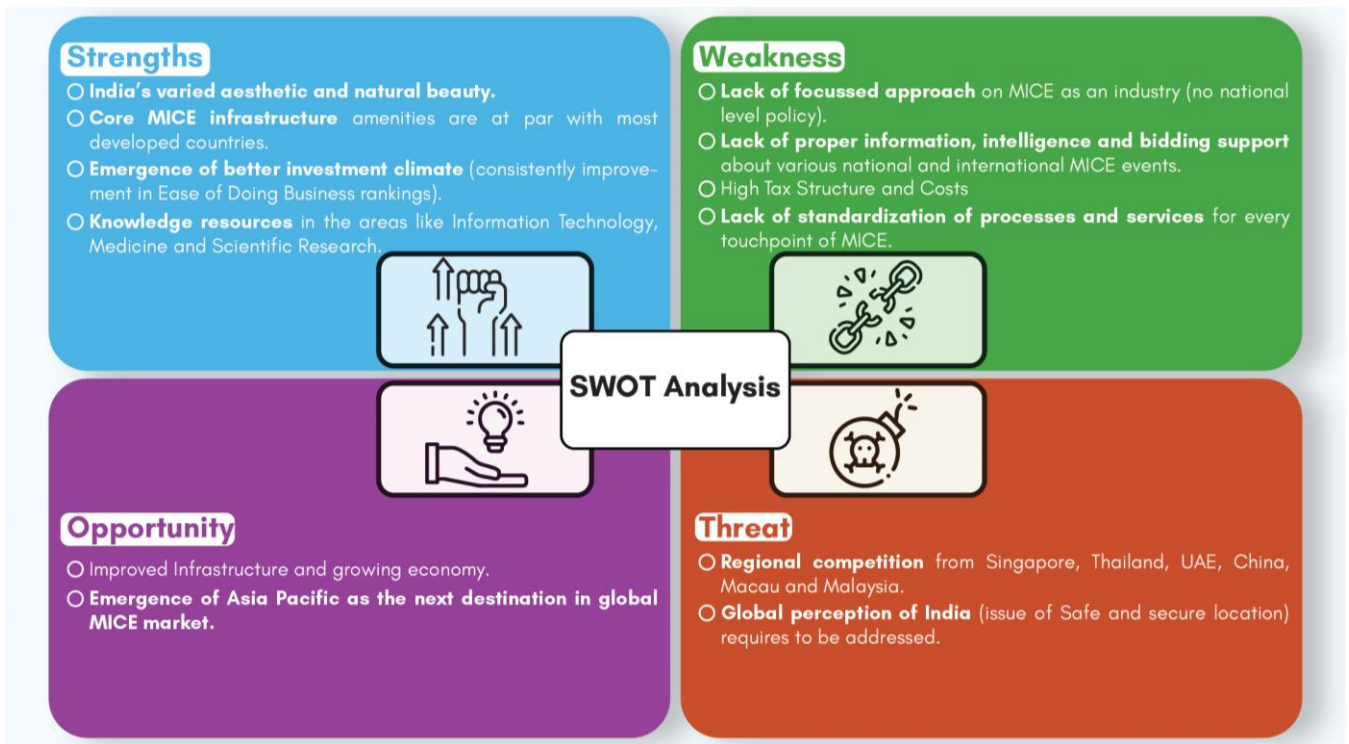
3.6.4. DRAFT NATIONAL STRATEGY AND ROADMAP FOR MICE

About MICE (Meetings, Incentives, Conferences and Exhibitions)

- Main purpose of MICE events is to create a networking platform for business, industry, government and Academic Community and engage in meaningful conversations.
- MICE is also known as 'Meetings industry' or 'Events industry'. Generally, they bring large groups together for a specific purpose.
- **Four elements of MICE are**
 - **Meeting:** coming together of a group of people to discuss or exchange information. For example: annual meetings, board meetings, sales meetings, product launches, presentations and trainings.
 - **Incentives:** corporate-sponsored trips for employees, distributors or clients. Unlike the other types of MICE, incentives are focused on leisure rather than business.
 - **Conferences:** events where the primary activity of the attendees is to attend educational and knowledge sessions, participate in meetings/discussions, socialize, or attend other organized activities.
 - **Exhibitions** are professionally organised events where products and services are displayed.

Advantage of developing MICE

- It not only gives a boost to economy in the form of income generation, but **creates huge employment opportunities in related hospitality service.**
- MICE tourism is year-round business. It is **beneficial for offsetting the low season** for airlines, hotels, restaurants, travel agencies.
 - **Indian MICE has less than 1% share in the estimated global MICE business** despite the natural & cultural advantages of India.
- **Converting MICE travellers into leisure travelers.**
- **Helps increase local government and private sector investments** that result in upgradation of general hospitality environment of the destination country.



Key Features of draft National strategy and roadmap for MICE

Aim	<ul style="list-style-type: none"> • To position India as MICE destination in the world and a hub of mega conferences and exhibitions.
Goals	<ul style="list-style-type: none"> • To enhance India's share in MICE business to 2% in five years from the current share of approximately 1% • To enhance India's International Congress and Convention Association (ICCA) ranking to top 20 in five years from 28th in year 2019. • To encourage the State Governments to set up 6 City level MICE Promotion Bureaus at major MICE destinations of Delhi, Mumbai, Bengaluru, Chennai, Kolkata and Goa, in the Country in two year and 20 major cities in next five years. • To encourage the Convention Bureaus to bid for international events and target 50% of the events coming to the country should be through MICE Bureaus
Key strategic pillars	<ul style="list-style-type: none"> • Governance and Institutional Framework will be provided at National level (Setting up of National Advisory Council for MICE, India MICE Board), State level (State MICE Promotion Committee and Bureau), City level (City MICE Promotion Bureau, coordination Committees). • Developing Eco-system for MICE (Identifying success factor for MICE destination, Hardware and services facets, Prioritising cities for development as MICE destination etc.) • Enhance competitiveness of Indian MICE industry (Infrastructure status for financing, Industry status in states, PPP for developing infrastructure etc.) • Enhance ease of doing business for MICE events (Access to Major Monuments and other attractions, Single Window Clearance for NOCs etc.) • Marketing India as a MICE destination (sub brand "Meet in India" under Incredible India, Support from Indian Missions, annual Incredible MICE India (iMICE India) event etc.). • Skill development for MICE industry (MICE Facilitator Program to cover the above range of activities and relevant skill sets).

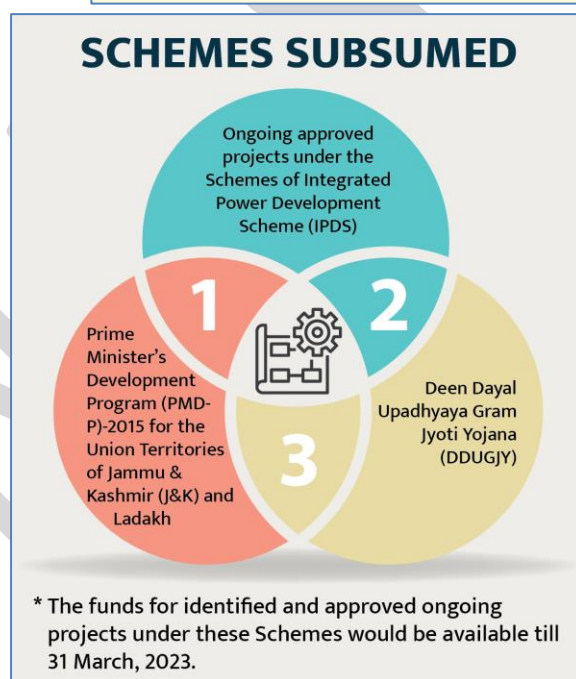
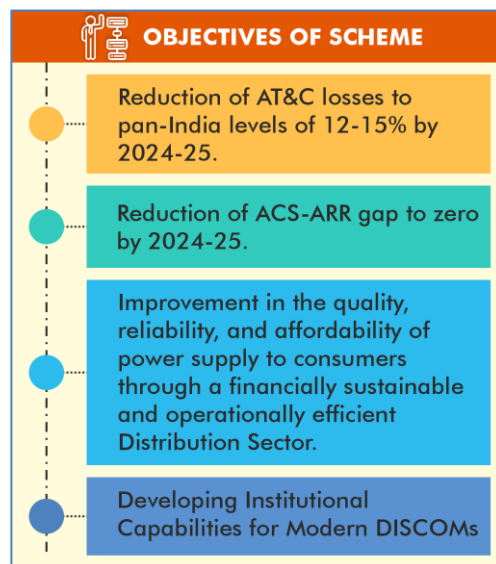
3.7. REFORMS-BASED AND RESULTS-LINKED, REVAMPED DISTRIBUTION SECTOR SCHEME

Why in News?

Recently, the Union Cabinet has approved a Reforms-based and Results-linked, Revamped Distribution Sector Scheme.

About the Scheme

- Aim of the scheme:** To improve the operational efficiencies and financial sustainability of all DISCOMs/ Power Departments excluding Private Sector DISCOMs.
 - The scheme will provide **conditional financial assistance to DISCOMs** for strengthening of supply infrastructure.
- Eligibility:** To be eligible for funding against the Scheme in that year, DISCOMs have to score a minimum of 60% of marks and clear a minimum bar in respect to certain performance parameters like:
 - aggregate technical and commercial (AT&C) losses;
 - average cost of supply (ACS)-average revenue realised (ARR) gap;
 - infrastructure upgrade performance; consumer services;
 - hours of supply;
 - corporate governance, etc.
- Time period:** The Scheme would be available till the year **2025-26**.
- Nodal agencies for implementation of the scheme:** REC Limited (formerly Rural Electrification Corporation Limited) and Power Finance Corporation (PFC).
- Financial Outlay:** Rs.3,03,758 crore with an estimated **Gross Budgetary Support (GBS) from Central Government** of Rs.97,631 crore.
- Financial assistance:**
 - For Prepaid Smart metering:** Grant of Rs 900 or 15% (whichever is lower) of the cost per consumer meter worked out for the whole project (Rs 1350 or 22.5% for Special Category States).
 - For works other than Smart metering:** Maximum financial assistance given to DISCOMs will be 60% of the approved cost (90% for Special Category States).
 - In addition, the DISCOMs can also avail of an additional special incentive of 50% of the aforementioned grants if they install the targeted number of Smart meters by December 2023.



Components of the scheme

Components	Provisions	Benefits
Consumer Meters and System Meters	<ul style="list-style-type: none"> Prepaid Smart Meters for all consumers except Agricultural consumers Prioritizing the urban areas, UTs, AMRUT cities, Government offices and High Loss areas for prepaid Smart metering Communicable AMI (Advanced Metering Infrastructure) meters proposed for all Feeders and Distribution Transformers 	For DISCOMs <ul style="list-style-type: none"> Enables energy accounting leading to better planning for loss reduction. For Consumers <ul style="list-style-type: none"> Strengthens DISCOMs to provide better service to consumers. ~25 crore consumers to be covered under prepaid Smart metering. Allows consumers to monitor their electricity consumption on a routine basis instead of monthly basis.
Feeder Segregation	<ul style="list-style-type: none"> Focus on funding for feeder segregation for un-segregated feeders. Convergence with the Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyan (PM-KUSUM) Scheme to solarize all feeders. 	<ul style="list-style-type: none"> Solarization of feeders will lead to cheap/ free day time power for irrigation and additional income for the farmers.

Modernization of Distribution system in urban areas	<ul style="list-style-type: none"> Supervisory Control and Data Acquisition (SCADA) in all urban areas Distribution management system (DMS) in 100 urban centers 	<ul style="list-style-type: none"> Artificial Intelligence would be leveraged to analyze data to enable DISCOMs to take informed decisions on loss reduction, demand forecasting, Time of Day (ToD) tariff, Renewable Energy (RE) Integration and for other predictive analysis.
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Prevalent Problems faced by the DISCOM sector in India

- **High legacy debt:** DISCOMs have not been able to clear their past debts to Generators. The PFC's Report on Utility Workings for 2018-19 showed dues to generators were ₹2,27,000 crore, well before COVID-19. As per and Crisil report predicts 30 per cent increase in their debt to ₹4.5-lakh crore in coming times.

- **High AT&C loss:** India's average AT&C losses are at around 21.4% compared to countries like the UK and US, where they are 6-7%.

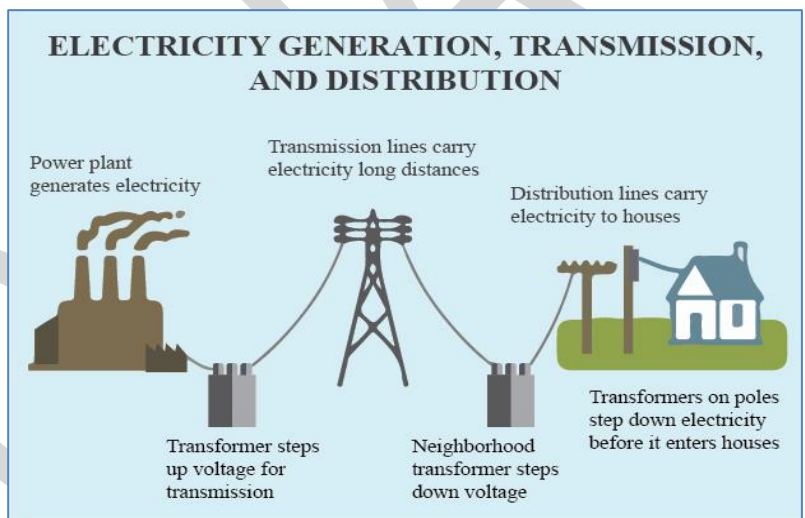
- **Billing Issues:** DISCOMs have not been able to bill all the customers efficiently and relied more on estimated and provisional billing rather regular meter reading.
 - Power is also being siphoned off in many areas by consumers illegally.
 - DISCOMs are also lack efficiency in collecting billed amounts from the customer on time.

Aggregate Technical and Commercial Losses (AT&C)

- Technical losses represent the power that goes to waste during transmission and distribution with theft also playing a part.
- Commercial losses include the failure to realise revenues due to inefficient billing and collection and payment defaults.

- **Issues related to tariff:**

- **Lack of cost reflective tariffs:** In principle tariff design should be cost reflective. It should be designed on the basis of different cost of supply for different users, such as Industrial, commercial, etc, in proportion to the voltage use. However, DISCOMs uniformly average the supply costs and design tariffs to recover these from consumers.



- **Distorted cross-subsidies:** Electricity tariffs in India are fixed at the predetermined level, keeping in mind socio-economic considerations to meet consumer's capacity-to-pay. Cross subsidy results into higher tariff for businesses and industries. Thus, industries prefer switching to "captive power generation" resulting in further decline in revenue to state utilities.
- **Absence of tariff hikes:** Inadequate tariff hikes resulted in increased regulatory assets and associated carrying costs. In Financial Year 2021, most electricity regulators refrained from hiking consumer tariffs which resulted in financial instability.

- **State Monopoly:** The state monopoly in DISCOM sector decreases the choices available to consumers. It also creates impediments in commercial makeover of DISCOMs.
- **Delays in subsidy and other payment disbursements:** States like Andhra Pradesh, Chhattisgarh, Karnataka, Punjab, Rajasthan, and Telangana have consistently defaulted on full subsidy payments. These delays have stretched the short-term working capital requirement of DISCOMs.
 - Also, due to weakening of financial position during the pandemic, several States have not been able to pay their dues to DISCOMs on time.
- **Lowered demand during the Pandemic:** Pandemic and its impact on economy has led to lowering demand of electricity by high-paying commercial and industrial (C&I) consumers and consequently added to DISCOMs' revenue losses. It also led to a reduction in cross-subsidy inflow from C&I consumers.
- **Other losses:** Expensive thermal power purchase agreements (PPAs), and a lack of modern technology and infrastructure development.

Way Forward

Following measures can be taken to improve condition of DISCOMs:

- **Improve DISCOMs' revenue recovery through-**
 - Performance-linked incentive for DISCOM's staff and effective monitoring systems.
 - Introduce incentives for online and timely bill payments.
 - Enhancing staff capacity for improved billing and collection.
 - Investing in bill collection infrastructure and community engagement to address non-payment.
- **Making fiscal headroom through subsidy reduction-**
 - Taking lessons from the existing Direct Benefit Transfer (DBT) models in Andhra Pradesh, Madhya Pradesh, Punjab, etc.
 - Developing framework for targeting of subsidies to domestic and agriculture consumers.
- **Reducing government dues through-**
 - Time-bound planning to clear pending dues and arrears.
 - Mandate No Dues Certificates for state departments to avoid dues build up.
- **Regular Tariff revision and addressing idle regulatory assets through-**
 - Issuing of bonds through securitization of receivables against the DISCOM's regulatory assets as has been done in Rajasthan.
 - Inflation adjusted tariff hikes.

3.8. INDIA'S AGRICULTURAL EXPORT

Why in news?

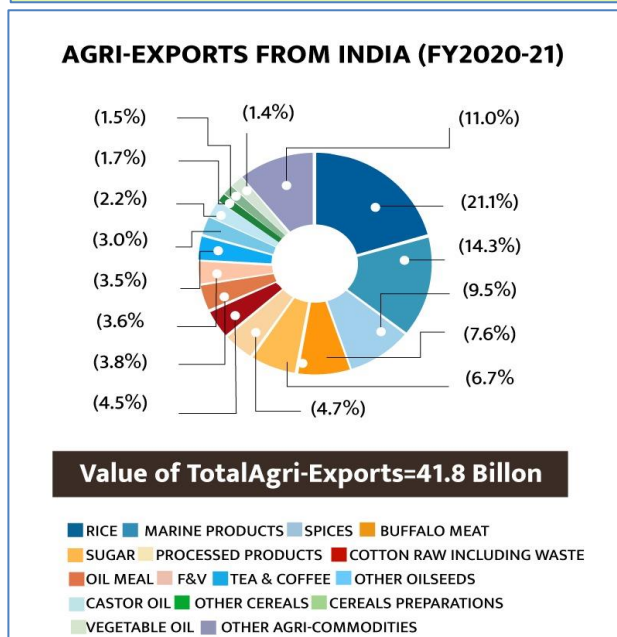
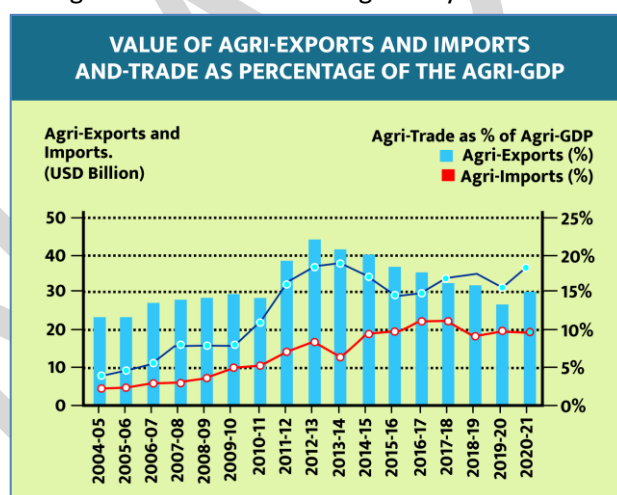
Agri-exports touched \$41.8 billion in FY 2020-21, registering a growth of 18 per cent over the previous year.

India's agri-export ecosystem

- India has been a **net exporter of agri products since the economic reforms began in 1991.**
- India occupies a leading position in global trade of agricultural products.
- However, its **total agricultural export basket accounts for a little over 2.5% of world agricultural trade.**
- The **major export destinations were USA, Saudi Arabia, Iran, Nepal, and Bangladesh.**
- Among the key agriculture commodities exported from India were **marine products, basmati rice, buffalo meat, spices, non-basmati rice, cotton raw, oil meals, sugar, castor oil and tea.**

Interventions that promoted recent spike in India's agricultural export

- **Policy-level interventions:** **Pesticide residue problems have affected exports of basmati rice** key traditional export product **to the EU** due to stringent norms imposed for chemicals such as Tricyclazole and Buprofezin, extensively used in rice cultivation in India.
 - Testing by the Export Inspection Council (official export –certification body of India under Ministry of Commerce and Industry) has been made mandatory for basmati exports to the EU, which led to a decrease in the number of alerts.
 - Punjab imposed a ban on sales of nine chemicals, including Tricyclazole and Buprofezin, during the Kharif season 2020.
 - APEDA, in collaboration with the trade bodies, has taken measures to create awareness in the basmati-growing areas.



- **Expansion of products into new markets:** Demand for Indian cereals was robust in 2020-21, with **shipments sent to several countries for the first time**, such as rice to countries like Timor-Leste, Puerto Rico, and Brazil; wheat to Yemen, Indonesia, and Bhutan, etc.
- **Opportunities that Covid-19 offered:** The sharp rise in exports of non-basmati rice can be attributed to **lower prices compared to that of major rice exporters**, Thailand and Vietnam, and also because these countries stopped exports due to the lockdown.
- **Rise in demand of organic products:** Organic exports that include products such as cereals and millets, spices and condiments, tea, medicinal plant products, dry fruits, and sugar grew 51 per cent year on year. The growth can also be attributed to demand for such products due to the outbreak of the pandemic.

Challenges in India's agri export sector

- **Lack of Stable Trade Policy Regime:** Given the domestic price and production volatility of certain agricultural commodities, there has been a **tendency to utilize trade policy as an instrument to attain short term goals** of taming inflation. Such circumstantial measures break export supply chains and hampers India's image as a reliable supplier affecting price realization for Indian produce.
- **Infrastructure and Logistics:** Poor connectivity of the land locked production areas (E.g. Bihar, Jharkhand, NE states and hilly regions, etc.) to the ports or terminals is a stiff challenge. Also, the link roads from farms to the main road is underdeveloped in most of the states. Exporters also face congestion at the ports due to high waiting periods of the shipment.
- **Low volume of horticultural commodities:** Exporting horticultural products requires significant volumes of high-quality standardized produce of the same variety. Small landholding pattern and low farmer awareness in India has often meant limited volumes of different varieties of multiple crops with little or no standardization.
- **Poor training & Skill level development**
 - **At farm:** Inadequate harvest and postharvest managements paving the way for rejection of products by the importing country through stringent application of Sanitary and Phytosanitary Measures (SPS) and the Agreement on Technical Barriers to Trade (TBT) by importing countries.
 - **At exporters level:** Exporters lack awareness on existing schemes and policies related to exports as well as about documentation and procedures to be followed for exports.
- **Less involvement of States:** Agriculture is a state subject whereas "trade and commerce" are in the Union list and States often see no formal role for themselves in the nation's agricultural exports.
- **Challenges highlighted by the 15th Finance Commission:** Low yields and farm productivity; low focus on value addition; and large domestic market are hindrances to India's Agri-export potential.

Related information

Agriculture Export Facilitation Centre (AFEC), Pune

- It is India's first AFEC established by the **Mahratta Chamber of Commerce Industries and Agriculture (MCCIA)** in association with the National Bank for Agriculture and Rural Development (**NABARD**).
- It aims at **boosting the agricultural and food exports of Maharashtra** by disseminating need-based information, providing timely guidance and organising training courses for all stakeholders.
- It will serve as a **one-stop destination to provide exporters all possible assistance**.

Way ahead: The Agriculture Export Policy 2018 sets out a target of US\$ 60+ Billion by 2022, for agricultural exports, and US\$ 100 Billion in the next few years. It has given following recommendations to increase the agri export-

- **Stable Trade Policy Regime:** It is imperative to frame a stable and predictable policy with limited State interference to send a positive signal to the international market. One way to do this is to decide that export restrictions/bans would be resorted to only in the rarest circumstances. This alone will provide the farmer some confidence to plan for the overseas market.
- **Infrastructure and logistics:** Identify major ports where current/projected bulk and container agri traffic demands infrastructure and modernization initiatives.
 - **Sea Port** - development of dedicated perishable berths, agricultural jetties;
 - **Railway** -infrastructure at stations to handle agri products, Reefer Wagons;
 - **Airport** -Identify the challenges of operationalizing existing defunct infrastructure at ports such as the Centre for Perishable Cargo (CPC) and requirement of new CPCs, loaders, designated and sufficient quarantine areas, better Hinterland Connectivity.
- **Holistic approach to boost exports:** A holistic government approach will address issues of R & D for improved varieties, value addition and packaging, establishment of a good standards regimen, a response to

Sanitary and PhytoSanitary (SPS) and Technical Barriers to Trade (TBT) barriers faced by Indian products, identification of winning sectors and strategies for augmenting exports in those sectors.

- **Greater involvement of State Governments in Agriculture Exports:** By identification of a nodal State Department / Agency for promotion of agriculture export; Inclusion of agricultural exports in the State Export Policy; Infrastructure and logistics to facilitate agricultural exports; Institutional Mechanism at Union and State level to support exports.
- **Focus on Clusters:** Export centric clusters is likely to result in a more focused pre and post-harvest management of the production as well as in upgrading the supply chain to attain much higher levels of export from those clusters.
- **Skill development:** Work force needs to be provided with skill development opportunities on a regular basis to keep pace with changing customer preferences. Also, capacity development of different food processors, particularly from MSME and unorganized segments is required to enable them to tap overseas markets and global agri-business value chain.
- **Marketing and promotion of “Brand India”:** Constitute separate funds dedicated to marketing of organic, value added, ethnic, GI, Region specific and branded products.
- **Other:** Reforms in APMC Act and streamlining of mandi fee, promoting value added exports; develop uniform quality and packaging standards for organic and ethnic products; ease of Doing Business (EODB)& Digitization; attract private investments in export oriented activities and infrastructure; etc.

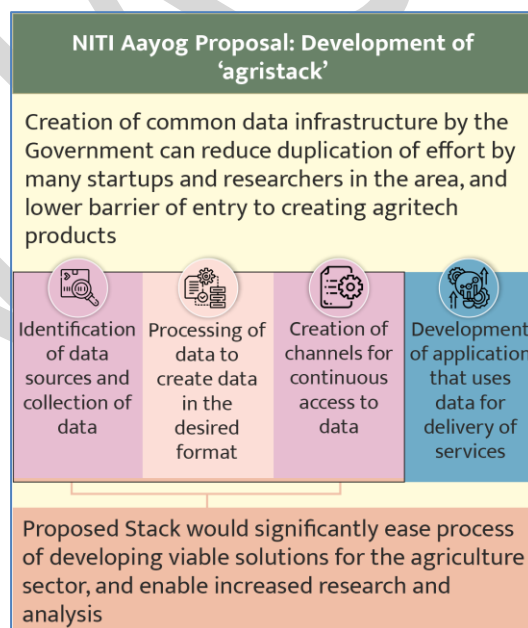
3.9. AGRISTACK

Why in News?



Recently, many organisations that work for farmers’ rights and digital rights flagged concern over government’s plan of creating ‘AgriStack’.

About Agristack

- AgriStack is a **collection of technologies and digital databases** proposed by the Union government that focuses on farmers and the agricultural sector.
- AgriStack may have a **Farmers’ Stack, a Farm Stack and a Crop Stack** integrated on a technology platform linking existing digital land records, cadastral maps of farms and information.
 - **Farmers’ Stack can consist of farmer data with Aadhaar** as unique identifier, Farm Stack can have geospatial information on each farm (with a farm identity) owned by a farmer with cadastral maps, and **Crop Stack can contain crop data linked to farms.**
- Data would be **interlinked to land registration, cadastral maps and satellite images** from state government departments and public entities.
- Government’s schemes such as **Pradhan Mantri Fasal Bima Yojana (PMFBY), PM-KISAN and Soil Health Card will be integrated through a common database** along with land record details over a period of time.
- The Department of Agriculture, Cooperation and Farmers Welfare, recently entered into a Memorandum of Understanding (MoU) with Microsoft Corporation to create a ‘Unified Farmer Service Interface’ through its cloud computing services.
 - The MoU will start as a pilot project in 100 villages of Uttar Pradesh, Madhya Pradesh, Gujarat, Haryana, Rajasthan and Andhra Pradesh.
 - This sets in motion the ministry’s plan of creating ‘AgriStack’.
- Also, four other MoUs were signed — with Star Agribazaar, Patanjali Organic Research Institute for agricultural management and services, Amazon Internet Services, and Esri India for different operations under AgriStack such as issuance of pre- and post-harvest advisories, creation if national agriculture geo hub etc.
- Also, government is **preparing a centralised farmers database** and formulating various services based on it in order to create a digital ecosystem for agriculture.



- This database will be linked with the land records of farmers across the country and **unique farmer IDs will be generated.**
- With an **integrated database for farmers**, information related to all benefits and assistances provided through various schemes can be kept at one place.

Challenges in agriculture and possible role of technology in addressing them				
 Challenges in agriculture				
Digital technologies and AI have the potential to significantly impact a number of challenges to Indian agriculture today, though major change cannot be driven by technology alone				
Financing	Poor access to credit and information	XX	Low potential to solve via digital/AI	
		XX	High impact or solve via digital/AI	
Farm Input	Small Land holding size	Lack of irrigation coverage	Poor mechanization of farms	High dependence on rainfall for water
Farming	Decrease in soil fertility	Lack of crop diversification	Pest infestation leading to crop loss	Changing cropping patterns
Selling distribution	Wastage in supply chain	Exploitation of farmers by intermediaries	Poor market discovery mechanisms	
 Major areas of digital technology application				
The growth of 'agritech' solutions and startups is indicative of the growing demand for solutions of specific applications.				
Financing	Insurance payouts linked to weather field data	Data backed credit risk assessment	XX	AI enabled solutions
			XX	Traditional digital enabled solutions
Farm Input	Information dissemination through chat/SMS/call	Tech enabled agri-extension services	Online market for agri-inputs	
Farming	Precision farming using IoT and remote sensing data	Predictive post management	Real time yield forecasting	
Selling distribution	Price discovery, marketing through online channels	Track and trace of produce through supply chain		

Benefits of Agristack

- **Improved access to formal credit:** It can enable **closer study of the flow of agricultural credit to specific land parcels.** It will also enable credit flows and interest subventions to become more transparent.
 - It can enable financing for small and marginal farmers
- **Crop insurance products and delivery can be improved:** especially with geographic information system (GIS) and remote sensing technologies.

- **Smooth mechanism for marketing and price discovery:** It can enable the provision of market intelligence for de-risking commodity price fluctuations, demand-supply forecasting and weather advisory.
 - A marketplace can be created where various **entrepreneurs and suppliers of products and services can meet.**
- **Better quality of input:** Agristack could address the **asymmetry in information flow** by providing all information about farmers and their farming easily to relevant stakeholders (seed, chemical fertiliser and pesticides, machinery companies or fin-tech companies).
- **GIS and IoT (internet of things) services can be deployed to give feedback to stakeholders.** For example, at the post-harvesting stage, a trigger to harvesting equipment suppliers and buyers may be sent, who can approach the cultivator for providing services.
- **Prevent leakages of aid** with accurate targeting.

Concerns raised against Agristack



Data security

It is being implemented in the absence of a data protection legislation. Without such safeguards, private entities could exploit farmers' data to whatever extent they wish to.



Financial exploitation

Once Fintech companies are able to collect granular data about the farmers' operations, they may offer them usurious rates of interest precisely when they would be in the direst need for credit.



Exclusion error

- Proposed farmers' database will be based on the digitised land records which is full of loopholes even for land-owning farmers and "exclude entire categories of landless farmers.
- Making land records the basis for farmer database may exclude tenant farmers, sharecroppers and agricultural labourers from the centralised database



Digital access

There is a massive gap in digital access and literacy in the country, which will render any such project unviable.

Way forward

- **Ensure digital security and privacy:** Government should prepare a stronger framework to protect the interests of the farmers whose data is being used.
- **Wider consultation:** Since agriculture is a state subject, it is critical that **state governments are taken on board.** There is a need for creation of common agricultural data standards and sharing **mechanisms through inter-ministerial/centre-state consultations.**
- **Ensure asymmetric flow of information:** There is no denial that there is potential in data and technology in empowering farmers but only when the flow of information is balanced.

Other government efforts towards digitisation in Agriculture

- **AI-Sowing App:** Microsoft has developed this app in collaboration with International Crops Research Institute for the Semi-arid Tropics (ICRISAT). This application sends advisory to the farmers regarding the optimal date of seed-sowing.
- NITI Aayog has partnered with IBM to develop a **crop yield prediction model** backed by AI to provide real-time data and communicate the required advisory to farmers.

- **Kisan Suvidha:** It is an omnibus smartphone app that helps farmers by providing them relevant information regarding weather, dealers' market prices, plant protection, agro advisories, IPM practices etc.
- **MKisan App:** This app enables farmers and stakeholders to obtain advisories and other information being sent by experts and govt. officials through mkisan portal without registering on the portal.
- **Farm-o-pedia:** Developed by CDAC Mumbai, this is a multilingual Android app that targets the farmers of rural Gujarat. The major functionalities of this app are, it helps farmers get suitable crops as per soil and season, helps farmers get crop-wise information, weather monitoring and cattle management.
- **Crop Insurance App:** is used to calculate Insurance Premium for notified crops based on area, coverage amount and loan amount.
- **Shetkari App:** helps download Shetkari Masik an Agriculture magazine & there is no requirement of internet to read it.
- **Agri Market app:** provides information of market price of all crops at the markets located within 50 kilometre radius of the device's location.
- **Pusa Krishi app:** provides information about various types of crops.

3.10. HORTICULTURE

Why in News?

Recently, Union Agriculture Minister launched **Horticulture Cluster Development Programme (CDP)** to ensure holistic growth of horticulture.

More on news

- It is a **central sector programme**, implemented by **National Horticulture Board**, starting with pilot phase in **12 horticulture clusters** (out of total 53 clusters) covering nearly **10 lakh farmers from 11 States/UTs**.
- It will leverage **geographical specialisation** and promote **integrated and market-led development**; making Indian horticulture clusters globally competitive.
- Ministry of Agriculture and Farmers Welfare has also provided an **enhanced allocation of Rs. 2250 Crore for the year 2021-22** for 'Mission for Integrated Development of Horticulture' (MIDH).

Mission for Integrated Development of Horticulture (MIDH)

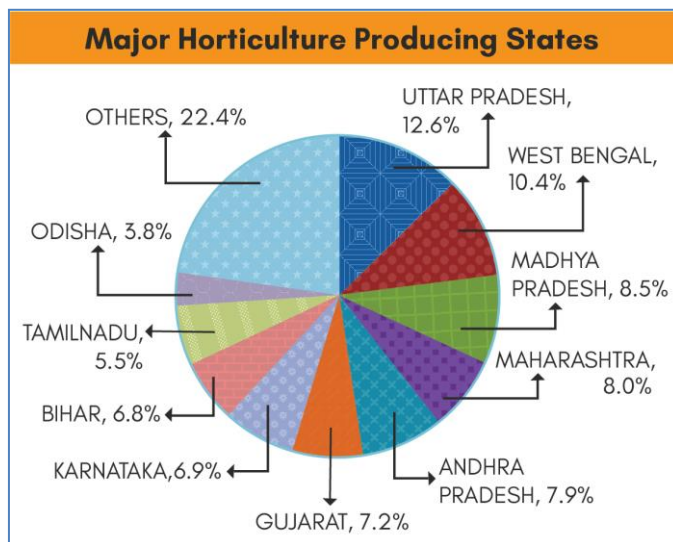
- It is a **Centrally Sponsored Scheme** for the **holistic growth of the horticulture sector**.
- Under MIDH, Government of India (GOI) **contributes 60%, of total outlay for developmental programmes in all the states except states in North East and Himalayas**. In the case of North Eastern States and Himalayan States, GOI **contributes 90%**.
- MIDH also provides **technical advice and administrative support** to State Governments/ State Horticulture Missions (SHMs) for the Saffron Mission and other horticulture related activities Rashtriya Krishi Vikas Yojana (RKVY)/National Mission on Sustainable Agriculture (NMSA).
- **Strategies under the mission:**
 - Promote R&D technologies
 - Adopt an end-to-end holistic approach covering pre-production, production, post harvest management
 - Improve productivity through diversification, extension of appropriate technology etc.
 - Improve post harvest management, processing for value addition and marketing infrastructure.
 - Promote partnership, convergence and synergy among R&D, processing and marketing agencies.
 - Promote FPOs
 - Support capacity-building and Human Resource Development
- **Schemes under MIDH:**

Schemes under MIDH	
Sub Scheme	Target group / area of operation
NHM-National Horticulture Mission	All states & UTs except states in NE and Himalayan Region.
HMNEH- Horticulture Mission for North East & Himalayan States	All states in NE and Himalayan Region.
NBM-National Bamboo Mission	All states & UTs
NHB- National Horticulture Board	All states & UTs focusing on commercial horticulture.
CDB-Coconut Development Board	All states & UTs where coconut is grown.
CIH- Central Institute for Horticulture	NE states, focusing on HRD and capacity building.

- **CHAMAN 'Coordinated programme on Horticulture Assessment & Management using geoinformatics'** was initiated in 2014 under MIDH for **better horticulture assessment and development** through remote sensing, GIS and field survey.

About Horticulture

- Horticulture includes production, utilisation and improvement of horticultural crops, such as **fruits and vegetables, spices and condiments, ornamental, plantation, medicinal and aromatic plants.**
- Horticulture crops are characterised by **high-value crops, higher productivity** per unit of area and lower requirement of irrigation and input cost.
- The **diverse agro-climatic conditions and rich diversity in crops and genetic resources** enable India to produce a wide range of horticultural crops round the year
- India accounts for **13% of the global production of fruits and 21% of vegetables**, making it the **second largest producer**, after China. India also **ranks at first position** in the production of Banana, Mango, Lime and Lemon, Papaya and Okra.
 - Fruits and vegetables account for **nearly 90% of total horticulture production** in the country.



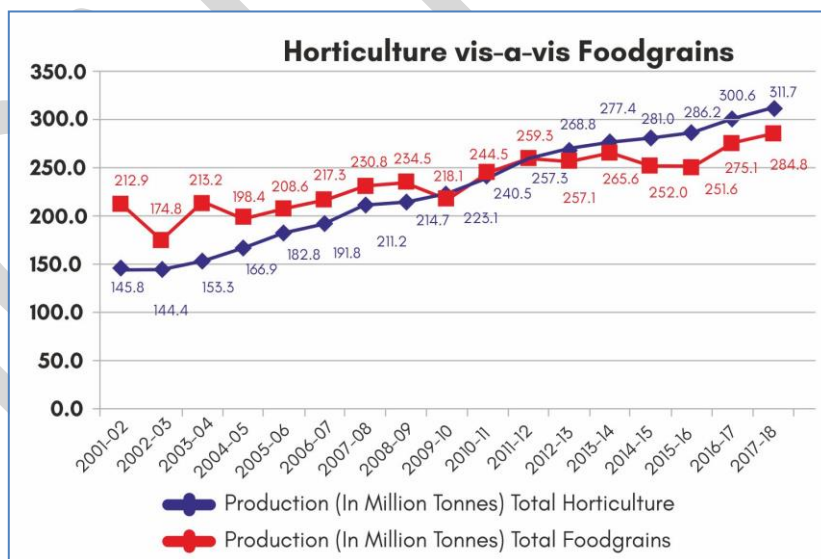
Significance of Horticulture

- Sunrise sector:** Horticulture is increasingly recognised as a **sunrise sector**, owing to its potential to raise **farm income, provide livelihood security and earn foreign exchange** through export.
- High export value:** Horticultural sector accounts for about **37% of the total exports** of agricultural commodities in India. Overall exports of horticulture produce have recorded **sustained rising trend** over past several years (18% per year). Further, **share of value of export earnings from horticultural crops has been higher** than the export value of total food grain.

	2018-19	2019-20*	2020-21**
Area (in mn hectares)	25.74	26.46	27.17
Production (in mn tonnes)	311.05	320.77	326.58

*Final Estimates **First Estimates

- Increasing production:** The production of Horticulture crops has **outpaced the production of food grain since 2012-13** (Refer Fig). Horticulture production for FY21 is pegged at **326.58 million tonnes (mt)** for FY21, an increase of 5.81 mt over FY20.
- High productivity as compared to food grains:** The productivity of horticulture has **increased from 8.8 tonnes per hectare in 2001-02 to 12.3 tonnes per hectare in 2018-19** whereas productivity of total food grain increased from **1.7 tonnes per hectare to 2.3 tonnes** during the same period.
- Rise in demand:** The **demand of horticulture produce is on the rise** due to increasing population, changing food habits, realization of high nutritional value of horticultural crops and greater emphasis on value addition.
 - Country's **estimated demand of fruits and vegetables is 650 Million MT** by the year 2050.



Constraints in development of horticulture

- Low yield per hectare:** The horticulture sector in India is characterized by **small, segregated farms, rain fed crops**, inadequate supply of **quality planting material** (like seeds and saplings) which leads to low per-hectare yields.
- Inadequate Post harvest infrastructure:** Imperfect coordination between supplies and demand and **seasonality and perishable nature** of horticulture crops requires adequate cold storage facilities and

associated infrastructure which are not available. **Capital intensive nature and long gestation period** discourages investment in the sector.

- **Huge Wastage:** Of the total annual production, **30-40 per cent is wasted** before consumption. Horticulture produce suffers significant loss during transport stage due to **unsuitable transport containers, overloading** of mixed fruits and vegetables, **heat accumulation** within the transport vehicles etc.
- **High cost of production:** Biotic and abiotic stress, **more reliance on fertilisers**, low access to markets and **lack of bargaining power** due to relatively small produce contribute to lesser returns. **Repeated price shocks** force farmers to shift to less riskier food grains.
- **Limited support by Government:** For instance, Horticulture crops are **not covered under minimum support prices (MSP)** available for grains and pulses. Farmers **lack information** regarding demand of crops and rely on **unverified price signals** to decide which crops to grow.
- **Constraints on exports:** Low exportable surplus, stiff competition in the global market, poor market intelligence, lack of brand status to the commodities, and export in the form of raw materials are the major market related constraints inhibiting exports growth.
- **Non trade barriers** like **sanitary and Phyto sanitary measure** have also affected market access due to poor or non-uniform standards of commodities.

Way forward

- The current base of the export destination **needs to be widened**, so as to reduce the **price volatility, spread risk and expand export volume**.
- The key instrument in development of the horticultural sector would be **location specific research and development** programmes, **development of infrastructure in terms of cold storage**, marketing yards and rural roads; and deepening and widening processing facilities. Urgent steps are needed to **promote value addition and for entrepreneurship development** in processing of horticultural products.

3.11. COTTON CULTIVATION

Why in News?

Recently, two reports were released by Cotton 2040 titled “Physical Climate risk assessment for global cotton production” and “Physical Climate Risk and vulnerability Assessment for India”.

Physical Climate Risk and vulnerability Assessment for India

This report is the **first-ever detailed physical climate risk and vulnerability assessment** for India’s cotton value chain.

Key Findings:

- Climate change could expose **one third of India's cotton growing regions to high risks** from temperature increases, changes to rainfall patterns and extreme weather events by 2040.
- In the 2040s, cotton-growing regions across India will be subject to **greater heat stress** than under present-day conditions.
- In some regions, this increase in temperature is projected to be coupled by an **increase in water stress**.
- All districts are projected to experience an **increase in the number of days at which labour productivity significantly decreases**.
- Common areas of vulnerability across all studied Cotton growing districts include **multidimensional poverty, low female work participation rates, low male and female literacy rates, and limited access to banking services, technology and information**.

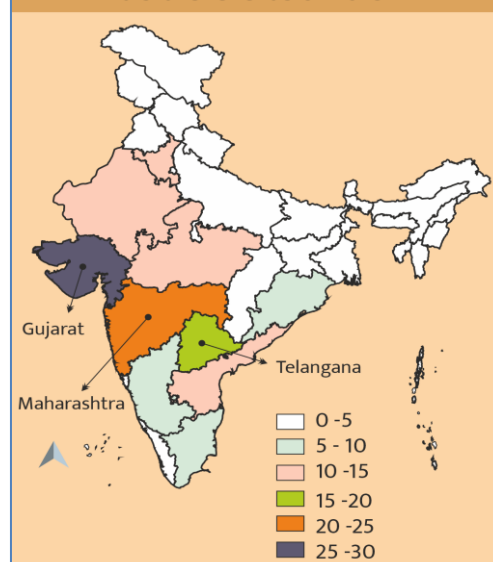
Physical Climate risk assessment for global cotton production Key Findings:

- All global cotton-growing regions will be exposed to **increased risk from at least one climate hazard**.
- All six highest cotton-producing countries – India, USA, China, Brazil, Pakistan and Turkey – are exposed to **increased climate risk, particularly from wildfire, drought and extreme rainfall**.

Cotton 2040

- Cotton 2040 is a platform that envisages a **sustainable global cotton industry** by bringing together leading international brands and retailers, traders, farmers and other stakeholders across the value chain
- **It is facilitated by Forum for the Future**, a leading international sustainability non-profit.

Percentage of national production on a state level as of 2019







Cotton Cultivation in India

- Cotton is a **Kharif crop and grows well in black cotton soil** (high water retention capacity) of deccan plateau.
- Annual temperature requirement is **20-28 degree Celsius and rainfall of 55-110 cm is ideal**. It requires **minimum 180 frost-free days**.
- The majority of cotton cultivation comes from **ten major cotton growing states**, which are grouped into three diverse agro-ecological zones (Refer Fig).

Northern Zone - Punjab, Haryana and Rajasthan at 16.8% of national production	Central Zone - Gujarat, Maharashtra and Madhya Pradesh at 54.6%	Southern Zone - Telangana, Andhra Pradesh, Karnataka and Tamil Nadu at 26.9%
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KEY FACTS ABOUT COTTON CULTIVATION IN INDIA

 Largest Producer	<ul style="list-style-type: none"> ▪ India is the highest cotton producing country in the world (as of 2020) and ranks at first place in terms of land area under cotton cultivation (38% of global cotton area). ▪ India is second largest consumer of raw cotton, after China.
 Cotton Species	<ul style="list-style-type: none"> ▪ Indian farmers grow four species of cultivated cotton; <i>Gossypium arboreum</i> (desi cotton) and herbaceum (Asian cotton), <i>Gossypium barbadense</i> (Egyptian cotton) and <i>Gossypium hirsutum</i> (American upland cotton). ▪ Currently, more than 80% of cotton grown in India are Bt cotton hybrids of the upland variety <i>G. hirsutum</i>.
 Livelihood	<ul style="list-style-type: none"> ▪ Roughly 60 million people are engaged directly or indirectly in the cotton value chain, with about 40-50 million people employed in the cotton trade and its processing. ▪ The cotton textile industry employs the highest number of people in the country after agriculture and contributes about 4% to the country's GDP.
 Exports	<ul style="list-style-type: none"> ▪ In 2018-19, textile and clothing constituted 12% of India's total exports, a large share of which was cotton yarn. ▪ In 2019-20, India produced 6,000 metric tonnes of cotton lint out of which 900 metric tonnes was exported.

Challenges to Cotton Cultivation in India

- **Low Productivity:** Although India is the number one contributor to the world's total cotton production, its yield (454.43kg/ha) is very low **compared to other countries** such as the **USA (955 kg/ha) and China (1764 kg/ha)**.
- **Ever increasing cost of inputs:** Although GM companies provide better technology, they sell **expensive cotton seeds and fertilizers**. Costly inputs and **non-commensurate market price** of cotton is **lowering down profitability** over time.
 - Additionally, **Spurious inputs** such as pesticides make situation worse.
- **Poor irrigation facilities:** Approximately **62% of India's cotton is produced in rain-fed areas** and 38% on irrigated lands. Lack of irrigation facilities makes cotton cultivation **vulnerable to monsoon fluctuations**.
- **Inferior Technology: Absence of modern technology** in cultivation, as well as ginning, has affected the yield. **Non-availability of small scale low cost machines** for sowing and picking, Labour shortages and enhanced wages results in **delayed crop operations** which increases the risk of the **cotton getting contaminated**.
- **Unpredictable market prices: Fluctuating market prices** for cotton and the **inability to compete with the low prices on the global market**, enabled by the important subsidies given to cotton farmers in Western countries, are also affecting cotton planters adversely.
- **Cotton's climate sensitivities:** Cotton is grown predominantly in hot and dry climates, however it is **sensitive to various climate parameters** during different stages of crop development.

- Gradual changes in climate parameters, rapid shifts in extreme weather events, **increase in climate hazards, more erratic and less reliable rain** all present increased risk to cotton cultivation.
- The **long growing season** (150 to 180 days) makes cotton susceptible to disease and pests. Further, a **warmer climate will favour pests and diseases**, presenting a further threat to cotton.
- Although the crop is relatively resistant to short periods of waterlogging, extreme rainfall events can **inundate cotton plantations** and cause widespread damage to agricultural crops.
- **Genetic Purity Erosion:** Due to **deterioration in the genetic purity** of cotton varieties and hybrid seeds and **inconsistencies in the admixtures** of the cotton fiber, it becomes difficult to assess the quality of the cotton production. Nonetheless, **importers focus heavily on quality consistency**.
 - Further, **competition from artificial fibres** with a lower cost of production and higher consistency has sprung up.
- **Other Challenges:** Low soil **organic carbon** content, significant **decrease in fertiliser factor productivity** of Indian soils, **Insect Resistance development** to Bt cotton and insecticides, **Imbalanced fertilizer usage** and micro-nutrient deficiencies, adverse effects of pesticides on human health and **soil degradation, water pollution and poor microbial diversity**.

 <p>Crop improvement:</p>	 <p>Crop Production:</p>
<ul style="list-style-type: none"> • Genetic enhancement with reference to climate change, • Developing epigenetically engineered cotton for higher productivity, • Early maturing varieties for rainfed regions, • Robust genetic sources for abiotic resistance (salinity, drought and heat tolerance) 	<ul style="list-style-type: none"> • Conservation Agriculture Technologies and soil moisture conservation, • Biological Weed Management Technologies, • Combined effective water-nutrition management, • Mechanization of operations to substitute labour drudgery.
 <p>Plant Protection</p>	 <p>Seed Science & Technology</p>
<ul style="list-style-type: none"> • Robust research on components of Integrated Pest Management (IPM) and Insect Resistance Management (IRM), • Research on host plant resistance to whiteflies and rapid diagnostic tools especially for cryptic insects and diseases. 	<ul style="list-style-type: none"> • Simple cost-effective nurseries for hybrids, • Simple and cost-effective genetic purity testing method for commercial hybrids (other than that for the transgene), • Research on pollination for seed production and quality.

Way forward

Central Institute for Cotton Research (established by ICAR) in its report '**Vision 2050**' has suggested that **more funding on Cotton research** can help in bridging critical gaps in areas (*refer infographics*)

3.12. SEMICONDUCTOR MANUFACTURING IN INDIA

Why in News?

Government is reportedly working on a plan to offer around \$1 billion in cash to every company that sets up a Semiconductor chip manufacturing unit in India.

About Semiconductor

- A semiconductor is a **physical substance designed to manage and control the flow of current in electronic devices and equipment**. It either doesn't allow a freely flowing electric current or repels the current completely.
- Semiconductors are an **essential component of electronic devices, enabling advances in communications, computing, healthcare, military systems, transportation, clean energy, and countless other applications**.
- It's generally created using silicon, germanium, or other pure elements. Semiconductors are created by adding impurities to the element.
 - The conductance or inductance of the element depends on the type and intensity of the added impurities.
- There are **two basic types of semiconductors**.
 - An N-type semiconductor is used when its conductance is higher, or there is a large number of free electrons.
 - A P-type semiconductor is used when its inductance is higher, and there are less free electrons.
- Global semiconductor industry is **dominated by the US, South Korea, Japan, and Taiwan**. The US leads the market with a 47% share, followed by South Korea at 19%.

Why is India trying to facilitate Semiconductor manufacturing?

- **To tackle global shortage:** resulting from a surge in demand for electronic items after the outbreak of the COVID-19 pandemic last year, is pushing several countries to have their own chip-making facilities to bring down their dependency on the global supply chain.
 - Demand for semiconductors grew massively in 2020, increasing production requirements across the world. COVID-19 led to an increase in worldwide chip sales from \$412.2 billion in 2019 to \$439 in 2020.
- **Electronics manufacturing:** India is the second-largest smartphone manufacturer in the world after China, and chips are at the center of these devices. Further, several new-age technologies, like 5G, Internet of Things (IoT), and artificial intelligence (AI), are likely to drive the demand for chips in the years to come.
- **Strategic requirement:** Semiconductor manufacturing also has strategic advantages, as countries don't want to depend on their imports for essential infrastructure like defence and power.
- **Reducing import bill:** As of now, India is dependent on imports to meet the demand for chips. India consumed around \$21 billion worth of semiconductors in 2019, according to India Electronics and Semiconductor Association (IESA).
- **Fostering innovation:** production and exports of electronic goods at large scale will expose the Indian industry to foreign competition and ideas, which will help in improving its capabilities to innovate for the future.

Challenges faced by India in manufacturing semiconductor

- **Complex manufacturing:** Chip making is a highly complex process, which is why only a few countries have the expertise and skills required to gain a leadership position for this segment.
 - India has done well in design and verification for the semiconductor industry, with most of the global semiconductor companies having an R&D footprint in India, but most of our chips, memory and display are imported into the country.
- **Massive investment requirement:** Setting up a semiconductor unit demands a massive investment of around INR50,000 to INR75,000 crore over two-to-three years. This kind of investment is challenging even for big players.
- **Lack of skilled workforce:** A key requirement for semiconductor firms is the availability of a qualified workforce, and it is here that the India is found lacking.
- **Requirement of very specific raw materials:** Apart from Silicon, numerous types of chemicals & gases are involved in semiconductor fabrication that are not till now available in India and has to be imported.
- **Gaps in supportive infrastructure:** chip manufacturing units require a massive quantity of water and an uninterrupted power supply, which can be a problem in India.
- **Global Competition:** It is also difficult to compete with neighbouring countries which, due to better cost-efficiency and first mover advantage, have become the favoured destinations for global chip manufacturers.
- **Lack of intent:** A case in point is Intel's plant in 2007. A delay in coming out with semiconductor policy pushed the chip giant Intel to opt for Vietnam over India.

Initiatives taken

- **100 per cent Foreign Direct Investment (FDI) allowed** under the automatic route in Electronics Systems Design & Manufacturing sector.
- **National Policy on Electronics launched in 2012** to attract global and domestic companies to invest towards the growing **Electronics System Design & Manufacturing (ESDM)** sector in India
- **Union Budget 2017-18 increased the allocation for incentive schemes** like the **Modified Special Incentive Package Scheme (M-SIPS)** and the **Electronic Development Fund (EDF)** for providing a boost to the semiconductor as well as the electronics manufacturing industry.
- **Electronic Manufacturing Clusters Scheme** which provides 50% of the cost for development of infrastructure and common facilities in Greenfield clusters and 75% of the cost for Brownfield clusters
- Union Cabinet has reconstituted an **empowered committee on setting up semiconductor wafer fabrication manufacturing** facilities in the country.
- According to IESA, ESDM industry will benefit from the government's "Make in India" campaign and is **projected to see investment proposals worth Rs 10,000 crore (US\$ 1.5 billion)** over the next two years.

Way forward

- **Supporting Infrastructure:** A world class, sustainable infrastructure needs to be provided, with swift transportation, large quantity of pure water, uninterrupted electricity, communication, pollutant free environment etc.

- **Start with assembly, testing, marking, and packaging (ATMP):** ATMP companies generate more employment and require less investment than full-fledged fabrication plants (fabs).
- **Stable and long-term policy:** The policy (that includes all kinds of subsidies) taken up now must be valid and stable for at least 10 to 15 years. It must be supported with a solid long term plan and financial backing.
- **Industry and academia collaboration:** With a greater emphasis on research and innovation in India's higher education landscape through the newly unveiled National Education Policy, there is now the possibility of a better synergy between industry and academia in designing curriculum to meet the needs of semiconductor companies in India.

3.13. ONE NATION ONE STANDARD

Why in News?

Recently, Research Design and Standards Organisation (RDSO) of Indian Railways has become the **first Institution to be declared Standard Developing Organization (SDO)** under "One Nation One Standard" mission of BIS (Bureau of Indian Standards).

More on News

- Partnership will help RDSO, the sole R&D wing of the railway ministry, **to realign its standard formulation procedures as per the code of good practices mentioned under the WTO-Technical Barriers to Trade (WTO-TBT).**
- RDSO took the initiative to seek recognition as a SDO **under the BIS SDO Recognition Scheme.**
 - Under the scheme, BIS envisages the recognition of the other SDOs **for attaining the vision of "One Nation One Standard"**.

About One Nation, One Standard (ONOS)

- Aim is to synergize standards adopted by various SDOs in the country. The idea is **to develop one template of standard for one given product instead of having multiple agencies set it.**
- Currently, **BIS is the only national body that frames standards.** But different Institutions and PSUs also develop standards in their specific domains.
 - For example, the Food Safety and Standards Authority (FSSAI) set standards on food, while Automobile Research Organisation of India makes standards for the automobile sector.

Benefits of ONOS

- **International recognition:** Integration of multiple standard formulating bodies will bring uniformity in the quality of goods & services produced in the country and will boost the 'Brand India' image.
- **Access to global Market:** It will allow recognition on International Standards Making Bodies and integration with Global Supply Chain and will help in larger participation of Industry in these supply chains.

About WTO-Technical Barriers to Trade (WTO-TBT)

- **India is a signatory to WTO-TBT Agreement** under which it is to be ensured that the Central Government, State Government and non-Governmental Standardisation Bodies operating within India as well as regional standardisation bodies within India accept and comply to the Code of Good Practice for the Preparation, Adoption and Application of Standards provided in the Annex 3 of the WTO-TBT Agreement.

What is product standardization?

- It refers to the **process of maintaining uniformity and consistency** among the different iterations of a particular good or service that is available in different markets.
- It ensures that **goods or services produced in a specific industry come with consistent quality** and are equivalent to other comparable products or services in the same industry.
- Standardization helps in **ensuring the safety, interoperability, and compatibility of goods** produced.
- It also **facilitates trade and commerce**, makes processes more efficient, conserve resources and **simplify comparison of goods and services.**

Related News

Mandatory Hallmarking of Gold Jewellery

- **It will come into force from June 16** in a phased manner and **jewellers will be allowed to sell only 14, 18 and 22 carats of gold jewellery.**
 - Government has exempted mandatory hallmarking gold on watches, fountain pens and special types of jewellery like Kundan, Polki and Jadau.
- Gold hallmarking is **a purity certification and has been voluntary in nature** so far.
 - Bureau of India Standards has been running a hallmarking scheme for gold jewellery since 2000. **Around 40% of gold jewellery is being hallmarked currently.**
- **Benefits of hallmarking:** will enhance the credibility of jewellery, protect the public against lower caratage (purity of gold) etc.

- It will also **ensure market relevance for the Indian standards.**
- **Benefit to the consumer:** It will help in increasing competitiveness amongst Industry / Vendors, Reduction in Cost, Quantum improvement in Quality of Product & Services for Indian consumers.
- **Product innovation:** Availability of a basic template to work with will allow smooth induction of evolving & emerging technologies and will also reduce dependence on imports by providing thrust to “Make-in-India”.
- **Promotion to domestic standards:** It will help in having maximum industrial products under Indian Standards thereby removing the need to go abroad to get quality certification.
- **Access to Finance:** Banks are willing to advance loans since the prices of standardised commodities can be easily established.

Issues in standardization in India

- **Lack of regulations:** In sectors like machinery safety and chemicals, India is in the process of developing regulations. Therefore, imports and even domestic manufacturers have a free run in the Indian market.
- **Slow pace of adoption of international standards:** for example, the adoption of Hazard analysis and critical control points (HACCP) system in the food industry is resisted due to the unorganised nature of industry.
- **Poor testing facilities:** The testing facilities are quite inadequate and manufacturers face problems in getting the products tested.
- **Misuse of Standards:** Many producers use standards in an unauthorized manner. There is lack of feeling of responsibility and national character among our producers and it is a big hindrance in the development of standardization.
- **Poor awareness:** The general awareness about standards and grades is very low among masses, especially in rural areas.

Initiatives taken for standardisation in India

- **Indian National Strategy for Standardization:** It considers the current state of development across sectors, the existing quality infrastructure and the policy directions in relation to domestic economic developments and for trade in goods and services.
- **Formulation of Indian Standards is one of the core activities of BIS.** The activity is done through 17 Division Councils representing diverse areas of economy and technology such as Civil engineering, Electrotechnical, chemical, services etc.
- **Pahchan Initiative:** To organize and standardize the Indian Handicrafts, Government has registered approximately 22.85 lakhs artisans under Pahchan initiative.
- **Quality Control Orders (QCOs):** For ensuring availability of quality products to consumers, QCOs are issued by various Ministries/ Departments.

Way forward

- **Convergence of all standards development activities in India** by enhancing capability of SDOs for dynamic and faster development of standards, encouraging setting up of new SDOs in emerging technology areas etc.
 - BIS SDO recognition scheme is a right step in this direction.
- **Setting up a dynamic mechanism for new standards identification, development** and their revision by creating forums and processes to articulate and prioritize needs for standards development in different sectors.
- **Inclusive participation of all stakeholders** in standards development including States and MSMEs.
- **Harmonizing Indian standards with international standards** for reducing technical barriers to trade and improving market access for Indian products and services.
- **Identify sectors where India could pioneer standardization work** to not only unleash their commercial potential but also enhance India’s contribution to global standardization efforts.
- **Participation in international standards setting projects** to enable voicing, consideration and possible inclusion of national priorities and concerns.

Some standards applied in India

Mark	Certifying Agency	Description
ISI mark	BIS	It is mandatory for a number of products, especially electronic goods. But in cases of other manufactured products, it is voluntary.
BIS Hallmark	BIS	It verifies that the jewellery conforms to the standards which are set by BIS.
Fruit Products Order (FPO) mark	Ministry of Food Processing Industries	It is a certification mark mandatory on all processed fruit products sold in India following the Food Safety and Standards Act of 2006.
Indian Organic certification	Agricultural and Processed Food Products Export Development Authority (APEDA).	It is a certification mark for organically farmed food products manufactured in India.
Agricultural Marketing (AGMARK)	Directorate of Marketing and Inspection	It is legally enforced in India by the Agricultural Produce (Grading and Marking) Act of 1937 (and amended in 1986).

3.14. CONSUMER PROTECTION (E-COMMERCE) RULES, 2020

Why in News?

Recently, Department of Consumer Affairs released a draft of proposed amendments to the Consumer Protection (E-commerce) Rules, 2020.

More on News

- Earlier, Government had notified the Consumer Protection (E-Commerce) Rules, 2020 with effect from 23 July 2020.
- These Rules were framed under the Consumer Protection Act, 2019 and are intended to complement the said Act by regulating all e-Commerce activities and transactions.

Key provisions in draft amendments

Need for the rules

Better Regulation of e-commerce industry

Which is estimated to rise to nearly \$200 bn in size by 2026, due to COVID-19 and increasing digitization in trade of goods and services.

Protecting First Generation internet users

Which may not have adequate digital-education, which makes them more vulnerable to internet based frauds.

Customer Protection

- Development of e-Commerce has rendered the consumer vulnerable to new forms of unfair trade and unethical business practices.
- There is also a need to tackle challenges of violation of personal data and information secrecy of consumers.

Grievance Redressal

Rules address various lacunas in the present grievance redressal mechanism on e-Commerce trade such as those relating to fake non-delivery/delay delivery, non-refund the items in case found not upto the mark, fake goods etc.

Protecting interest of small-scale brick-and-mortar stores

So that the dominant e-marketplace entity does not hurt their interest and a level-playing field is available to them.

Provision	Proposed Amendment	Implications
Definition of e-commerce entity	<ul style="list-style-type: none"> • To be expanded to include not just the entity operating the e-commerce platform but also "any entity engaged by such person for the purpose of fulfilment of orders placed by a user on its platform and any 'related party' as defined under Section 2(76) of the Companies Act, 2013". • It does not include a seller offering his goods or services for sale on a marketplace e-commerce entity 	<ul style="list-style-type: none"> • Companies may ensure that entities such as those rendering last mile delivery services comply with the relevant rules and regulations e-commerce entities themselves are mandated to follow.

Registration of e-commerce entity	<ul style="list-style-type: none"> Every e-commerce entity which intends to operate in India shall register itself with the Department for Promotion of Industry and Internal Trade (DPIIT). 	<ul style="list-style-type: none"> Ensures transparency of e-commerce entities and their system of working, as well as restricts them to display or promote any misleading advertisement to the users.
Duties of e-commerce entity	<ul style="list-style-type: none"> Require the e-commerce entities to mention the names and details of the importers, identify country of origin, provide a filter mechanism on their website and display notification regarding the origin of goods at the pre-purchase stage, at the time of goods being viewed for purchase. 	<ul style="list-style-type: none"> Aimed at ensuring parity between imported and domestic goods and reiterates the no-discrimination rule. To offer additional mechanisms to help consumers make an informed decision when buying imported products. Instructive to consumers when making a decision based on country of origin of the products and exercising an informed choice.
Grievance Redressal	<ul style="list-style-type: none"> Every e-commerce entity shall appoint <ul style="list-style-type: none"> Chief Compliance Officer who shall be responsible for ensuring compliance Nodal contact person for 24x7 coordination with law enforcement agencies. Officers to ensure compliance to their orders and Resident Grievance Officer for redressing grievances of the consumers. 	<ul style="list-style-type: none"> To institute sound consumer grievance redressal mechanisms and inform the consumers of the same. To ensure compliance of the rules.
Check on Mis-selling	<ul style="list-style-type: none"> "mis-selling" means an e-commerce entity selling goods or services by deliberate misrepresentation of information by such entity about such goods or services as suitable for the user who is purchasing it. 	<ul style="list-style-type: none"> Intends to prevent misrepresentation of information of goods and services by e-commerce entities that hold a dominant position to abuse its position.
Regulation of Cross-selling	<ul style="list-style-type: none"> Define 'cross-selling' as sale of related, adjacent, and complementary products/services with an intent to maximize the revenue of the e-commerce entity. 	<ul style="list-style-type: none"> Clause intends to ensure transparency, thereby, preventing any practices that may be construed as misleading and manipulative. This is to ensure a fair opportunity to domestic products.
Regulation of Flash sale	<ul style="list-style-type: none"> Defined as a sale organized by an e-commerce entity at significantly reduced prices, high discounts or any other such promotions or attractive offers for a predetermined period of time on selective goods and services or otherwise with an intent to draw large number of consumers. 	<ul style="list-style-type: none"> To prevent instant, unannounced sales that maybe manipulated to give advantage or preferential treatment to particular sellers. To prevent cheating & unfair trade practices on e-commerce platforms and bring transparency for benefit of consumers.
Complete prohibition on related parties selling on platform	<ul style="list-style-type: none"> Prohibit related parties and associated enterprises of the e-commerce entity from enlisting as sellers on the platform. Prohibit use of information collected on the platform for giving an unfair advantage to the related parties and associated enterprises. 	<ul style="list-style-type: none"> Aimed at completely separating the e-commerce entity (as a pure marketplace) from the sellers and eliminate the very concept of 'related sellers'.

Issues with the proposed amendment

- Increased burden on firms:** Draft rules **would also increase the compliance burden of e-commerce firms**. Further, various proposals would also require either a **change in their existing business model** or for them to make product changes.
 - For example: The proposed rules make e-commerce marketplaces responsible for the sellers' activities.
- Impact on ease of doing business:** Consumer organization and policy think-tank CUTS International said that these rules could lead to policy uncertainty, leading to an adverse impact on the ecosystem and the investment climate.
- Challenges for MSMEs:** Some states are apprehensive that **there could be a negative impact on jobs and market access for MSMEs** created by various digital platforms in recent years.
- Ambiguity in definitions:** Ambiguous definitions (of what constitutes a flash sale or mis-selling) may lead to an **inconsistent application of the rules and open the door to discretionary action**.

- **Disadvantage for consumers:** For the consumer, it could mean **no flash sales or online platforms offering substantial discounts or promotions** for a very short period of time.

Way forward

- **Data protection:** **User's personal data may be categorized** as per their level of sensitivity and appropriate protection level may be assigned for each level.
 - Further, all major e-marketplace entities should establish their data centre in India.
- **Clear definitions:** There should be a **more clear-cut definition of what constitute Unfair Trade Practice** (including flash sale, mis-selling) and practical legal remedy to tackle such circumventing practices.
- **Corrective mechanism to discourage deceptive tactics:** including manipulation of algorithms, fake product reviews & ratings must be created so that the consumer interest is not harmed in any way.
- **Appropriate Grievance redressal:** Rules should **explicitly mention different levels at which a customer can approach** eventually, if his/her grievance is unresolved.

Related news


- Recently, Department for Promotion of Industry and Internal Trade (DPIIT) **appointed an advisory committee for its Open Network for Digital Commerce (ONDC) project.**
- Through ONDC, **DPIIT intends to make e-commerce processes** (including onboarding of sellers, vendor discovery, price discovery and product cataloguing) **open-sourced** so that they can be accessed by any and all online retailers.
 - Making a software or a process open-source means that the **code or the steps of that process is made available freely for others to use, redistribute and modify it.**
- ONDC is expected to **digitise the entire value chain, standardise operations, promote inclusion of suppliers,** derive efficiency in logistics and enhance value for consumers.
- If ONDC gets implemented, it would mean that **all e-commerce companies will have to operate using the same processes.**
 - This could be problematic for larger e-commerce companies, which **have proprietary processes and technology deployed for these segments of operations.**
- The task of implementing DPIIT's ONDC project has been **assigned to the Quality Council of India (QCI).**



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4. SECURITY

4.1. INTEGRATED THEATRE COMMANDS

Why in news?

Recently, the Chief of Defence Staff (CDS) chaired a meeting with the Vice Chiefs of the three Services among others, in the backdrop of concerns about the proposed model of the Integrated Theatre Commands.

Current system of military commands in India

- Since 1947, the three services have been functioning separately and there has been proven cooperation between them but no integration per se.
- The **Indian Army, Navy and Air Force each has multiple commands that are vertically split** in terms of their command structure.
 - There are **17 military commands of tri-services**, seven of the Army and the Air Force each and three of the Navy, leading to **wastage and duplication of resources**.
- Apart from these, there are **two unified commands** i.e. Andaman and Nicobar Command (ANC) and the **Special Forces Command (SFC) for nuclear assets**.
- There are **four tri-service institutions** i.e. Defense Intelligence Agency, Defense Space Agency, Cyber Agency, and Armed Forces Special Operations Divisions, established in 2019.

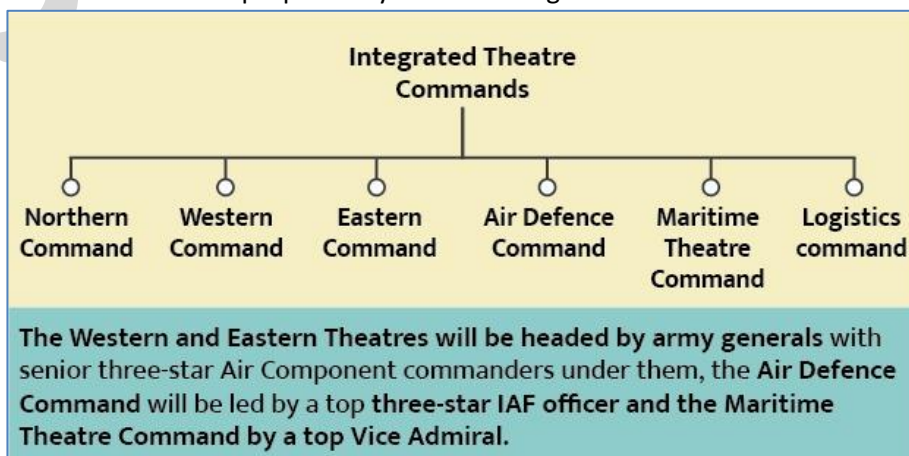
DIFFUSED STRENGTH

Seventeen existing Commands of the Indian Armed Forces.

About Integrated Theatre Commands

- An integrated theatre command envisages a **unified command of the three Services, under a single commander**, for geographical theatres that are of security concern.
 - The commander of such a force will be able to bring to bear all resources at his disposal — from the IAF, the Army and the Navy — with seamless efficacy.
- The idea of Integrated Theatre commands has been proposed by both the Kargil review committee as well as D B Shekatkar committee.

- Shekatkar committee in 2016 recommended creating 3 integrated theatre commands:
 - Northern command for the China border,
 - Western command for the Pakistan border and
 - Southern command for the maritime borders.



- The current theaterisation model under consideration seeks to set up **at least six new integrated commands**.
- The theaterisation model will have the **inbuilt flexibility to fall back on current command and control structures** to eliminate the possibility of the country getting caught off guard by its adversaries during the crucial transition phase.

- India's **Chief of Defence Staff has been given the mandate to steer the theaterisation drive**. It is expected that jointness among three services would be rolled out by 2023.

Need for theatre commands

- **Changing nature of warfare:** The **changing nature of warfare demands cooperation and synergy among the forces** to achieve enhanced combat preparedness and interoperability between forces during peace.
 - Moreover, these strategic commands would cater to modern and hybrid warfare, accommodating the cyber and space domains as well.
- **Improved Resource efficiency:** The new model would reduce cost by cutting the duplication through optimum allocation and utilization of sources.
 - With the strategic deployment of troops under one command, a reduction in the deployment of troops would also reduce the amount of defense budget allocated for salaries, allowances, and pensions etc.
 - Joint training and synchronization would result in enhanced command and communication within forces.
 - Moreover, the integration of medical services within three forces **would elevate the medical arm of the unified command**.
- **Better procurement:** The ability to procure military systems and equipment in bulk for the three services together would also ensure cost reduction and strengthened leverage to the defense industry in India.
- **Quick decision making:** The theatre commands can ensure quick decision making in case of joint operations. Also the integrated theatre commander will not be answerable to individual Services
- **Reforms in the military capabilities of neighbouring countries:** A major factor pushing for the heightened need for Theatre Commands has been the broad military reforms within the Chinese military.
 - The possibility of an active Line of Actual Control (LAC), alongside of an already active Line of Control (LOC) has heightened in many ways the call for serious reforms in the Indian military.

Related information

Integrated Theatre Command in other countries

- More than **32 countries in the world already have** some form of theatre or joint command in place for better integration among the branches of the military. Notable among such countries are the US and China. According to a report, **the US was the first to come up with a theatre command system** and "presently possesses six geographical and four functional commands".
- **Russia** is said to have commenced with the restructuring of its armed forces in 2008 and **"has now created four theatre commands"**.

Challenges in implementing Integrated Theatre Commands



- **Geographical stretch of India:** Various experts have pointed that India is not geographically large enough to be divided into different theatres, as resources from one theatre can easily be moved to another theatre.
 - Experts argue that the current model is sufficient to protect our territory and lanes of communication and is feasible in transportation.
- **Possibility of inter-service friction:** Some experts argue that this model would affect the independent service identity of forces and could lead to inter-service friction.
 - While the army and navy are in favour of theatre commands, the IAF has concerns about the model over the division of its air assets, dilution of powers of chiefs etc.
- **Thinning of already stretched resources:** According to reports, with fewer perceived resources, the **Indian Air Force has concerns about its assets getting spread out thinly over the different theatre commands**.
- **Lack of expertise of a theatre commander:** Limited domain knowledge and expertise of a theatre commander could affect the functioning of command.
- **Operational hurdles:** Integrating the three services under the theatre command system faces hurdles like **who reports to whom** and how does the chain of command flow. These involve issues of operational command and control over assets.
- **Financial constraints:** Budgetary allocations and the distribution of funds have also been pointed out as factors that need to be clearly worked out to enable the setting up of a seamless theatre command system.
- **Reduced role of Chief of Staff:** Since the role of Chief of Staff of three forces would be limited to only the deployment of resources to the commander, the utilization of resources would be left on the behest of the theatre commander only. This could result in diminishing the role of Chief of Staff.

Way ahead

- **Eliminating differences:** The government has formed an eight-member panel under the CDS to fine-tune the plans and bring all stakeholders on board.
- **Concurrence of the Ministry of Finance:** This is important as setting up of theatres and integration of various structures would have financial ramifications as well.
- **Streamlining decision making:** There is a need to decide who the theatre commanders would report to. For e.g. in the US the commanders report to the political leadership.
- **Other reforms through target intervention:** Steps should be taken to enable systems such as a robust and vibrant defence-industrial manufacturing complex, recognition of the changing nature of warfare, greater reliance on technological capabilities etc.

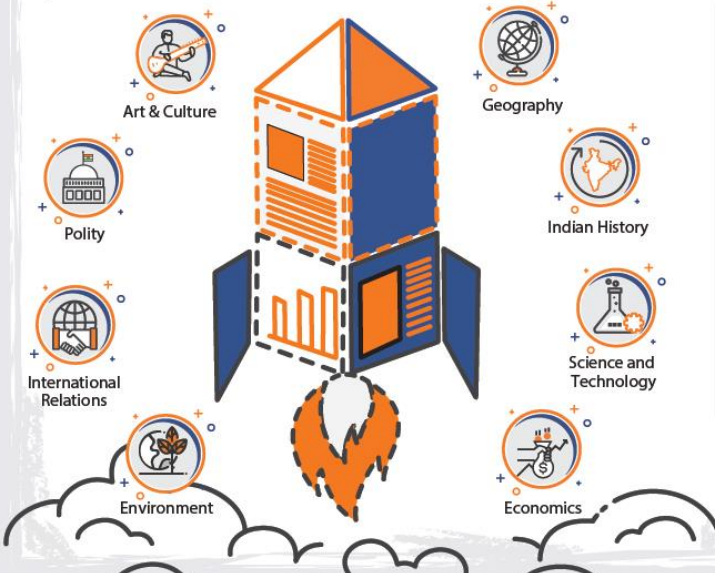
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5. ENVIRONMENT

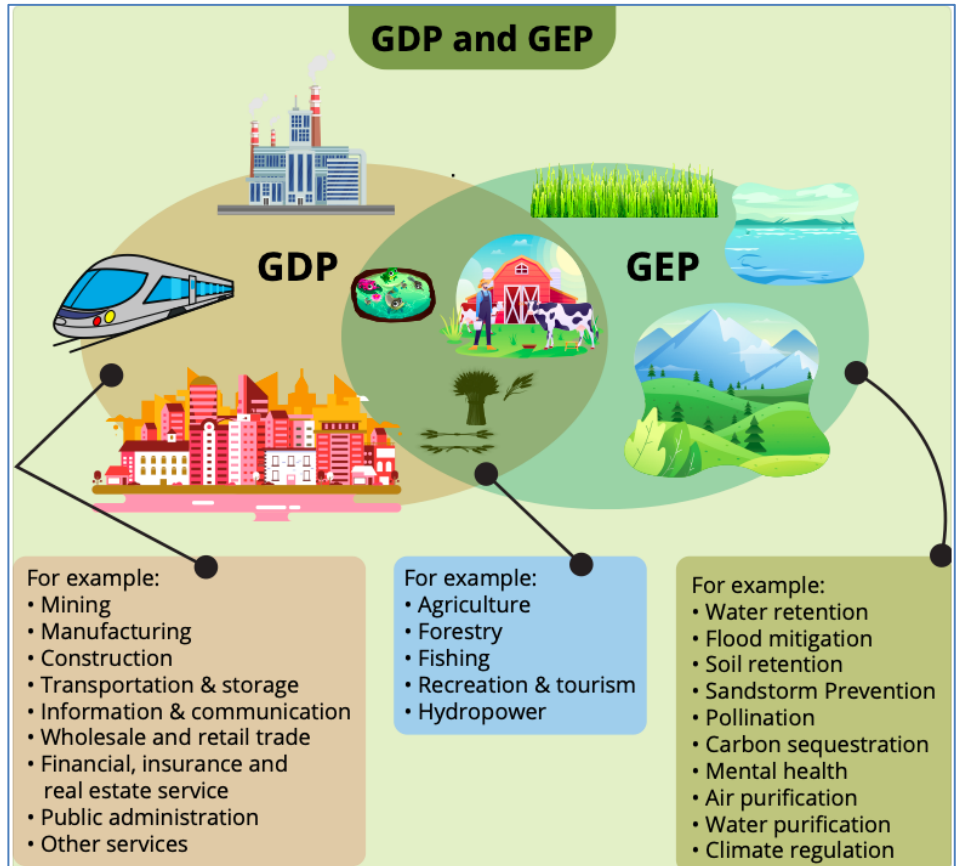
5.1. GROSS ENVIRONMENT PRODUCT

Why in news?

On World Environment Day (June 5), **Uttarakhand became the first state in India to take into account Gross Environment Product (GEP)** while calculating its Gross Domestic Product (GDP).

More in news

- **Four critical natural resources- Air, Water, Forest and Soil- will be assigned monetary values.** The **quality and quantity** of these natural resources would **determine the GEP of Uttarakhand.**
 - Environmentalists estimate that **Uttarakhand through its biodiversity gives services to the tune of Rs 95,112 crore per year** to the nation.



- Discussions on having a GEP in the state came after the Kedarnath disaster (2013) and were further accentuated by the acute water shortage in the state during summers.

What is GEP?

- It is the **total value of final ecosystem services supplied to human well-being in a region annually** and can be **measured in terms of biophysical value and monetary value.**
- It indicates the **overall health of the environment** as GEP measures prime indicators such as forest cover, soil erosion, air quality and dissolved oxygen in river water.
- **Unlike Green GDP** which is obtained after deducting the damage to the environment from the total production of the state, **GEP will assess the improvement in the environment components in a year.** Further it will tell **how much work the state has done in reducing the loss of the ecosystem** in environmental protection and resource use.

Need for GEP

- **Economic growth alone cannot represent true economic development:** and may lower human well-being if it is accompanied by growing inequity and environmental degradation.
 - Resource depletion during industrial growth impacts rural growth disproportionately as the rural economy depends on such natural resources only. GEP thus **forms a balanced development approach where ecology is given equal space.**
 - Accounting GEP into GDP will give a **true measure of the nation's growth towards sustainable development.**
- **Shortcomings of traditional systems:** The Traditional System of National Accounts (SNA) like **GDP/GNP neither accounts for the value of natural resources and ecosystem services nor the value of environmental/resource degradation** taking place during the developmental process.
 - **Ecosystem Services** are **“benefits people derive from ecosystems”** like **provisioning services** (food, wood etc.) and **regulating services** (water purification, carbon sequestration etc.)

- **Framing adequate policies:** GEP helps in **understanding the impact of anthropological pressure on our ecosystem** and natural resources. This will enable us to make policies that will balance ecology and economy.

Issues in capturing GEP into GDP

- **Knowledge gap:** There is **lack of data and an existent challenge to assign a monetary value** to ecosystem services. **Assigning monetary value to ecosystem services is possible only to a limited extent.**
 - For example, the **pipal tree** in India is revered as a holy tree and religious ceremonies are conducted under its shade. Here **economic valuation of the tree cannot encompass the complexity and the ecological, socio-cultural and institutional heterogeneity** of a particular area.
- **Policy gap:** There is **lack of recognition of ecosystem services** in economic decision-making, development planning and resource allocation. Value of ecosystem services is either ignored or inadequately understood.
- **Institutional failure:** **Insufficient ‘Compensation for ecosystem services’ (CES)** provided by the government to stakeholders.
 - CES involves **recognising and compensating people who manage the land that contribute to the long-term security of ecosystem functions.** It is a new financial resource for funding conservation measures to ensure a vital ecosystem. Prominent CES mechanism is **‘Payments for Ecosystem Services’ (PES).**

Way forward

- **Incorporate environmental assets accounts:** This approach **collects data on various types of natural capitals** like forests, groundwater etc. and **convert them into monetary terms.**
- **Biophysical and spatio-temporal dynamics** of the region needs to be kept in mind while quantifying and valuing ecosystem services
- **Develop frameworks to incorporate impacts of climate change** on ecosystem services.
- **Develop alternative or complementary non-market methods to evaluate ecosystem services** with focus on intangible assets, skills and knowledge and cultural values.
- Factors like **social disparities** should be accounted for in evaluating ecosystem services.

Conclusion

GEP can become an **environmental indicator that measures the value of natural resources along with improvements done in the ecosystem to truly assess national wellbeing.** If Uttarakhand successfully implements GEP, pressure will be on other states to do the same.

Other global standards /initiatives

- **System of Environmental and Economic Accounts (SEEA):** guidebook developed by the United Nations to provide **standards for incorporating natural capital and environmental quality into national accounting systems.**
- **China** (since 2004) **has been undertaking studies to estimate the cost of various types of environmental damage which offsets its economic growth.** China’s investment in pollution control and renewable energy has been growing rapidly since then.
- The **Happy Planet Index (HPI)** created by the **British New Economics Foundation (NEF)** **measures national welfare in the context of environmental sustainability.**
- **Bhutan’s Gross National Happiness (GNH)** has **environmental preservation as one of the four policy objectives.**
- **Sweden** (since 2003) **has brought in various environmental indicators** (like air emissions , waste etc.) as part of the government policy of achieving sustainable development

5.2. ETHANOL BLENDING IN INDIA

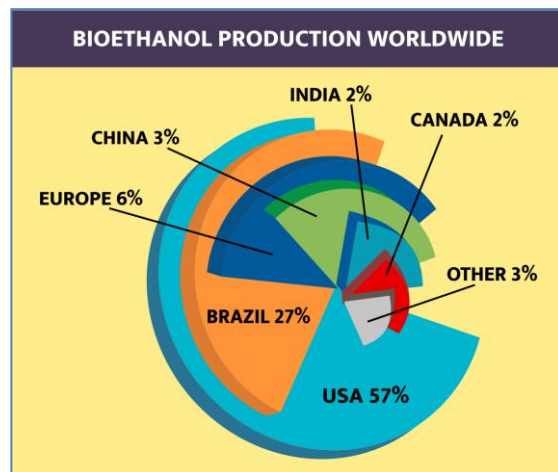
Why in News?

Recently, the central government has **advanced the target of 20% ethanol blending** in petrol (also called as E20), **by five years to 2025, from 2030.**

More in News

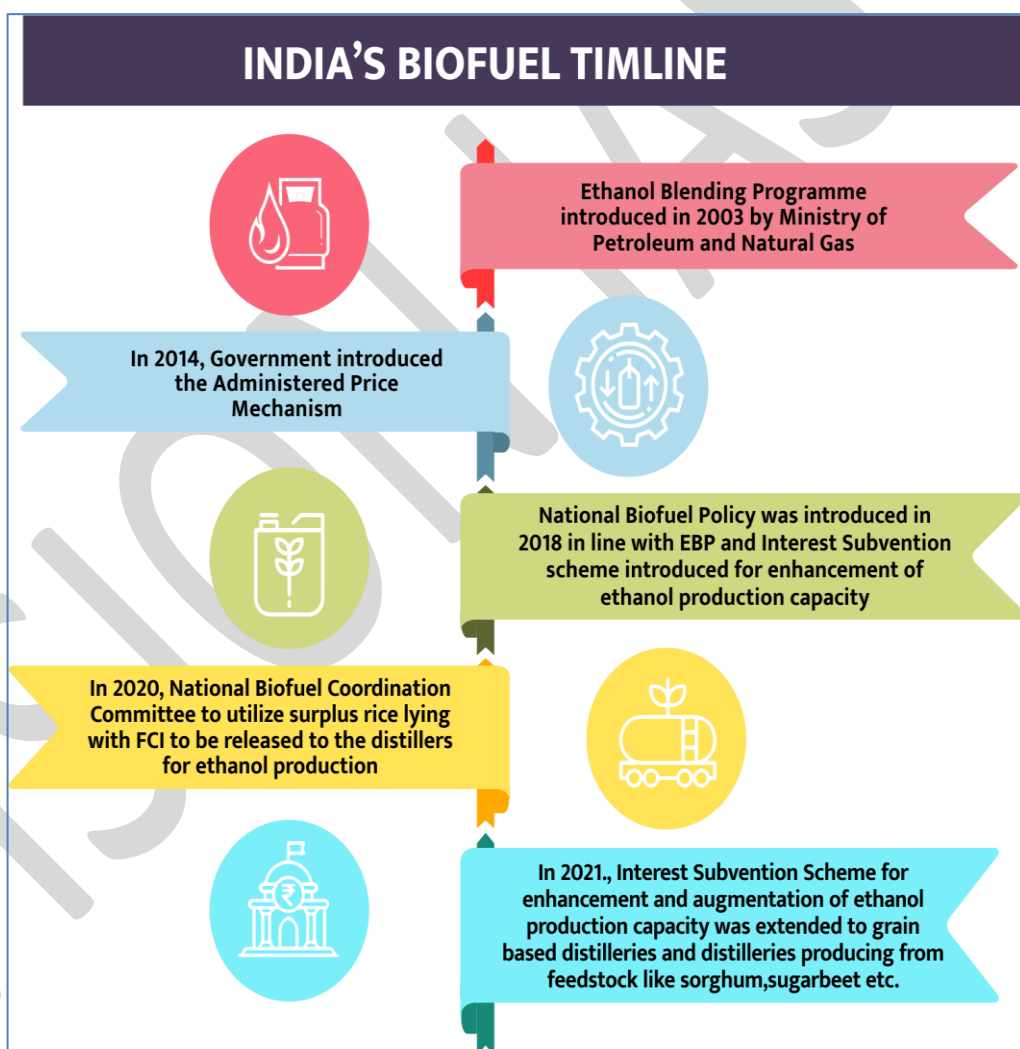
- The Government has also released an **expert committee report** on the **‘Roadmap for Ethanol Blending in India by 2025’.**
 - It proposes a **gradual rollout of ethanol-blended fuel to achieve E10 fuel supply by April 2022 and phased rollout of E20 from April 2023 to April 2025.**

- Earlier, **National Biofuel Policy 2018** had envisaged an **indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel by 2030.**
- In 2020, **India had set a target of 10% ethanol-blending in petrol by 2022, 20% ethanol-blending in petrol by 2030 and 10% ethanol-blending in diesel by 2030.**
- It also recommends **introducing vehicles that are compatible by rolling out of E20 material-compliant and E10 engine-tuned vehicles from April 2023 and production of E20-tuned engine vehicles from April 2025.**
 - These efforts will **facilitate setting up of additional ethanol distillation capacities** and will provide timelines for **making blended fuel available across the country.**
 - It will also **help increase consumption of ethanol** in the ethanol producing states and the adjoining regions before the year 2025.



What is ethanol blending?

- An ethanol blend is defined as a **blended motor fuel containing ethyl alcohol** that is at least 99% pure, derived from agricultural products, and blended **exclusively with gasoline.**
 - Since it is plant-based, it is **considered to be a renewable fuel.**
- Government has allowed ethanol production/procurement from **sugarcane-based raw materials** viz. C & B heavy molasses, sugarcane juice / sugar / sugar syrup, **surplus rice with Food Corporation of India (FCI) and Maize.**



- The Oil Marketing Companies are to procure ethanol from domestic sources and blends ethanol at its terminals.
 - Government has been notifying administered price of ethanol since 2014.
- **Department of Food and Public Distribution (DFPD)** is the nodal department for promotion of fuel grade ethanol producing distilleries in the country.

Significance of ethanol blending

- **Reduce Pollution:** By blending ethanol with petrol, **fuel mixture is oxygenated so it burns more completely and reduces polluting emissions.** It also offers higher octane number in comparison to petrol.

- Using bioethanol in older engines can **help reduce the amount of carbon monoxide produced by the vehicle** thus improving air quality.
- **Carbon Neutral:** Combustion of ethanol made from biomass (such as corn and sugarcane) is considered atmospheric carbon neutral because as the biomass grows, it absorbs CO₂, which may offset the CO₂ produced when the ethanol is burned.
- **Economic Benefits:** It will **help lower India's energy import dependency** and thus, **lowering the crude oil import bill**. India's net import cost stands at \$551 billion in 2020-21. It is estimated that the E20 program can **save the country \$4 billion i.e Rs 30,000 crore per annum**.
- **Farmer's Income:** About 10 billion litres of ethanol will be required each year to meet the 20% ethanol-blended fuel standard by 2025. Hence it is **benefitting the sugarcane farmers**.
 - Last year, oil companies procured ethanol worth about Rs 21,000 crore.
- **International commitment:** It helps India to fulfil its pledge to reduce its carbon footprint from the 2005 levels by 33-35% by 2030, as part of its commitments to the United Nations Framework Convention on Climate Change adopted under the Paris Agreement.

Recent Initiatives to promote bioethanol

- Under **PM-JIVAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana**, 12 commercial plants and 10 demonstration plants of Second Generation (2G) Bio-Refineries are envisaged to be set up in areas having sufficient availability of biomass so that ethanol is available for blending throughout the country.
- **2G plants utilise surplus biomass and agricultural waste** to produce bioethanol.
- Cabinet Committee on Economic Affairs (CCEA) approved ₹8,460 crore **Modified scheme for extending interest subvention for those setting up standalone ethanol distilleries** using grain, molasses, dual feed, sugar beet, sweet sorghum and cereals as a feedstock.
 - The focus is on **increasing India's ethanol production capacity**.
- Prime Minister has launched a **Pilot Project of E 100 dispensing stations at three locations in Pune**.

Ethanol-based 'flex-fuel' vehicles

- An FFV is a **modified version of vehicles that could run both on gasoline and doped petrol** with different levels of ethanol blends.
 - These are currently being used successfully in Brazil, **giving people the option to switch fuel** (gasoline and ethanol).
- Government **plans to issue guidelines for 'flex-fuel' vehicles (FFV) by October**.
 - The government is also **working on an incentive scheme to promote manufacture and use of flex engines** in vehicles.
- For auto companies, **introduction of FFVs will pose another challenge** that they are already facing with the fast adoption of electric vehicles. If standards on FFVs are made mandatory, **it would require additional investment in production lines and technology transfers to change the character of the vehicles**.

Challenges

- **Vehicle Modifications:** The use of E20 will require new engine specifications and changes to the fuel lines, as well as some plastic and rubber parts due to the fuel's corrosive nature.
 - The engines will need to be recalibrated **to achieve the required power, efficiency and emission level** balance due to the lower energy density of the fuel.
- **Pricing of E20 vehicles:** The **cost of E20 compatible vehicles is expected to be higher** in the range of Rs 3000 to Rs 5000 for four-wheelers and Rs 1000 to Rs 2000 for two-wheelers, above the cost of ordinary vehicles tailored to run on 100% gasoline.
- **Water Footprint:** Sugarcane is a **water intensive crop** and continues to be the most lucrative food crop for ethanol even though it **has highest water consumption per acre**.
 - One litre of ethanol from sugar requires about 2860 litres of water.
- **Ethanol production facilities:** India has an ethanol production capacity of 684 crore litre. **For the targeted 20% blending of ethanol in petrol by 2030, the country will need a 1,000-crore litre capacity**.
- **Pricing:** The **prices of ethanol produced in India are higher in comparison to global players**, since the cost of raw materials like sugarcane and food grains are fixed by the government to support the farming community.
- **Inter-state movement of ethanol:** Restrictions on inter-state movement of ethanol due to non-implementation of the amended provisions of Industries (Development & Regulation) Act, 1951 by all the States. As on date only 14 states have implemented the amended provisions.
- **Availability of ethanol across the country:** Ethanol is not produced or available in some states for blending and about 50% of total pump nozzles in India are supplying only E0.

- Also, blending has not been taken up in **North-East states due to non-availability of feedstock or industries.**
- **Logistics:** Transport of ethanol to different places for blending will **increase the cost of logistics and transport related emissions.**

Way forward

- **Pricing of Ethanol blended fuel:** For better acceptability of higher ethanol blends in the country, **retail price of such fuels should be lower than normal petrol** to compensate for the reduction in calorific value.
- **Diversify Crops:** There is need to explore the feasibility of other grains which can supplement sugar in ethanol production to meet the 2025 targets.
- **Incentives for EBP vehicles:** Globally, vehicles compliant with higher ethanol blends are provided with tax benefits.
- **Technology Upgradation:** Technology for production of ethanol from non-food feedstock should be promoted so as to tap abundantly available resource without causing any tradeoff with the food production system.
- **Ensure timely availability:** OMCs need to set up ethanol distillation facilities and need to provide timelines for making blended fuel available across the country.
 - The blending percentage of ethanol with petrol has gone up from 1.53% in 2013-14 to 8.5% in 2020-21.
- **Government support to enhance production:** Experts point out that many sugar mills which are best placed to produce bioethanol do not have the financial stability to invest in biofuel plants.

5.3. GLACIAL LAKE ATLAS OF GANGA RIVER BASIN

Why in News?

Recently, Ministry of Jal Shakti (MoJS) released an atlas of glacial lakes that are part of the Ganga River basin.

More on News

- Atlas is brought out **under National Hydrology Project (NHP).**
- In the present study, glacial lakes with water spread area ≥ 0.25 ha have been mapped using Resourcesat-2 satellite data.

About Ganga River Basin

- The Ganga River basin **extends over Central Himalayas in India, Nepal, Tibet (China), and Bangladesh.**
- It contains **9 of the 14 highest peaks in the world over 8,000 m** in height, including Mt. Everest.
 - Other peaks over 8,000 m in the basin are **Kanchenjunga, Lhotse, Makalu, Cho Oyu, Dhaulagiri, Manaslu, Annapurna, and Shishapangma.**
- In this atlas, **Ganga River basin has been divided into 11 subbasins** (refer infographic) on the basis of confluence of major rivers contributing into the system viz., Yamuna joining on the right, whereas rivers like Sarda, Ghaghara, Gandak, and Kosi joining on the left.
- Climate over the Ganga River basin is mainly **tropical and subtropical to temperate subhumid on the plains.**
- Ganga River basin carries average annual water potential of about 525 billion Cubic Metre (BCM), of which total utilizable surface water resource in the basin is 250 BCM.

About National Hydrology Project (NHP)

- NHP, under MoJS, aims to **improve the extent, quality and accessibility of water resources information** and to strengthen the capacity of targeted water resources management institutions in India.
- Under NHP, National Remote Sensing Centre (NRSC), **ISRO, is carrying out hydrological studies using satellite data and geo-spatial techniques.**
 - As part of this, detailed glacial lake inventory, prioritization for GLOF risk, and simulation of GLOF for selected lakes are taken up **for entire catchment of Indian Himalayan Rivers** covering Indus, Ganga, and Brahmaputra River basin.

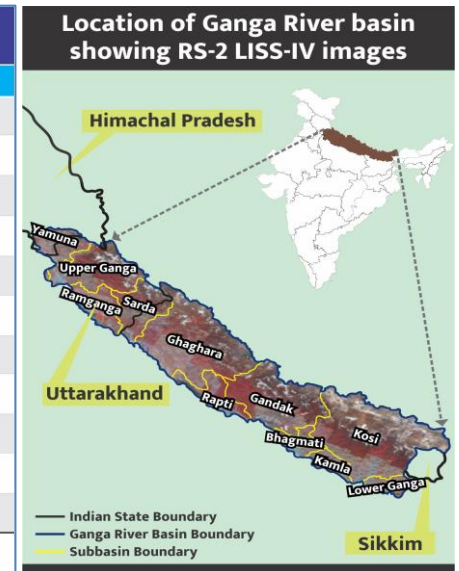
About Glacial Lake

- It is defined as **water mass existing in a sufficient amount and extending with a free surface in, under, beside, and/or in front of a glacier** and originating from glacier activities and/or retreating processes of a glacier.
- As glaciers retreat, the **formation of glacial lakes takes place behind moraine or ice 'dam'.**
- These damming materials are **generally weak and can breach suddenly** due to various triggering factors, leading to catastrophic floods. Such outburst floods are known as GLOF.

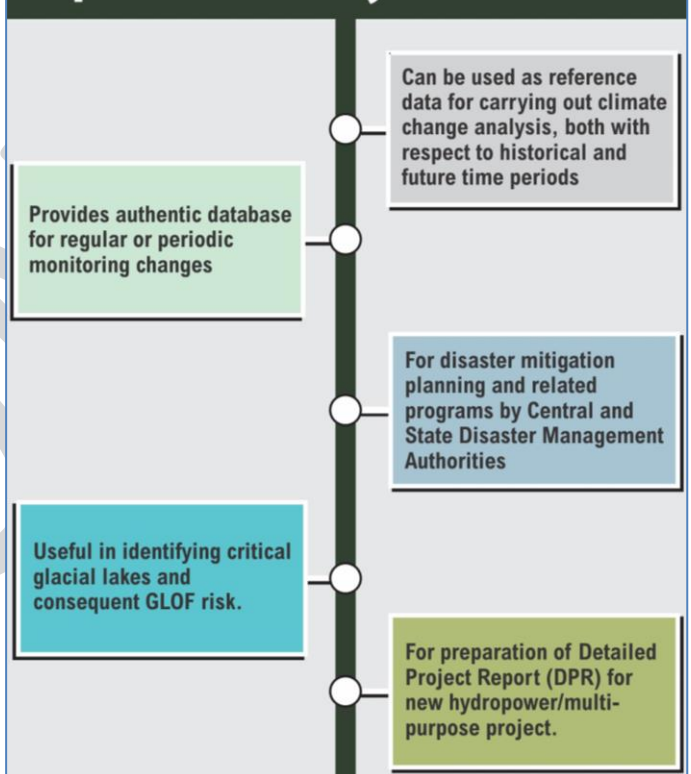
Key Findings of the Atlas

- Based on its process of lake formation, location, and type of damming material, glacial lakes are identified in nine different types, majorly grouped into four categories viz.,
 - Moraine-dammed** (form during periods of glacier retreat from a moraine),
 - Ice-dammed** (when drainage is blocked by a glacier that advances or becomes thicker),
 - Glacier Erosion, and**
 - Other Glacial lakes.**
- A total of **4,707** glacial lakes have been mapped.
 - Lakes with ≥ 5 ha in size are 672 (14.28%) contributing to 76.87% of total lake area in the basin.
 - More than half (i.e., 59.25%) of the lakes are situated in the very high-altitude range of greater than 5,000 m and dominated by Other Moraine Dammed Lake type.
 - Out of 11 subbasins, **only 6 subbasins contain glacial lakes**, which are predominantly distributed in Kosi subbasin (51.77%) followed by Ghaghara subbasin (26.77%).
 - Minimum number of glacial lakes are present in Yamuna subbasin** and then in Sarda subbasin.
 - Glacier Ice-dammed Lake is only one in the entire Ganga River basin and is located in Gandak subbasin.
- Uttarakhand shares 93.50% of lake count**, followed by 6.50% in Himachal Pradesh.
- Each glacial lake has been given a 12 alpha-numeric unique glacial lake ID**, along with several attributes that include hydrological, geometrical, geographical, and topographical characteristics.

Details of subbasins of Ganga River basin			
S. No.	Subbasin	Area (Km) ²	Area (%)
1	Bhagmati	7,635	3.09
2	Gandak	36,465	14.76
3	Ghaghara	53,072	21.48
4	Kamla	6,106	2.47
5	Kosi	59,709	24.16
6	Lower Ganga	6,543	2.65
7	Ramganga	11,455	4.65
8	Rapti	11,423	4.62
9	Sarda	17,326	7.01
10	Upper Ganga	25,675	10.39
11	Yamuna	11,701	4.73
	Total	2,47,110	100.00



Expected utility of the atlas



5.4. ORGANIC FARMING

Why in news?

About 14,491 hectare area in Andaman and Nicobar has been certified as organic under the Large Area Certification (LAC) Scheme of the PGS-India (Participatory Guarantee System) certification programme (the first large contiguous territory to be certified).

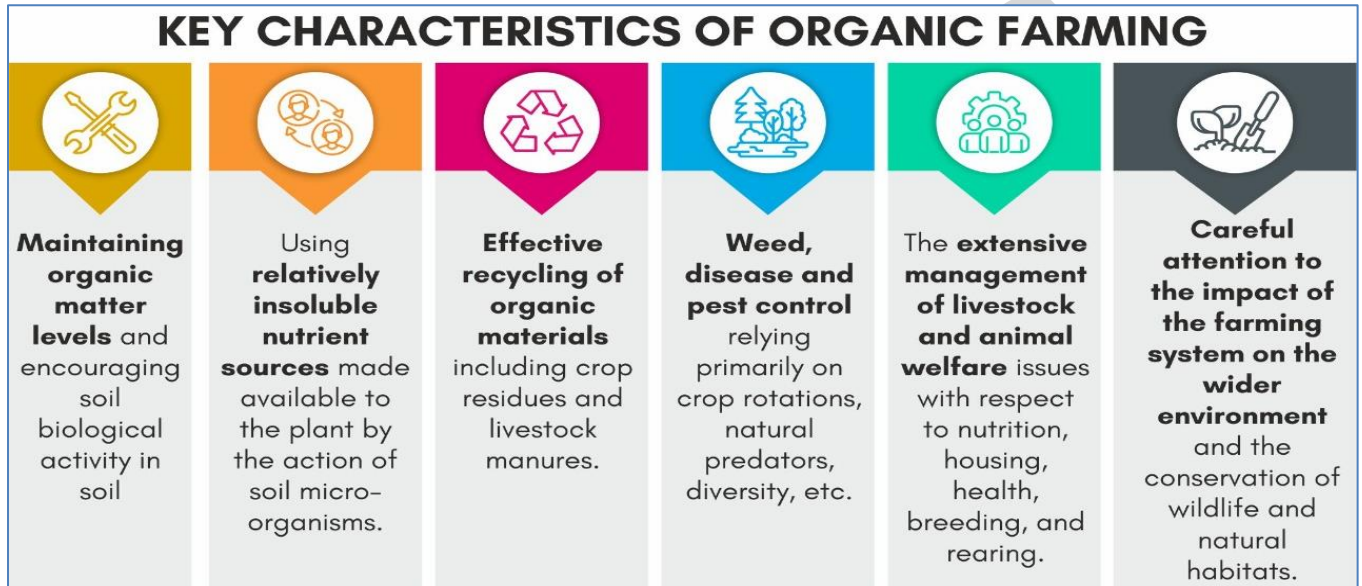
About LAC

- It is a unique quick certification programme to harness the potential areas of Organic farming in India.
- It was launched by the Department of Agriculture and Farmers Welfare under its flagship scheme of **Paramparagat Krishi Vikas Yojana (PKVY)**.
- Under LAC, **each village in the area is considered as one cluster or group** and simple documentations are maintained village-wise.

- All farmers with their farmland and livestock need to adhere to the standard requirements and on being verified get certified en-mass without the need to go under conversion period.
- **Certification is renewed on annual basis** through annual verification by a process of **peer appraisals as per the process of PGS-India**.

About Organic farming

- As per **Food and Agriculture Organisation** “Organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs”.
- Organic products are grown under a system of agriculture without the use of chemical fertilizers and pesticides with an environmentally and socially responsible approach.



Benefits

- **Healthy Foods:** Many studies reveal that organic food is higher in certain key areas such as total antioxidant capacity, total polyphenols, etc which are nutritionally significant.
 - Studies have also shown that dairy products from organically raised animals are healthier than conventionally produced dairy products.
- **Ecological benefits:**
 - **Improvement in Soil Quality:** It sustains healthy soils by maintaining and building a fertile living soil through the application of organic matter inputs like green manures and by implementing low soil disturbance tillage.
 - **Reduced Pollution:** Due to healthier soil and absence of harmful pesticide and fertilizer, organic farming reduces water and air pollutants.
 - **Low Incidence of Pests:** It has been observed that if the soil is healthy, the pest problem is negligible as compared to soil where agrochemicals are used or where there is low organic matter in the soil.
- **Efficient use of resources:**
 - **Improved water management:** Improving water infiltration and retention capacity through high levels of organic matter reduce the amount of water needed for irrigation.
 - **Lower Energy Use:** Many popular crops such as corn require nitrogen rich soil which is a high energy use. Organic farming achieves the nitrogen rich soil, instead, by using composted manure and the use of cover crops.

Status of Organic Farming in India

- India's rank 8th in terms of World's Organic Agricultural land and 1st in terms of total number of producers as per 2020 data.
- It produced around 2.75 million MT (2019-20) of certified organic products which includes all varieties of food products namely Sugarcane, Oil Seeds, Cereals & Millets, Cotton, etc.
- **The export of organic food products rose by 51 per cent** in terms of value to reach \$1,040 million (Rs 7078 crores) in financial year 2021.
- Among different states Madhya Pradesh is the largest producer followed by Maharashtra, Karnataka, Uttar Pradesh, and Rajasthan.
- Sikkim became the first State in the world to become fully organic in 2016.

- **Economic benefits:**

- **Increased income:** In the long run the input cost decreases significantly and the yield of organic crops improves which provides income security to the farmers.
- **Employment Opportunities:** According to many studies, organic farming requires more labour input than the conventional farming system. Thus, it will provide employment opportunities especially for countries like India.
- **Eco-tourism:** Organic farms have turned into major attraction in terms of Eco-tourism in countries like Italy.

Government Initiatives to promote Organic Farming in India

- **Paramparagat Krishi Vikas Yojana (PKVY):** It is a part of National Mission of Sustainable Agriculture (NMSA).
 - Under the scheme, Organic farming is promoted through adoption of organic villages by cluster approach and Participatory Guarantee System (PGS) certification.
- **Mission Organic Value Chain Development for North East Region (MOVCD):** It is a Central Sector Scheme which aims to develop certified organic production in a value chain mode to link growers with consumers and to support the development of the entire value chain.
- **Soil Health Card:** The scheme aims to improve Soil Health by providing nutrients information to the farmers. It has led to a decline of 8-10% in the use of chemical fertilizers and raised productivity by 5-6%.
- **Agri-export Policy 2018:** It focuses on marketing and promotion of organic agriculture products foods to aid organic farming in India.
- **Zero Budget Natural Farming:** Government is actively promoting Zero budget natural farming. It is a method of chemical-free agriculture drawing from traditional Indian practices.

CERTIFICATION CONFUSION

For any food to be sold as organic in India, whether fresh produce or packaged product, it must be certified via one of two systems. That road can be long, winding and often expensive.

NATIONAL PROGRAMME FOR ORGANIC PRODUCTION (NPOP)

Adopted in 2001 and administered by the Ministry of Commerce & Industry, it was originally meant for exports.

Under this programme, one of 28 third-party certifiers must check that a farm is free of manufactured chemicals (fertilizers, insecticides, herbicides hormones and pesticides).

In case of processed food, the certifier checks that the produce came from an NPOP certified farm and was processed by a NPOP-certified processor.

Certified foods carry the India Organic logo. The standards are recognized by the European Commission, America's USDA, and Switzerland.

THE CATCH

- **Third-party certification** is expensive and must be renewed annually.
- **So the programme** is restricted to big companies, ones that work with farmers over thousands of acres, and earn revenues largely from exporting non-perishables – oilseeds, processed food, cereals, tea, spices and pulses.

PARTICIPATORY GUARANTEE SYSTEM FOR INDIA (PGS-INDIA)

: It operates outside the framework of third-party certification.

Practised in 38 countries and recognized by the Union Ministry of Agriculture & Farmers Welfare since 2018, it certifies clusters of small farmer (two and five acres each)

Five or more growers who live close to each other form a group and get trained in organic farming under a government scheme.

Then, with help from Regional Councils (India now has 562), farmers inspect each other's holdings, Should a grower violate any norms, their produce is not sold through group.

India now has 6,646 PGS groups, covering about 2.1 lakh farmers.

THE CATCH

- **The system is poorly founded**, farmers are often trained badly and the system does little to create a long-term market for organic produce.
- **The PGS is not recognized** by the US and European Union, two big markets for organic food, So small farmers cannot sell their produce abroad.
- **They can't sell** their food to NPOP-certified processors either, This means they often have little incentive to stay organic.

Challenges faced by Organic sector in India

- **Low Coverage:** About 2.78 million hectares of farmland was under organic cultivation as of March 2020, which is only two per cent of the 140.1 million ha net sown area in the country.
- **Reluctancy of the Farmers:** Due to high initial cost and potential impact on immediate income, most of the farmers are reluctant to undertake organic farming.
 - Also, in many cases the farmers experience some loss in yields on discarding synthetic inputs on conversion of their farming method from conventional to organic.
- **Disparity of Supply and Demand:** The major demand of perishable items comes from metros where there are no farmlands to produce organic fruits and vegetables.
- **Lack of support for inputs:** The government provide subsidies for chemical fertilisers and pesticides but there is no such provision for organic inputs. Also, organic seeds and inputs are highly regulated and governed by government policies.
- **Confused Certification Framework:** There is a lack of unique, well known and third party certified policy or framework for selling organic food products in India, which creates trust issues among the customers. (see infographic)
- **The High Price of Organic Produce:** The final prices of organic produce are mostly higher than conventional products which impact the organic produce market in India.
- **Lack of Quality Standards for Biomanures:** There are no fixed standards and quality parameters for biofertilizers and bio manures.

Way Forward

- **Awareness campaigns:** There is a need of holistic and community-driven approach, similar to the “Swachh Bharat” for “Swachh Food” needs to be undertaken.
 - A vigorous campaign to highlight the benefits of organic farming against the conventional system is essential to increase the awareness of the farmers and consumers.
- **Smart transport and dedicated channels of supply** can help bridge the demand- supply gap.
- **Policy initiatives for organic input management:** The government should implement a separate policy framework for organic farming which covers seeds production and input supplies.
- **Transparent regulatory framework for compliance of organic standards** to develop trust among customers.
 - **FSSAI’s Jaivik Bharat logo** for Organic Food that enables consumers to distinguish organic food products from other non-organic products is a step in the right direction.

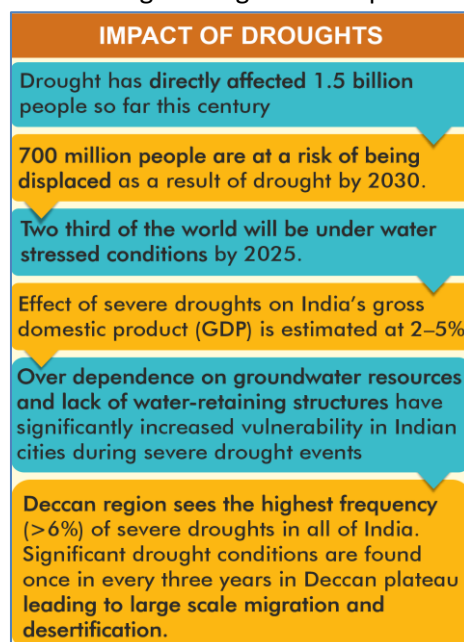
5.5. DROUGHTS IN INDIA

Why in News?

Recently, Global Assessment Report on Disaster Risk Reduction (GAR) was released by UN Office for Disaster Risk Reduction (UNDRR).

More on News

- GAR Special Report on Drought 2021 **explores the systemic nature of drought and its impacts on achievement of Sendai Framework for Disaster Risk Reduction, SDGs and human and ecosystems health and wellbeing.**
 - Sendai Framework for Disaster Risk Reduction 2015-2030 **aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.**



Drought differs from other natural hazards such as cyclones, floods, earthquakes, volcanic eruptions, and tsunamis in that:

- There is **no universally accepted definition** that can encapsulate its complexity.
- It is **difficult to determine the beginning and end of a drought episode** because of the slow onset, silent spread and gradual withdrawal. In India, it is generally considered to be coterminous with the monsoons.
- There is **no indicator or index which can precisely forecast the advent and severity** of a drought event, nor project its possible impacts.

- **Spatial expanse tends to be far greater** than in the case of other natural calamities which make effective response highly challenging.
- **Impacts are generally non-structural and difficult to quantify** e.g. the damage to the ecology, the disruption of socio-economic fabric of communities, the long term effects of mal-nutrition on health and morbidity etc.

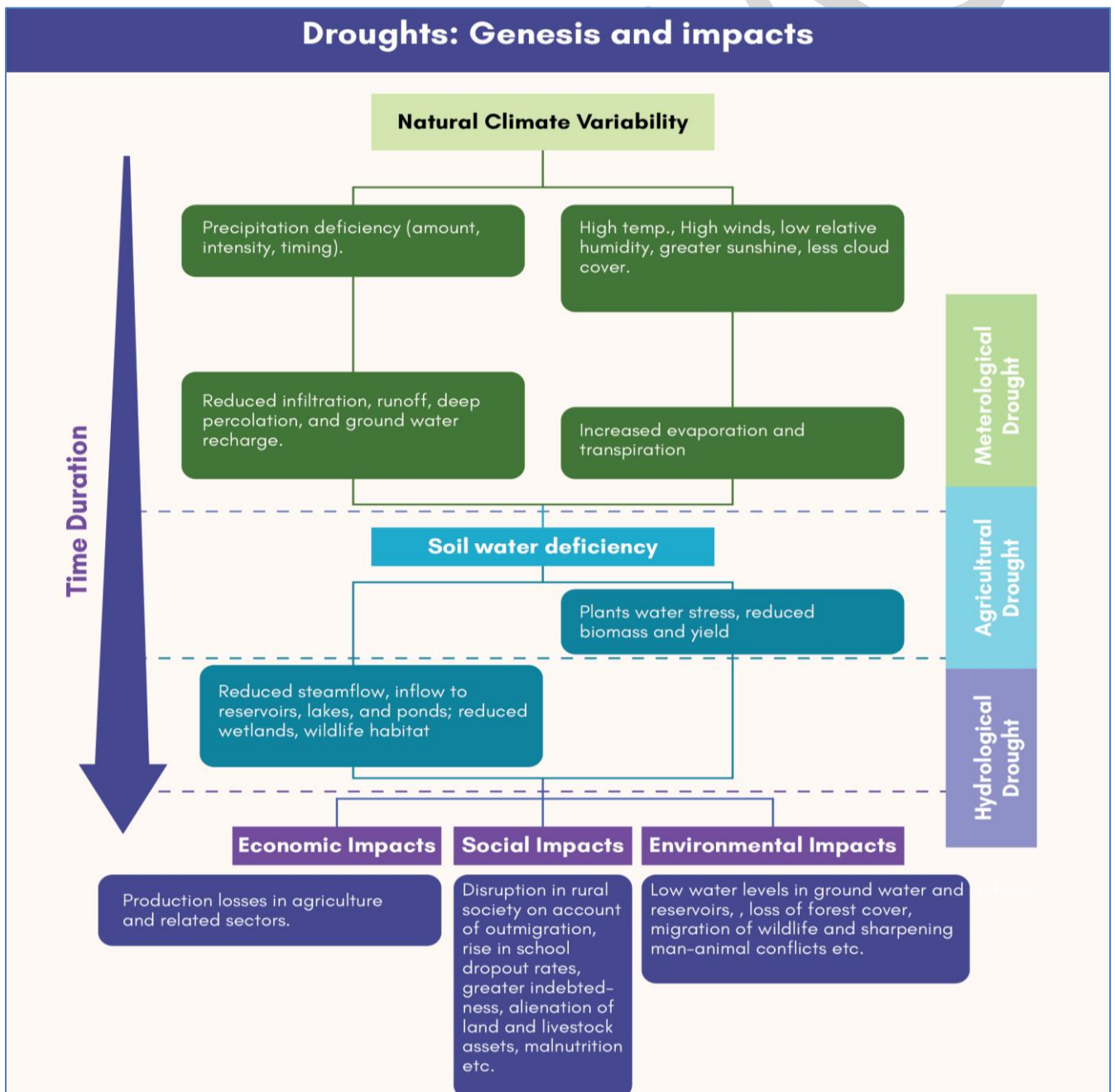
Heading: Key Highlights of the report

India specific classification of drought

- A drought year as a whole is defined by the IMD as a year in which, the **overall deficiency is more than 10% of Long Period Average (LPA) value** and **more than 20% of its area is affected by drought conditions**, either moderate or severe or combined moderate and severe.
- IMD has officially expunged the word “drought” from its vocabulary as part of a decision to do away with or re-define terms that are not scientifically precise.
- Instead of using terms like “All India Drought Year” or “All India Severe Drought Year”, the IMD has adopted “deficient” year or “large deficient” year.

What is drought?

- Drought is characterized by a **lack of precipitation**—such as rain, snow, or sleet—for a **protracted period of time**, resulting in a water shortage.
- While droughts occur naturally, human activity, such as water use and management, can exacerbate dry conditions.



Classification of Droughts



Meteorological drought	Hydrological drought	Agricultural drought
<ul style="list-style-type: none"> Defined as the deficiency of precipitation from expected or normal levels over an extended period over time. It is said to occur when seasonal rainfall received over an area is less than 25% of its long-term average value. It is further classified as moderate drought if rainfall deficit is 26-50% and severe drought when deficit exceeds 50% of the normal. 	<ul style="list-style-type: none"> Defined as deficiencies in surface and subsurface water supplies leading to a lack of water for normal and specific needs. Such conditions arise, even in times of average (or above average) precipitation when increased usage of water diminishes the reserves. 	<ul style="list-style-type: none"> Usually triggered by meteorological and hydrological droughts, occurs when soil moisture and rainfall are inadequate during the crop growing season causing extreme cross stress and wilting.

Droughts in India

- Over 68% of India is vulnerable to drought. The 'chronically drought-prone areas' – around 33% – receive less than 750 mm of rainfall, while 35%, classified as 'drought-prone' receive rainfall of 750-1,125 mm.
 - The major drought years in India were 1877, 1899, 1918, 1972, 1987 and 2002.
- NITI Aayog, under the Composite Water Management Index report, highlighted that **about two lakh people die in India every year due to inadequate water and sanitation**. It states that the 6% of GDP will be lost by 2050 due to water crisis.
- On the basis of severity of droughts, **India can be divided into the 3 regions:**

Related Concept Flash Drought

- Unlike conventional droughts that develop over months, Flash Drought refers to a **severe drought kind of situation that develops very rapidly**.
- They are caused by **high evapo-transpiration rates due to abnormally high temperatures (Heatwave flash drought), winds, and high insolation** and rain staying away (Precipitation deficit flash drought) for 15-20 days at a stretch.
- It can be classified as **agricultural droughts** due to their direct association with soil moisture and crop stress.

Extreme Drought Affected Areas	<ul style="list-style-type: none"> Most parts of Rajasthan, particularly areas to the west of the Aravali hills, i.e. Marusthali and Kachchh regions of Gujarat fall in this category.
Severe Drought Affected Areas	<ul style="list-style-type: none"> Parts of eastern Rajasthan, most parts of Madhya Pradesh, eastern parts of Maharashtra, interior parts of Andhra Pradesh and Karnataka Plateau, northern parts of interior Tamil Nadu and southern parts of Jharkhand and interior Odisha.
Moderate Drought Affected Areas	<ul style="list-style-type: none"> Northern parts of Rajasthan, Haryana, southern districts of Uttar Pradesh, the remaining parts of Gujarat, Maharashtra except Konkan, Jharkhand and Coimbatore plateau of Tamil Nadu and interior Karnataka.

Causes of recurring drought in India:



- Considerable seasonal/regional variations:** in spite of a high average annual rainfall of around 1,150 mm.
 - There is a relatively short window of **less than 100 days during the South-West Monsoon season** (June to September) when about 73% of the total annual rainfall of the country is received.
 - Uneven distribution of rainfall over different parts of the country** in that some parts bear an inordinately high risk of shortfalls, while others tend to receive excessive rainfall.
 - Low average annual rainfall of 750mm over 33% of cropped area** heightens susceptibility to drought.
- Over-exploitation:** of ground water and sub-optimum conservation of surface water leading to inadequate water availability for irrigation. Traditional **water harvesting systems have been largely abandoned**.
- Limited irrigation coverage and poor irrigation techniques:** (net irrigated area in the country is less than 50%) exacerbates the impact of drought on account of complete dependence of agriculture in such areas on rainfall. India's farm water efficiency is presently amongst the lowest in the world.

Current challenges in drought management

- **Reactive and relief centric approach:** There is a need to shift from relief-centric approach to integrated management emphasising on prevention, mitigation and preparedness, to minimise losses.
- **Issues in Assessment and Early Warning:** Forecasts are general in terms of space and time, timing does not match user needs, information received from different sources sometimes has conflicting messages etc.
- **Lack of proper, reliable data on water:** Data in the water sector exists in silos, with very little horizontal and vertical data sharing across the value chain of water thereby reducing efficiency.

NDMA Guidelines on Drought Management

Institutional framework and financial arrangements	<ul style="list-style-type: none"> • Separate Drought Monitoring Cells (DMCs) will be created at the state level with adequate staff under the control of State Disaster Management Authorities (SDMA's). • State DMCs will undertake the preparation of vulnerability maps for their respective States. • Watershed development approach is an important facet of drought management initiatives, taken up through the programmes of the Government of India.
Assessment and Early Warning	<ul style="list-style-type: none"> • Integrate ground-based information with space-based information for comprehensive reporting. • Automatic weather stations will also include moisture sensors for obtaining information about the soil moisture levels under natural environment. • Unit of deceleration of drought should be standardised and alternative methods of quicker assessment of crop yield need to be evolved so as to mitigate the impact of drought in time.
Prevention, Preparedness and Mitigation	<ul style="list-style-type: none"> • Automatic weather station and rain-gauges will be put in place at appropriate spacing to enable micro level analysis and forecasting. • Mitigation measures to be taken will include: <ul style="list-style-type: none"> ○ Conduct of pilot studies in all categories of drought prone areas for suggesting long term mitigation measures. ○ Cloud-seeding as a possible measure of mitigation will be considered. • Promote crop diversification and utilization of sprinklers/Drip irrigation systems. • Promote protective irrigation through micro irrigation systems through incentives. • Afforestation with subabul, seamaruba, casurina, eucalyptus and bio diesel plantation like jetropha and pongomia will be encouraged. • Insurance products will be developed for different agro-climatic zones providing coverage against drought.
Capacity Development	<ul style="list-style-type: none"> • A national training and capacity building programme for drought management will be formulated and implemented. • The agricultural universities and National Research Centres of ICAR will be encouraged to undertake contractual research for industries/farmers as a means of revenue generation and providing solutions to immediate problems. • Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) will ensure capacity building of their officers and employees to carry out relief, rehabilitation and reconstruction activities.
Relief and Response	<ul style="list-style-type: none"> • Agencies will be sensitized regarding their value in generating employment in the drought-affected areas and building assets such as tanks and wells which reduce the impact of drought. • Provision of consumption loan will also be encouraged in drought prone areas and efforts will be made to bring agricultural labours into the net of social security.
Preparation of Drought Management Plans (DMP)	<ul style="list-style-type: none"> • National Executive Committee (NEC) will prepare a National DMP, incorporating plans prepared by central ministries and state governments for drought affected States and districts. • States are requested to modify the existing plans according to GoI-United Nations Development Programme (UNDP) Programme on Disaster Risk Management.

 <p>SMART QUIZ</p>	<p>You can scan this QR code to practice the Smart Quiz of Environment at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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6. SOCIAL ISSUES

6.1. HIGHER EDUCATION IN INDIA

Why in news?

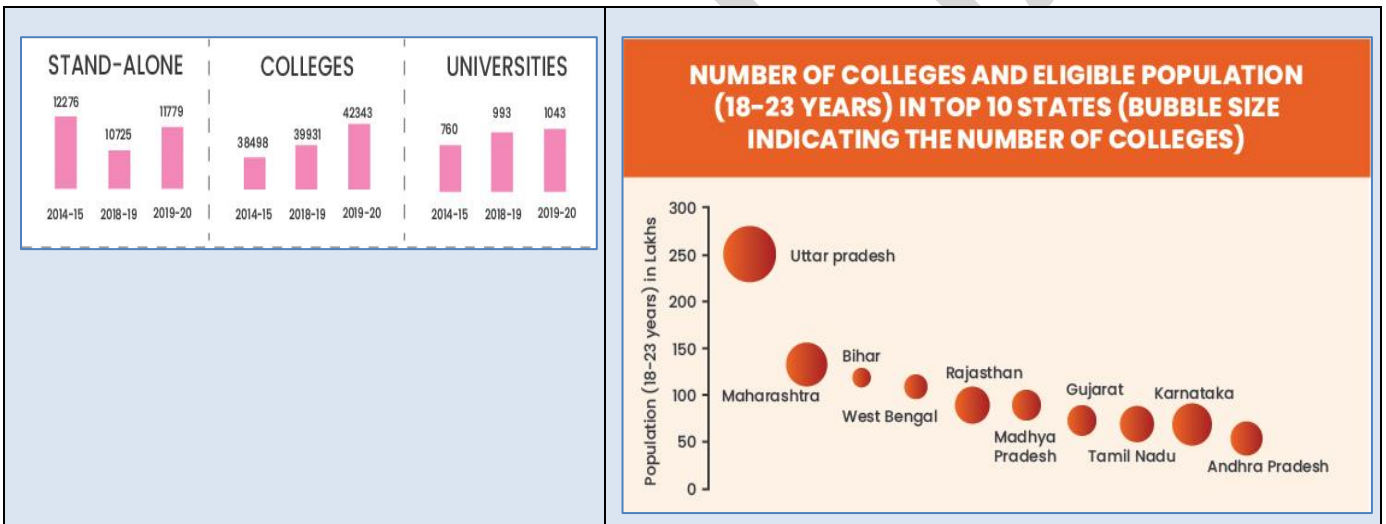
Recently, Ministry of Education released **All India Survey of Higher Education (AISHE) report** for the year 2019-20.

About AISHE

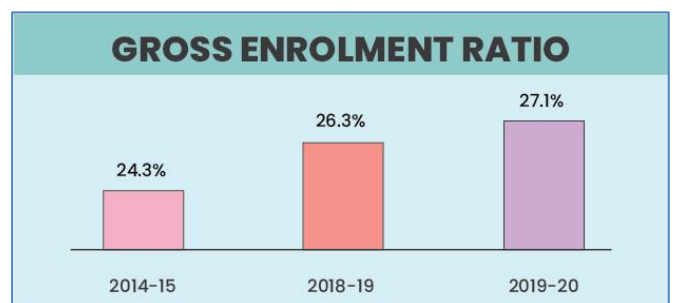
- All India Survey on Higher Education (AISHE) is an **annual web-based survey** conducted since 2010-11 by the erstwhile Ministry of Human Resource Development **portraying the status of higher education in the country.**
- The survey is being **conducted under** the central sector scheme **Higher Education Statistics and Public Information System (HESPIS).**
- Survey is **based on voluntary uploading of data by institutions of Higher Education** and covers all higher education institutions in the country, which are **categorised into 3 broad categories:**
 - Universities**
 - Colleges/Institutions**
 - Stand-alone Institutions** (not affiliated with Universities and are not empowered to provide degree, therefore run Diploma Level Programmes.)

Key findings of AISHE 2019-20

- Distribution of higher education institutions:**



- Enrolment in Higher Education: Gross Enrolment Ratio (GER) in higher education** in India has risen marginally.
 - Gross Enrolment Ratio (GER)** is the percentage of students belonging to the eligible age group (18 to 23 years) enrolled in Higher Education.
- Gender Parity:** The GER for women in 2019-20 is 27.3% as compared to 26.9% for men.
 - Consequently, **Gender Parity Index (GPI)** in Higher Education in 2019-20 is 1.01 against 1.00 in 2018-19 indicating an improvement in the relative access to higher education for females of eligible age group compared to males.
 - A GPI of 1 indicates parity between the sexes; and a **GPI greater than 1 indicates a disparity in favour of females.**
- Pupil Teacher Ratio (PTR)** (number of students for every teacher): in Higher Education is 26 and there are large variations among the States.
 - For instance, PTR is more than 50 in Bihar and Jharkhand and among top 6 States in terms of Enrolment, Karnataka and Tamil Nadu have the best PTR of 18 each.

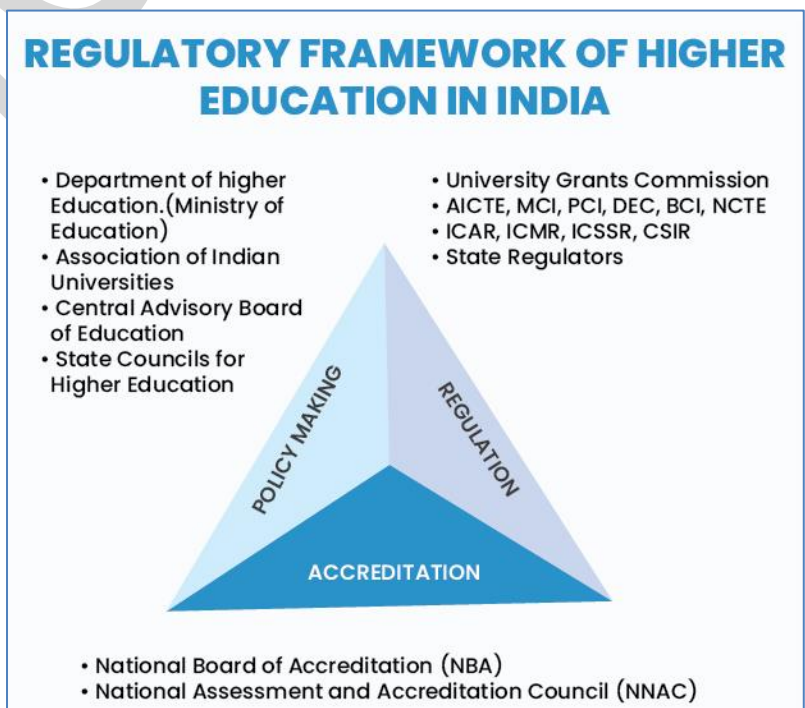
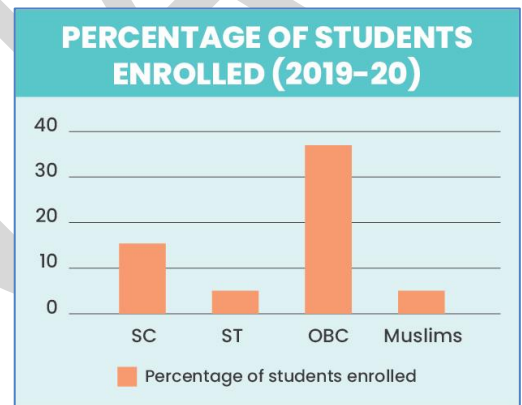


- **Preferred Educational Streams:** Nearly 85% of the students (2.85 crore) were enrolled in the six major disciplines such as Humanities, Science, Commerce, Engineering & Technology, Medical Science and IT & Computer.
- **Share of foreign students:** The total number of foreign students enrolled in higher education is 47,427. Highest share of foreign students come from the neighbouring countries of which Nepal is 26.88% of the total, followed by, Afghanistan (9.8%), Bangladesh (4.38%), Sudan (4.02%), Bhutan constitutes (3.82%) and Nigeria (3.4%).

Challenges with regard to higher education in India

India has seen a dramatic increase in the capacity of its higher education sector in the last two decades and enrolment in higher education has increased four-fold since 2001. However, challenges still remain in terms of the following:

- **Low students enrolment in comparison to the developed and other developing countries:** GER in higher/tertiary education is more than 88% in US, 54% in China and 51% in Brazil. Low GER **creates bottleneck in achieving massification of higher education in India** (making higher education as a right for those with certain formal qualifications).
 - Low GER in India is **primarily because of shortage of educationally eligible population for enrolment in higher education**. Several factors, including gender, language of instruction and socio-economic compulsions may be responsible for low enrolments and high dropout rates at higher-secondary level.
- **Social Inequity:** Though the overall gender inequality has come down significantly, this is very high between the rich and the poor. The inequality in access to HE also varies considerably between rural and urban regions with under-representation of marginalised sections such as SC, ST and minorities.
- **Shortage of resources:** Bulk of the enrolment in higher education is handled by state universities and their affiliated colleges which receive very small amounts of grants in comparison to central universities.
 - Nearly, 65% of the University Grants Commission (UGC) budget is utilised by the central universities.
- **Poor Employability:** India Skills Report 2021 finds that employability across disciplines is at 45%. The skill gap and unemployment rate for graduates point to two problems in the higher education system- Woeful lack of quality in many colleges in India and the disconnect between education in colleges and the skills required in a workplace.
- **Quality of institutions:** A large number of colleges and universities in India are unable to meet the minimum requirements laid down by the UGC and while UGC publishes an annual list of 'fake universities' and 'fake colleges' that operate without recognition it does not have the power to directly act against such HEIs.
 - Only 14% of all HEIs in India have valid NAAC accreditation and only three universities from India rank in the top-200 positions in the latest QS World University Rankings 2022.
- **Faculty shortages** along with the inability of the state educational system to attract and retain well-qualified teachers. Further, there is no mechanism for ensuring the accountability



and performance of professors in universities and colleges unlike foreign universities where the performance of college faculty is evaluated by their peers and students.

- **Suboptimal research ecosystem:** India's gross expenditure on R&D is 0.65 per cent of its GDP, significantly lower than the 1.5-3 per cent of GDP spent by the top 10 economies. As a result, just 2.5% HEIs run PhD programmes and students enrolled in Ph.D. is only about 0.5% of the total student enrolment.
 - Additionally, despite an increase in publications, low citation impact implies that the quality of Indian research papers is not at par with that of other countries. The relative impact of citations for India is half (0.51) of that of the world average (1.0).
- **Governance and Accountability:** State-level authorities and affiliating universities are the primary regulators of higher education. This has led to higher education system marked by over-centralization, bureaucratic structures and lack of accountability, transparency, and professionalism.
- **COVID implications:** Covid-19 has created several negative impacts on higher education such as passive learning, unprepared teachers for virtual class, altering structure of student enrolment, increased unemployment due to delays in exam and getting degree certificates.
 - It also **highlighted the challenge of prevailing digital divide** resulting in lack of student involvement during the online classes, increased absenteeism and poor performance.
 - The health crisis combined with a recession **increases the probability of families deciding to forego higher education** entirely or defer enrolment.

Major initiatives by the government for higher education sector

- **Improving Student Enrolment:**
 - **National Education Policy (NEP) 2020** aims at increasing the GER in higher education to 50% by 2035 with emphasis on making the curriculum flexible through an interdisciplinary approach, creating multiple exit points, and scholarships to ST, SC, OBC and SEDGs students as per their merit.
 - **New UGC regulation for Open and Distance Learning** that allows entry of reputed institutions to offer education on the distance mode.
 - **SWAYAM portal** to reach out to people and allow them to secure good quality education.
- **Addressing Funding requirements:**
 - **Rashtriya Uchchatar Shiksha Abhiyan (RUSA), 2013** aims at financing state institutions with respect to their governance and performance.
 - **Higher Education Financing Agency (HEFA), 2018**, a joint venture of MoE and Canara Bank aims to leverage funds from the market, donations and CSR funds to be used to finance improvement in infrastructure in top institutions.
- **Better regulation of HEIs: Higher Education Commission of India (HECI)** was proposed to act as an overarching regulator of higher education by replacing UGC or AICTE.
- **Revitalising Research Ecosystem:**
 - **Revitalising Infrastructure and Systems in Education (RISE)** scheme funded by a restructured Higher Education Financing Agency (HEFA) aims at increased investments in research and related infrastructure in premier educational institutions.
 - **Prime Minister's Research Fellows (PMRF) Scheme** to enhance the quality of technical research
 - **IMPRINT (IMPacting Research INnovation and Technology) India**, Joint initiative of IITs and IISc to boost original scientific and technological research.
 - **Scheme for Promotion of Academic and Research Collaboration (SPARC)** aims at improving the research ecosystem of India's higher educational institutions by facilitating academic and research collaborations between Indian institutions and the best institutions in the world.
- **Improving quality of HEIs:**
 - **National Institutional Ranking Framework (NIRF) 2015**, a methodology adopted by the MoE to rank higher education institutions in India in order to encourage institutes to compete against each other and simultaneously work towards their growth.
 - ✓ NIRF is also one of the criterias for private institutions assessment for the **Institutions of Eminence (IoE) Scheme** that provide the regulatory architecture for setting up or upgrading of 20 Institutions (10 from public sector and 10 from the private sector) as world-class teaching and research institutions.
 - **Mandatory Assessments:** The UGC has made NAAC assessments compulsory for all HEIs that apply for funding and the AICTE recently announced that at least half the programmes run by an HEI must be accredited by the NBA.

Opportunities ahead

- **Adoption of blended learning:** Covid-19 pandemic has reshaped the teaching and learning process and encouraged the use of different digital resources. All India Council for Technical Education (AICTE) has

stressed the need for the adoption of blended learning synchronising both classroom learning and online teaching in the post-COVID era.

- **Investments in education sector:** Distance learning programs and online learning solutions are expected to create a US\$2 billion market in India by 2021. Foreign institutions can collaborate with Indian businesses in this subsector to leverage the global market.
- **Making Teaching an attractive and lucrative career:** This requires devising a well-structured promotion policy and incentive plan for faculty to attract and retain qualified faculty.
- **Industry-academia linkage:** Introducing vocational courses, mandatory internships and ensuring that curriculum taught in colleges remains relevant to the requirements of industry and adds to the employability of youth.
- **Redefining Enrolment Indicator:** The researchers have suggested that instead of GER, India should look at Eligibility Enrolment Ratio (EER), which is the ratio of eligible population — those who have at least passed Class 12 in the 18-23 age group — to the number of people attending college. EER **would ensure a change in education pedagogy in India**, with efforts to improve the quality of school education and give more importance to skill and vocational training.
- **Upgrading accreditation capacity:** There is a need for more players in the sector as NAAC does not have the capacity to assess all the HEIs in India. Clustering HEIs will enable close scrutiny and help make them more manageable thus leading to upgradation in quality.

6.2. CHILD LABOUR

Why in news?

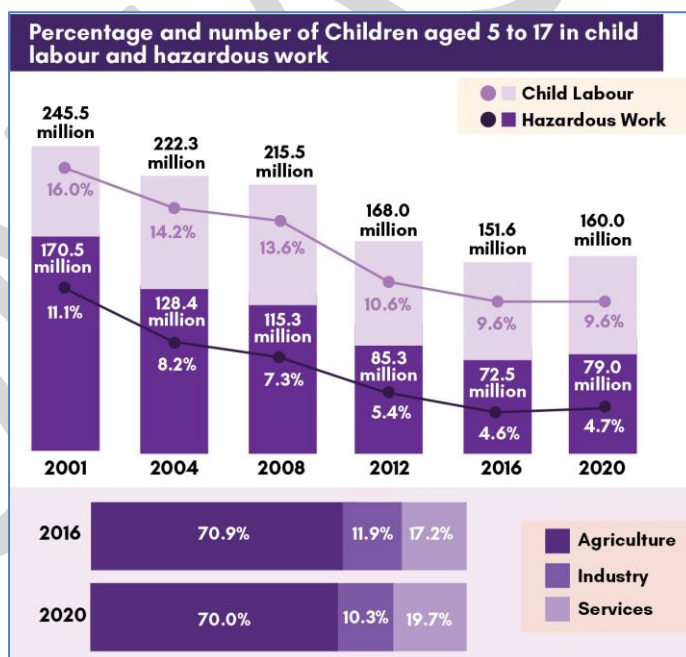
Recently, a new report titled ‘Child Labour: Global estimates 2020, trends and the road forward’ has been released by International Labour Organisation (ILO) and the United Nations Children’s Fund (UNICEF) on occasion of World Day against Child Labour (observed every year on 12th June).

Key findings of the report

- **160 million children were in child labour globally**, accounting for almost 1 in 10 of all children worldwide.
- The prevalence of **child labour in rural areas is close to three times higher** than in urban areas.
- **Global progress against child labour has stagnated** since 2016. (refer infographic)
- **72% of all child labour occurs within families**, primarily on family farms or in family microenterprises.
- Globally, **9 million additional children are at risk of being pushed into child labour** by the end of 2022 because of COVID 19 pandemic.
- The **agriculture sector accounts for more child labourers**, followed by services and industry. (refer infographic)
- **Sub-Saharan Africa has the highest prevalence** and largest number of children in child labour.

What is Child labour?

- According to ILO, ‘Child labour’ is often defined as **work that deprives children of their childhood, their potential, and their dignity**, and that is **harmful to physical and mental development**. It refers to work that is:
 - **Mentally, physically, socially or morally dangerous and harmful** to children.
 - **Interferes with their schooling** by depriving them of the opportunity to attend school, obliging them to leave school prematurely or requiring them to attempt to combine school attendance with excessively long and heavy work.
- The **worst forms of child labour comprise all forms of slavery**, such as the **sale and trafficking** of children, **debt bondage**, and **forced labour**, use of **children in armed conflict**, pornography or other illicit or hazardous work that **compromises children’s health, morals, or psychological wellbeing** of children.



- As per Census (2011), there are **10.1 million working children between age of 5-14 years in India**.
 - Uttar Pradesh, Bihar, Rajasthan, Maharashtra, and Madhya Pradesh constitute nearly 55% of total working children in India.

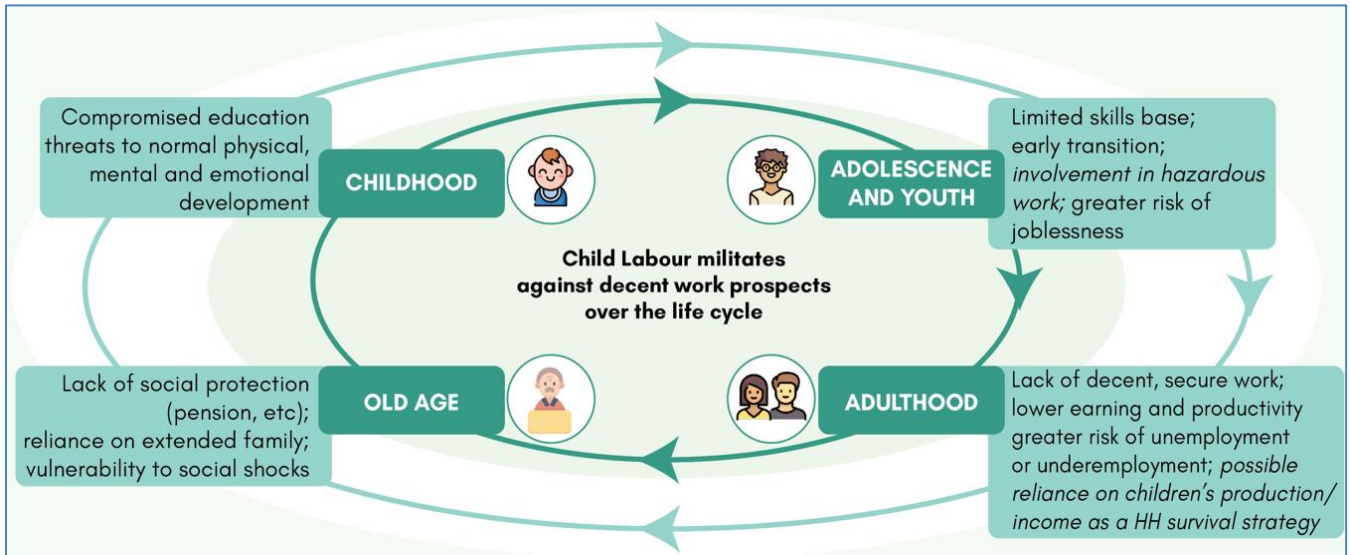
What are the causes driving prevalence of Child Labour in India?

- Economic Causes:**
 - Poverty:** In developing countries poverty is one of the major drawbacks and the **children were considered as helping hand to feed their families**, to support their families.
 - Pledging Labour of a Child:** The poor economic conditions of people in India force people to borrow money from money lenders by pledging labour of child. However, difficulty in paying back the debts and interest leads to a form of forced labour for the child.
 - Professional needs:** There are some industries such as the **bangle making industry, where delicate hands and little fingers are needed to do very minute work**, which indirectly encourages Child Labour.
 - Cheap labour:** In order to take advantage of the cheaper labour cost accruing to labour provided by a child, some shopkeepers, companies, and factory owners employ children.
- Social causes:**
 - Crisis situations:** Natural disasters or the death of one of both parents can force children into hazardous work to help their family survive.
 - Lack of access to quality education:** Absence of availability and quality of affordable schooling drives children to the labour market, indirectly increasing the extent of Child Labour.
 - Limited understanding of Child Labour:** When families do not understand the dangers of child labour, and how these impact on the health, safety, well-being and future of their child, they are more likely to send their children to work.



Impact due to practice of Child Labour

- Impact on health of Child:**
 - Agriculture:** Children may be **exposed to toxic pesticides or fertilizers**. They work with dangerous blades and tools and carry heavy loads.
 - Mining:** Children may **use poisonous chemicals, face the risk of mine collapse**, and sometimes work with explosives.
 - Construction:** Children may **carry heavy loads, work at heights without safety equipment**, and risk injury from dangerous machinery.
 - Manufacturing:** Children may **use toxic solvents**, perform repetitive tasks in painful positions, and risk injury from sharp tools.
 - Domestic work:** Children **risk abuse, work long hours, and often live-in isolation** from their families and friends.



- **Threat to nation:** The continuing persistence of child labour and exploitation poses a **threat to national economies** and has severe **negative short and long-term consequences for children** such as denial of education etc.
- **Child trafficking:** It is linked to child labour and always results in child abuse. Trafficked children **face all forms of abuse-physical, mental, sexual, and emotional**, and are subjected to prostitution, forced into marriage, or illegally adopted.

Impact of COVID-19 on Child labour

- **Economic impact:**
 - **Extreme poverty:** The pandemic has emerged as a **child rights crisis**, **aggravating the risk of child labour** as many more families are likely to have fallen into extreme poverty.
 - **Forced Labour:** Children in poor and disadvantaged households in India are now at a greater risk of dropping out of school and being **forced into labour, marriage and even falling victim to trafficking.**
 - **Economic shocks:** More than 94% of children faced economic crisis at home and family pressure had pushed them into work due to **increase in both unemployment and underemployment.**
- **Education:** The closure of 1.5 million schools because of the pandemic in India has **impacted 247 million children enrolled in elementary and secondary schools** leading to child labour and unsafe migration.
- **Abuse of children:** Nearly **18.6% of the children often face physical, mental and verbal abuse** from their employers. Children, depending upon their age, earned between Rs. 100 and Rs. 400 as wages per day.
- **Health:** Pandemic has **threatened general health and child development** through exposure to the virus and consequent infection which led to problems such as **cognitive impairment, depression, and non-communicable diseases.**

Government steps for eradication of child labour

- **Gurupadswamy Committee, 1979:** It was formed to **study the issue of child labour and recommended a multiple policy approach** in dealing with the problems of working children.
- **India ratified ILO Convention 182** on the Worst Forms of Child Labour and Convention 138 on the Minimum Age of Employment.
- **Child Labour (Prohibition and Regulation) Amendment Act 2016:** It prohibits the 'engagement of **children in all occupations** and of **adolescents in hazardous occupations** and processes', wherein 'adolescents' refers to those under 18 years and children to those under 14 years.
- **National Child Labour Project (NCLP) Scheme:** Under the scheme **Special Schools/Rehabilitation Centres** for the rehabilitation of child labourers are opened. These Centers **provide non-formal education, vocational training, supplementary nutrition** and stipend to children withdrawn from employment.
- **PENCiL (Platform for Effective Enforcement for No Child Labour) Portal:** It has become a pivotal tool in rescuing and rehabilitating victims of child labour.
- **Bachpan Bachao Andolan (Save the Childhood Movement)** has helped liberate more than 85,000 children in India from exploitation through education and rehabilitation.

What approach can be adopted to eliminate the curse of Child Labour?

- **Integrated system:** Child labour and other forms of exploitation are preventable through integrated approaches that **strengthen child protection systems as well as simultaneously addressing poverty and**

inequity, improve access to and quality of education and mobilize public support for respecting children's rights.

- **Laws and regulations:** It is necessary to ensure that laws and regulations are in place to protect children, backed by enforcement machinery and child protection systems, and the services required to apply them.
- **Frontline supporters:** Teachers and others can be frontline supporters to protect children and can alert other stakeholders such as social workers to situations where children display signs of distress or indicate they work long hours.
- **Promotion of decent work:** It delivers a **fair income for young people** (of legal working age) and adults, with a particular emphasis on workers in the informal economy, in order for families to escape poverty-driven child labour.
- **Ensuring good-quality schooling** at least up to the minimum age for entering employment to provide a viable alternative to child labour and afford children a chance at a better future.

Conclusion

It is imminently important for the world to put an end to the malaise of child labour. The governments, organizations, the civil society, and the citizenry, must come forward to pledge against child labour in consonance with the goals envisaged by the UN's declaration of 2021 as the International Year for the Elimination of Child Labour.

6.3. MODEL TENANCY ACT 2021

Why in News?

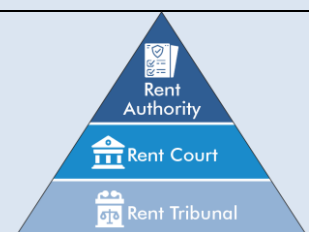
The Union Cabinet has **approved the Model Tenancy Act** for circulation to all States / Union Territories for adaptation by way of enacting fresh legislation or amending existing rental laws suitably.

About Model Tenancy Act 2021

Objectives: To **regulate renting** of residential and commercial premises and **protect and balance the rights** of landlords and tenants.

Key Features of the Model Act

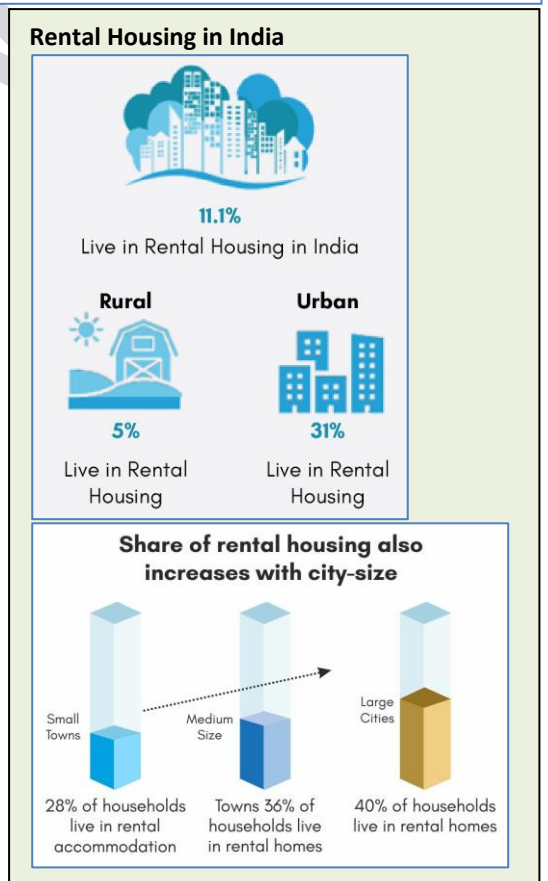
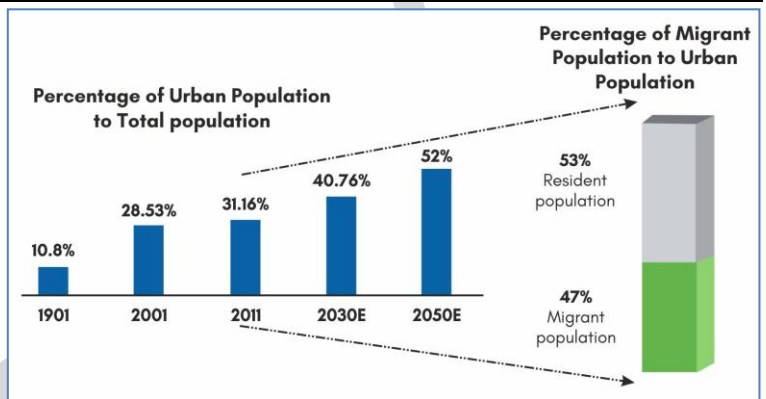
Definitions	Provides clear definition of landlord, local authority, premises, property manager, rental agent, tenant, sub tenant and so on.
Rights and Obligations of Landlord and Tenant	Provides clarity regarding various aspects like <ul style="list-style-type: none"> • Retention of original tenancy agreements, • Rent and other charges payable and receipt, • Deposit of rent with Rent Authority, • Repair and maintenance of the property, • Entry of landlord into premises, • Duties of a property manager and consequences of violation of duties.
Non-applicability to certain premises	Does not apply to certain premises like <ul style="list-style-type: none"> • Hotel, lodging house, inn etc. • Premises owned or promoted by Central or State Government or UT Administration or local authority or a statutory body or Cantonment Board, • Premises owned by a company, University or organisation given on rent to its employees as part of service contract, • Premises owned by religious or charitable institutions and • Premises owned by auqaf registered under the Waqf Act, 1995 or by any trust registered under the public trust law of State/UT. • Building or category of buildings specifically exempted by notification by State Government/UT Administration. <p>However, if the owner and tenant of above premises (from 2-6) agrees, the tenancy agreement may be regulated under the provisions of this Act</p>
Dispute adjudication mechanism	Provides three-tier quasi-judicial dispute adjudication mechanism (Refer Fig) <ul style="list-style-type: none"> • No civil court will have jurisdiction over matters pertaining to provisions under Act. • Rent Authorities and Rent Courts may be established by the District Collector with the approval of the state government. The state or



	<p>union territory government may establish a Rent Tribunal after consulting with the jurisdictional High Court.</p> <ul style="list-style-type: none"> Specifies timelines for adjudication of certain cases.
Other Features	<ul style="list-style-type: none"> Tenancy agreement: Landlord and tenant to sign a written agreement which specifies the rent, period of tenancy and other related terms. Security deposit: Capped at two months' rent for residential premises, and six months' rent for non-residential premises. Tenancy period: Renewal or extension with tenant's requests and enhanced rent if tenancy period has ended and not been renewed, or fails to vacate the premises at the end of such tenancy. Eviction: Conditions for eviction include refusal to pay rent, failure to pay rent for more than two months, occupation of part or whole of premises without written consent and misuse of premises despite a written notice. Sub-letting: Prohibits sub-letting unless allowed through a supplementary agreement. The landlord and tenant must jointly inform the Rent Authority about the sub-tenancy.

Need of the Act

- Addressing Housing Shortage:** In 2012 urban housing shortage was estimated to be at **1.9 crore units** which increased further. **2015 draft National Urban Rental Housing Policy** noted that significant housing shortage faced by urban areas **cannot be addressed by home ownership.**
- Rapid Urbanisation:** India's urban population share has grown **more than threefold** in just over a century-approximately **10% in 1900s to current levels of more than 34%.** By 2050, it is expected to reach over 50% increasing housing demand. (Refer Graph).
- Migration to Cities:** Estimated inter-state migration is **about 9-10 million annually** which will accelerate with time due to factors like **income-pulls.**
- Rising Cost of home ownership:** **Home cost as a multiple of annual income** has shot up beyond the sweet spot of 5 times, to almost **9-12 times in the previous decade.** Cost of house ownership across India has shown a **CAGR of ~ 5%** in the past few years.
- Enabling Formalisation:** The **2011 Census** noted that between 6.5 crore to 10 crore people (**17% to 24% of the urban population**) live in **unauthorised housing** in urban areas. The **Economic Survey (2017-18)** suggested **rental housing as a key** to address informality and shortage.
 - Act will provide a **huge opportunity for private housing operators and institutional investors** in the organized rental housing market.
- Legal loopholes:** The 2015 draft Policy observed that rent control laws of State governments skew **arrangements towards tenants and lead to more litigation** which has eroded the trust of landlords in the regulatory system.
 - Model Act **protects interests of all stakeholders-** tenants, landlords and investors-to transact and deal in rental housing by overhauling legal framework.
- Unlocking vacant Properties:** As per estimates by the Ministry of Housing and Urban Affairs, currently **some 11 million homes are lying vacant** in urban areas as landlords are unwilling to let these properties due to lack of protective measures.



Challenges associated with the Act

- **Not Binding:** Rental housing is regulated by states as **land, land improvement, and control of rents falls under the State List** of the Indian Constitution. The Model Act is **only a proposed framework** that states and union territories **may alter** when passing their own tenancy laws.
- **Limited Purview: Excluding number of premises** like properties owned by Central/State government, Union Territory administration will keep a **large inventory of leasable properties away from the regulatory framework**.
- **May violate Right to privacy:** Act requires all landlord and tenants to intimate the Rent Authority about a rental agreement along with **details like Aadhaar numbers and attach self-attested copies of the card**. This may violate the **Puttaswamy judgement (2018)**.
- **Specifies minute details:** For instance, Act states that landlord must carry out structural repairs and tenants must be responsible for drain cleaning, geyser repairs etc. Providing these details may **restrict changes that contracting parties may want to make** in a contract based on their specific situation.
- **No time limit specified for resolution of some disputes:** For example, it does not specify a timeline within which the Rent Authority must resolve a **dispute on revision of rent**.

Another scheme to promote rental housing: Affordable Rental Housing Complexes (ARHCs)

- **ARHCs:** ARHCs for urban migrants / poor is a sub-scheme under Pradhan Mantri Awas Yojana -Urban (PMAY-U).
- **AHRCs will be implemented under two models:**
 - **Model 1: Utilizing existing Government funded vacant houses** to convert into ARHCs through Public Private Partnership or by public agencies for a period of 25 years.
 - **Model 2: Construction, Operation and Maintenance of ARHCs** by Public/ Private Entities on their own available vacant land for a period of 25 years.

Way forward

- Notwithstanding the challenges, Model Act is a progressive move as it aims to create an **accountable and transparent ecosystem** for renting premises in a **regulated and efficient manner**.
- Once the Act is implemented across the country, India may be ready to **introduce rental housing models such as Build-To-Rent and Rent-to-Own**.
- Better **convergence among different missions** that seek to assist the creation of **adequate urban housing**, such as the PMAY, Deendayal Antyodaya Yojana National Urban Livelihoods Mission, and Swachh Bharat Mission can help in **rental housing stock creation**.
- The **draft National Rental Housing Policy (2015)** highlighted the **need of a comprehensive policy** to guide the role of central and state governments to sustainably grow rental housing and make it inclusive. Other measures recommended by policy include:
 - **Provision of incentives** such as tax exemptions and subsidies to tenants and home owners,
 - Encouraging **public-private partnerships** and residential rental management companies, and
 - **Enhancing access to finance** within the EWS and LIG sectors.

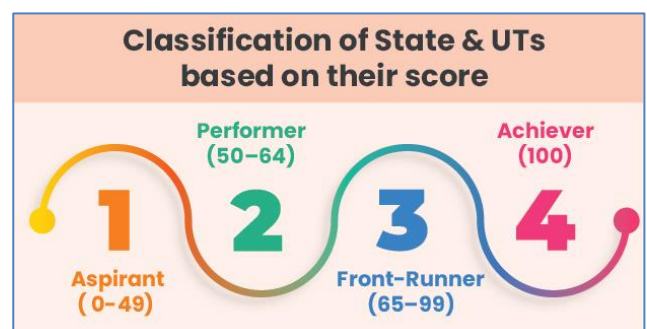
6.4. SDG INDIA INDEX 2021: NITI AAYOG

Why in news?

Recently, the third edition of the report titled **'Sustainable Development Goals (SDG) India Index and Dashboard 2020–21: Partnerships in the Decade of Action'** was released by NITI Aayog.

Key Findings of the report

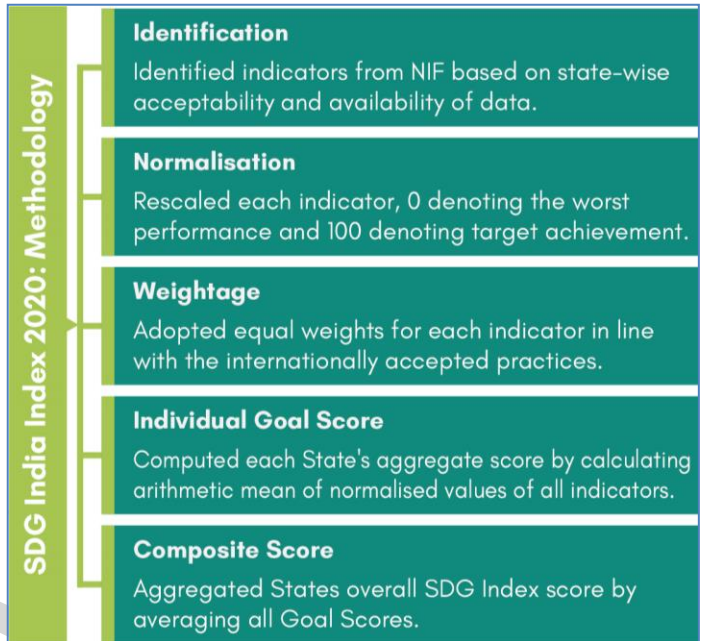
- India's **overall score across SDGs improved marginally from 60 in 2019 to 66 in 2021** on accounts of improvement in performance in providing facilities including clean water and sanitation (Goal 6), affordable and clean energy (Goal 7) among others.
 - However, there has been a **major decline in the areas of industry, innovation and infrastructure** as well as **decent work and economic growth**.
- **Kerala retains top rank** followed by Himachal Pradesh and Tamil Nadu while **Bihar is at bottom** followed by Jharkhand and Assam.



- Chandigarh maintained its top spot among the UTs followed by Delhi.
- Mizoram, Haryana, and Uttarakhand are the top gainers in 2020–21 in terms of improvement in score from 2019.
- In 2019, 10 states and UTs belonged to the category of Front-Runners while in 2021, 12 more states and UTs made it to the category.

What is SDG India Index?

- It was first launched by NITI Aayog in 2018. The index has become the primary tool for monitoring progress of India's states and its Union territories (UTs) towards the SDGs for 2030. It provides a holistic view on the social, economic and environmental status of the country and its States and UTs.
 - The Index for SDGs evaluates progress of states and Union Territories (UTs) on various parameters including health, education, gender, economic growth, institutions, climate change and environment.
- Methodology of SDG India Index:
 - The SDG India Index computes goal-wise scores on the 16 SDGs for each State and UT.
 - Overall State and UT scores are generated from goal-wise scores to measure aggregate performance of the sub-national unit based on its performance across the 16 SDGs.
 - ✓ These scores range between 0–100, and if a State/UT achieves a score of 100, it signifies it has achieved the 2030 targets.
 - ✓ The higher the score of a State/UT, the greater the distance to target achieved.



Significance of the Index

- The index is developed in collaboration with the United Nations in India.
- It has fostered competition among the states and UTs by ranking them on the global goals.
- It tracks the progress of all states and UTs on 115 indicators aligned with the National Indicator Framework (NIF) of the Ministry of Statistics and Programme Implementation (MoSPI).
 - NIF aims to give appropriate direction to the policy makers and the implementers of various schemes and programs.
 - The 115 indicators incorporate 16 out of 17 SDGs, with a qualitative assessment on Goal 17, and cover 70 SDG targets.
- The index is a key tool for focused policy dialogue, formulation, and implementation through development actions, in line with the global SDG framework.
- It helps in identifying crucial gaps related to tracking the SDGs and the need for India to develop its statistical systems.

Global Ranking of India vis-à-vis SDGs

I. Sustainable Development Report 2021 (Sustainable Development Solutions Network (SDSN))

- It ranked all the UN member states based on their performance against the 17 SDGs.
- India is ranked at 120th out of 165 countries with a country score of 60.1
- SDSN was set up in 2012 under the aegis of the UN Secretary-General and mobilizes global scientific and technological expertise to promote practical solutions for sustainable development, including the implementation of SDGs.

II. State of India's Environment Report 2021 (Centre for Science and Environment (CSE))

- India's rank has slipped by two places from 2020 to 117 on the 17 SDGs.
- India ranked below four South Asian countries — Bhutan, Nepal, Sri Lanka, and Bangladesh.
- Overall SDG score of India is 61.9 out of 100.
- CSE is a public interest research and advocacy organisation based in New Delhi.



Limitations of the Index

- The Index does not measure indicators of SDG 17 owing to the unavailability of suitable data at the State/UT level. However, a qualitative assessment of the progress under SDG 17 has been included.
- The full set of the NIF could not be included due to the unavailability of data at the State/UT level.

- The indicators and **data from State/UT statistical systems and non-government sources have not been included.**
- **For some indicators, data for all States/UTs are not available.** In computing the Index, 'Null' has been assigned to these States/ UTs and they have not been included in the computation.

Conclusion

SDG India Index and Dashboard represents efforts in encouraging evidence-based policymaking by supporting States and UTs to benchmark their progress, identify the priority areas and share good practice. It throws light on how collaborative initiatives can result in better outcomes and greater impacts and serves as a holistic framework to measure the absolute as well as relative progress of the country in achieving the SDGs.

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7. SCIENCE AND TECHNOLOGY

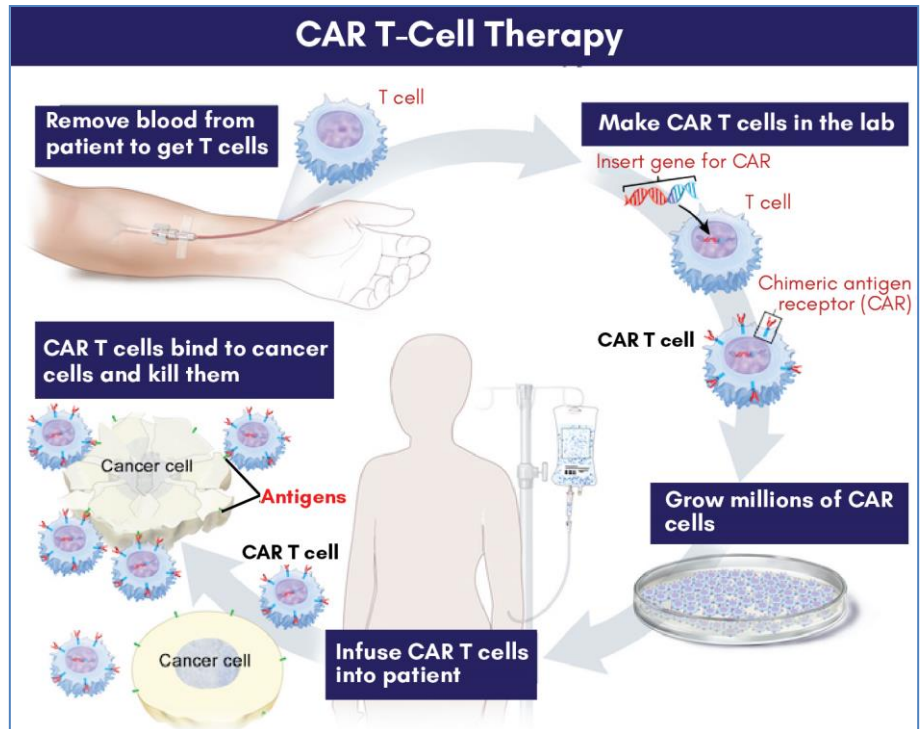
7.1. GENOME EDITING

Why in News?

Recently, Department of Biotechnology supported First Chimeric Antigen Receptor T-cell (CAR-T) therapy was conducted.

About Chimeric Antigen Receptor T-cell (CAR-T) therapy

- It is a way to get immune cells called T cells (a type of white blood cell) to fight cancer by editing them in the lab so they can find and destroy cancer cells.
 - T cells are taken from the patient's blood and are changed in the lab by adding a gene for a man-made receptor (called CAR).
 - This helps them better identify specific cancer cell antigens. The CAR T cells are then given back to the patient.
- It is also sometimes talked about as a type of cell-based gene editing, because it involves altering the genes inside T cells to help them attack the cancer.
- In order to promote and support development of CAR-T cell technology, BIRAC and DBT have taken initiatives in the last 2 years.



What is gene editing?

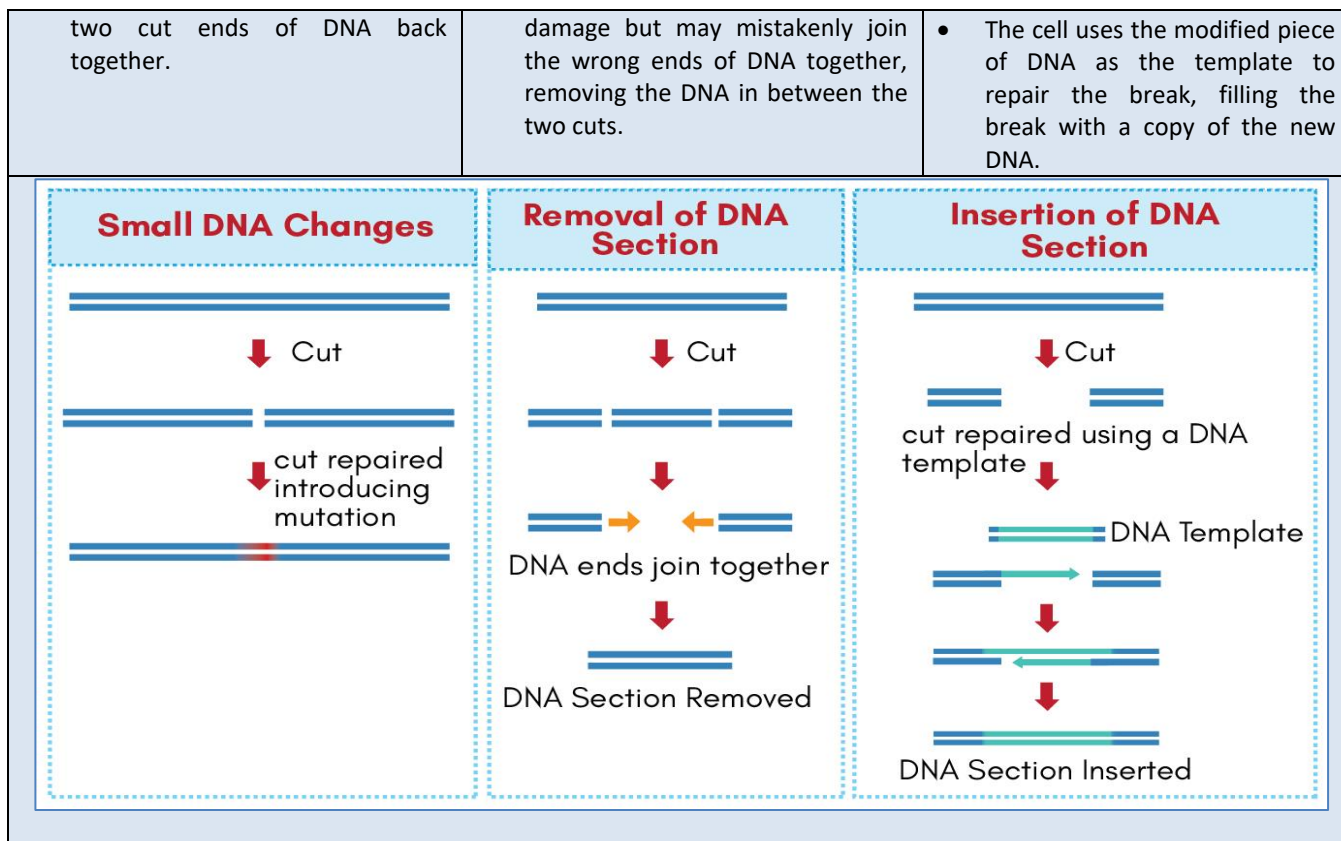
- Genome (or gene) editing is a way of making specific changes to the DNA of a cell or organism. This allows genetic material to be added, removed, or altered at particular locations in the genome.
- It is a three-stage complex mechanism of unwinding, cleaving and rewinding of DNA to bring desirable changes in the genome of any living beings.
 - Cleaving of the DNA includes editing of genes (cut paste of the DNA).
- By editing the genome, the characteristics of a cell or an organism can be changed.

How does it work?

- Genome editing uses a type of enzyme called an 'engineered nuclease' which cuts the genome in a specific place.
 - Engineered nucleases are made up of two parts:** A nuclease part that cuts the DNA and a DNA-targeting part that is designed to guide the nuclease to a specific sequence of DNA.
- After cutting the DNA in a specific place, the cell will naturally repair the cut.
- This repair process can be manipulated to make changes (or 'edits') to the DNA in that location in the genome.

Types of Genome editing

Small DNA changes	Removal of a section of DNA	Insertion of section of DNA
<ul style="list-style-type: none"> A nuclease enzyme is engineered to cut at a specific location in the DNA. After cutting the DNA with the engineered nuclease, the cell's normal DNA repair machinery will recognise the damage and join the 	<ul style="list-style-type: none"> Nucleases are engineered that make cuts in the DNA either side of the section that we want to remove. After the engineered nucleases cut the DNA, the cell's normal DNA repair machinery will recognise the 	<ul style="list-style-type: none"> A nuclease enzyme is engineered to cut at a specific location in the DNA. After the DNA has been cut, a modified piece of DNA similar in sequence to the site of the cut is introduced.



Techniques used for Genome editing

- They mainly **differ in how they recognise the DNA to cut.**
 - Protein based:** contain a protein that recognises and binds to the target DNA to be cut.
 - RNA based:** contain a short sequence of RNA that binds to the target DNA to be cut.
- Based on this there are several techniques:**
 - CRISPR-Cas9:** One of the most common, cheap and efficient system used for genome editing.
 - ✓ CRISPR is the DNA-targeting part of the system which consists of an RNA molecule, or 'guide', designed to bind to specific DNA bases through complementary base-pairing.
 - ✓ Cas9 stands for CRISPR-associated protein 9, and is the nuclease part that cuts the DNA.
 - ✓ Emmanuelle Charpentier and Jennifer A. Doudna were awarded Nobel Prize in Chemistry (2020) **for discovering the CRISPR-Cas9 genetic scissors.**
 - ZFNs (zinc-finger nucleases)**
 - ✓ DNA-binding part of ZFNs is made of zinc-finger proteins, with each binding to about three DNA bases.
 - ✓ The nuclease part of ZFNs is normally a FokI nuclease, which cuts the DNA.
 - TALENs (Transcription activator-like effector nucleases)**
 - ✓ DNA-binding domain of TALENs is made of transcription activator-like effector (TALE) domains.
 - ✓ Like ZFNs, the nuclease part of TALENs is normally a FokI nuclease.

Situation in India

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

Advantage of genome editing

- For research:** Genome editing can be used to change the DNA in cells or organisms to understand their biology and how they work.
- To treat disease:** Genome editing has been used to modify human blood cells that are then put back into the body to treat conditions including leukaemia and AIDS.
- For biotechnology:** Genome editing has been used in agriculture to genetically modify crops to improve their yields and resistance to disease and drought, as well as to genetically modify cattle that don't have horns.

- **Therapeutic Cloning:** It is a process whereby embryonic cells are cloned to obtain biological organs for transplantation.

Concerns regarding genome editing

- **Ethical Dilemma:** Principal concern include the morality, the eugenics helping the fittest to survive, ongoing clinical debates about informed consent, religious debate, the possible rise of clones, designer babies, and possibly superhumans.
- **Safety concerns:** Slight changes made at the smallest cellular level may lead to unexpected results. What if we manage to wipe out particular disease only to introduce a brand new and even more dangerous one.
- Concerns are also raised against use of genetically modified crops for human consumption.
- **Potential loss to diversity:** Diversity in all species of animals is a key to evolution on earth. Genetically engineering our species will have a detrimental effect on genetic diversity.

Conclusion

The approaching **biotechnological revolution seems imminent and undeniable**. The pressing need, therefore demands a **harmonious and regulated translation of needed aspects of genome-editing-related technologies** for molecular medicine and other non-clinical crop and food industries.

This will need consensus in public opinion, debates among experts, involvement of biotechnologists, opinions of bioethical experts, regulatory frameworks within legislatures, and final guidelines and oversight for the finally allowed limited application.

7.2. LIDAR SURVEY REPORTS

Why in News?

Recently, Ministry of Environment, Forest and Climate Change released LiDAR (light detection and ranging) based reports mapping out the water requirement within forest areas in 10 states.

More on News

- **Project, which was awarded to WAPCOS**, a public sector unit under the Ministry of Jal Shakti ministry, is a first of its kind and a unique experiment using LiDAR technology.
- Surveys were carried out at forest areas in **Assam, Bihar, Chhatisgarh, Goa, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Nagaland, and Tripura**.
- WAPCOS followed the **Ridge to Valley approach of watershed management** for this survey.
- WAPCOS and State Forest Departments **identified one major ridge inside a forest block in these states** with average area of 10,000 ha selected in each State.
- **LiDAR technology was used to create 3-D images** of the project areas to recommend soil and water conservation structures.
- State forest departments **will use Compensatory Afforestation Fund Management and Planning Authority (CAMPA) funds** towards implementation of these projects.
 - CAMPA are meant **to promote afforestation and regeneration activities** as a way of compensating for forest land diverted to non-forest uses.
- The survey would help in:
 - **identifying areas which need groundwater recharge**
 - **reducing human-animal conflict by reducing water scarcity**

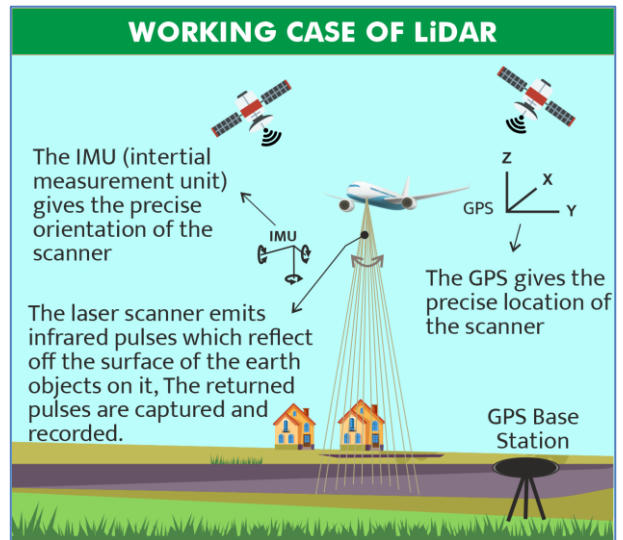
About Ridge to valley approach



- It seeks to **detain, divert, store and use available rainwater**.
- This allows **better management of water flowing from the ridge to the valley** and ensures conservation of rainwater, which in turn, bring agricultural and economic stability.
- This approach also helps in **strengthening the durability of soil and water conservation structures downstream**.
- **Case Study:** Ridge to valley approach addressed the problem of water scarcity in Kondamanayunipalem village of Anantapur district in Andhra Pradesh.


About LiDAR technology

- LiDAR is a **remote sensing technology** that uses light in the form of a pulsed laser to measure ranges (distances) to a target.

- These light pulses—combined with other data recorded by the airborne system— **generate precise, three-dimensional information about the shape of the Earth** and its surface characteristics.
- It is similar to **radar and sonar** (that use radio and sound waves, respectively).
- A lidar instrument principally consists of a **laser, a scanner, and a specialized GPS receiver**.
 - Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.
- **Two types of lidar are topographic and bathymetric.**
 - Topographic lidar typically uses a **near-infrared laser to map the land**.
 - Bathymetric lidar **uses water-penetrating green light to also measure seafloor and riverbed elevations**.
- Lidar systems allow **scientists and mapping professionals to examine both natural and manmade environments** with accuracy, precision, and flexibility.
- **Applications:** Land management and planning efforts, including hazard assessment, forestry, agriculture, geologic mapping, and watershed and river surveys etc.



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8. CULTURE

8.1. OFFICIAL LANGUAGE STATUS

Why in News?

Recently, various organisations initiated a campaign demanding official language status to Tulu in Karnataka and Kerala and include it in the eighth schedule of the Constitution.

What is an Official Language status?

- **Part XVII of the Indian Constitution** deals with the official language in Articles 343 to 351.
- **Article 345 of the Constitution** says that the Legislature of a State may by law adopt any one or more of the languages in use in the State or Hindi as the language or languages to be used for all or any of the official purposes of that State.
 - For example, Karnataka Official Language Act, 1963, provide for the adoption of **Kannada as the languages to be used for the official purposes** of the State of Karnataka.
 - It is provided that, until the Legislature of the State otherwise provides by law, the **English language shall continue to be used for those official purposes** within the State for which it was being used immediately before the commencement of this Constitution.

About Tulu language

- Tulu is a **Dravidian language** spoken mainly in two coastal districts **Dakshina Kannada and Udupi of Karnataka and Kasaragod district of Kerala**.
- As per the **2011 Census report, there are 18,46,427 Tulu-speaking people in India**.
- Some scholars suggest Tulu is among the earliest Dravidian languages with a **history of 2000 years**.
- **Robert Caldwell (1814-1891), in his book, A Comparative Grammar of the Dravidian or South-Indian Family of Languages**, called Tulu as 'one of the most highly developed languages of the Dravidian family'.
- According to the **Atlas of the World's Languages in Danger, published by UNESCO**, Tulu is now considered a vulnerable language.
- Tulu has a **rich oral literature tradition with folk-song forms like paddana, and traditional folk theatre yakshagana**.
- Tulu also has an active tradition of cinema with around **5 to 7 Tulu language movies produced a year**.

Eighth Schedule of the constitution

- The Constitutional provisions relating to the **Eighth Schedule occur in article 344(1) and 351 of the Constitution**.
- The Eighth Schedule was intended to promote the **progressive use of Hindi and for the enrichment and promotion of language**.
- **Eighth Schedule recognises that India is a multilingual country**.
 - However, it excludes large number of languages on non-linguistic grounds like **absence of script, written literature and print media**.
- The **Constitution does not mention any qualifying criterion for a language to be included** in the Eighth Schedule.
 - When the **National Commission for Linguistic Minorities (NCLM)** recommends the inclusion of any language, the Union government includes it through an amendment to the Constitution.
 - ✓ NCLM is responsible to investigate all matters relating to safeguards provided for the linguistic minorities and report to the President.
- Earlier in 2003, **Sitakant Mohapatra Committee was set up to evolve a set of objective criteria for inclusion of more languages in the Eighth Schedule** to the Constitution of India.
 - Committee submitted its report in 2004 which is still under consideration.

Yuelu Proclamation

- The Yuelu Proclamation is the first UNESCO document of its kind **dedicated to the protection of linguistic diversity, and is also an important supporting document for the "UN International Year of Indigenous Languages 2019"**.
- It says that the protection and promotion of linguistic diversity **helps to improve social inclusion and partnerships**.
 - It helps to **reduce the gender and social inequality between different native speakers**.
- It calls upon the international community **to reach a consensus on the protection and promotion of linguistic diversity in the world**.

22 languages in Eighth Schedule

- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.

SIGNIFICANCE OF INCLUSION OF LANGUAGE IN EIGHTH SCHEDULE

Recognition

- When a language is included in the eighth schedule, it will become an official language.
- MPs and MLAs can converse in the language in state assemblies and parliament.

Certain specific privilege

- It becomes a modern Indian language. If spoken in a specific geographic region, it is called a regional language also.

Political

- The inclusion of language in the Eighth schedule gives **political recognition** to the people. Language is the most important tool of participation in the polity of the state.
For example, Bhoti desires inclusion in the schedule because it would be respecting the rights of the people of the entire region of Himalaya which is strategically sensitive and linked with security of India.

Literature and Creative Expression

- The Government and private literary bodies use the Eighth Schedule as a select list of languages for literary awards and other purposes.
- Sahitya Academy will start recognizing the language and the books of the language will be translated in other languages recognized in India.

Education

- National Education Policy 2020 states that there will be a major effort from both the Central and State governments to invest in large numbers of language teachers in all regional languages around the country, and, in particular, for all languages mentioned in the Eighth Schedule of the Constitution of India.
- The language and literacy development programmes undertaken in the nation become easily accessible to languages of the Schedule and not to others.

Competitive exam

- Candidates will be able to write the competitive exams like Civil Services Exams conducted at the All-India level in a scheduled language.

Conservation of Linguistic heritage

- It will lead to protection and promotion of linguistic diversity in the country. It ensures the protection of the cultural identity and dignity of indigenous people and safeguards their traditional heritage.

Conclusion

The Government is conscious of the sentiments and requirements for inclusion of other languages in the Eighth Schedule and examines the requests keeping in mind the sentiments and other considerations such as evolution of dialects into language, widespread use of a language etc. A **broad-minded and inclusive policy** of encouraging the development and use of all Indian languages as well as English, is the way ahead. Giving all the major languages spoken in India **equality of status** will ensure that there will be no unhealthy sentiment against any language. The issue of any one language community holding linguistic advantage over others needs to be addressed.

Consequences of non-inclusion of Languages in the Eighth Schedule

Threaten the diversity and Federalism of India

The rights of linguistic minorities are compromised

No cognisance of various languages leads to empowerment of a few and impoverishing and marginalising others by exclusion

Individual's political identity is hampered



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9. ETHICS

9.1. CUSTODIAL CRIMES: SHOULD HUMAN RIGHTS BE THE COST OF JUSTICE?

Introduction

Custodial crime is any form of torture or cruel, inhuman, or degrading treatment of the accused by the police, whether it occurs during investigation, interrogation or otherwise. As per the report of National Crime Records Bureau (NCRB), the number of deaths in police custody **between 2001 and 2018 was 1,727**. But only 810 cases were reported, 334 were charge-sheeted out of which just 26 policemen were convicted.

What are the motives and circumstances driving custodial crimes?

The primary motive for taking an accused into custody is to extract information which aids the investigation of the case. Thus, the objective of taking the accused into custody is centered around pursuance of justice. But this pursuance becomes morally inept due to following reasons-

- **Crude methods of interrogation:** The interrogation techniques at local level are still centered around intimidation of the accused which often boils down to violence.
- **Culture of torture and brutality:** Torture, along with violent behavior has become an integral part of the police culture all over the country. For instance, the tragic deaths of P. Jayaraj and J. Benicks, a father-son duo in Thoothukudi (Tamil Nadu) in police custody showcase how being in 'police custody' has become synonymous to 'brutality'.
- **Apathy of police administration towards the prisoners:** A significant number of accused in police custody die by suicide or by violence perpetrated by fellow inmates. This highlights the poor conditions of custody and administrative apathy towards needs and rights of accused.
- **Perception of guilty until proven innocent:** The treatment accorded to citizens accused of crime is similar to that given to citizens guilty of crime. This is not only true for the police administration but also at the societal level. This perception dehumanizes the accused for the police administration and hence absolves them of any potential guilt that they may experience.
- **Abuse of power for malicious intentions or personal reasons:** The culture of torture alongside poor enforcement of accountability measures at times result in abuse of power which is devoid of pursuance of Justice.

These issues are compounded by the internal issues faced by the police administration such as long-hours, political interference, and inadequate salaries. Further, it increases frustration and breeds disregard for rules and procedures within the system, leading to normalization of brutality and violence as a method for getting results.

How custodial crimes impact people and society?

Crimes happening in custody not only affect the accused but have an indirect impact on people and the societal fabric-

- **Betrayal of custodial trust:** Custodial crimes violate the trust that is bestowed by the society as a collective in the Criminal Justice System. The result of this is that society loses faith in the system. The problem is further compounded when the public servant abusing the power is not held accountable for the committed crime.
- **Development of a culture of fear from police administration:** The culture of violence instills fear in the minds of citizens towards police administration. The consequence of this development is that people avoid reporting of crimes and are fearful to ask for help. This indirectly worsens the law-and-order situation in the country.
- **Expanding the social divide in access to justice:** Majority of the people who are victims of custodial crime belong to lower socio-economic strata of society. This is because most of them are not aware of their rights and have limited access to social or financial resources. This perpetuates the idea that access to justice is a reserve of rich and powerful and holds no meaning for poor and weak strata of the society.

Custodial Crime: A void in application of Human Rights

The national and international framework of human rights accords several rights to accused including Right to Bail, Right to Free Legal Aid, Right against Handcuffing, Right against inhuman treatment by the police, Right against arbitrary arrest etc. But all these safeguards **are subject to enforcement, acknowledgement by the people in the system and awareness among the citizens.**

In the closed confines of police custody, the accused is at the mercy of the custodian i.e., the police administration. If the custodian does not acknowledge the human rights of the accused and the accused has limited awareness about these rights, it becomes extremely difficult to enforce them. Such a situation is not rare in India, resulting in compromised human rights situations in the custodial ecosystems.

Several efforts have been made in the form of creation of National Human Right Commission (NHRC) or amendments to the Criminal Procedure Code (CrPC). But given the limited resources at their disposal and the laxity in our Criminal Justice System, it becomes difficult to bring guilty public servants to book.

Justice Brande of the US Supreme Court emphasized “the Government is the most potent and omnipresent teacher that teaches the whole people by its example. If the Government becomes a law breaker, it breeds contempt for the law; it invites every man to become a law unto himself.” Such a situation cannot be allowed to arise in a civilized society.

What can be done to root out the issue of custodial crimes?

- **Addressing the culture of torture:** There have been efforts to counter the culture of torture by bringing about an Anti-torture law or adhering to the international covenants. But these laws will have to be accompanied by internal reforms within the administration and moving away from violence as an acceptable norm.
- **Creating deterrence:** Strengthening the already prevalent safeguards such as Section 176 of CrPC (which deals with serious crimes like rape, death within the custody) and giving more powers to watchdog agencies like National Human Rights Commission (NHRC).
- **Regular training and sensitization of ground-level officers:** They serve as the first point of contact and thus becomes important that they exhibit requisite emotional intelligence to balance pursuance of justice and respect of the human rights of the accused.
- **Creating awareness regarding human rights:** Awareness of ‘rights of the accused’ among citizens can drastically reduce the incidence of custodial crimes as it creates a channel of accountability towards the police administration.

Legal safeguards to protect the Rights of the accused		
Constitutional	Indian Penal Code (IPC) and Criminal Procedure Code (CrPC)	International Protection
<ul style="list-style-type: none"> • Article 20 which includes no punishment on ex-post-facto law, no double jeopardy and no self-incrimination. • Article 21 is a broad right which encompasses Right against inhuman treatment, solitary confinement etc. • Article 22 provides for prevention from arbitrary detention. 	<ul style="list-style-type: none"> • Section 330 and 331 of IPC: When a police officer voluntarily causes ‘hurt’ or ‘grievous hurt’ to extort confession. • Section 142 of IPC: Punishment for wrongful confinement. • Section 176(1) and 176 (1A) of CrPC: An enquiry has to be held by the Judicial Magistrate or the Metropolitan Magistrate when a person dies, disappears or rape is committed on any woman. 	<p>India has an obligation to fulfil or duly comply with certain International regulations, such as-</p> <ul style="list-style-type: none"> • International Covenant on Civil and Political Rights, 1966 (ICCPR) • Universal Declaration of Human Rights, 1948 (UDHR).

The core reason behind such a system is the idea that **perpetrators need to be punished for achieving justice.** This mindset drives and justifies the violence against the accused. To root out this problem completely, it becomes important that we as a society **move towards reformative justice** i.e., the perpetrators need reformation and not punishment for ensuring justice in the society. As Martin Luther King, Jr. once said- “Darkness cannot drive out darkness; only light can do that. Hate cannot drive out hate; only love can do that.”-

10. GOVERNMENT SCHEMES IN NEWS

10.1. JIYO PARSI SCHEME

Why in news?

Recently, during COVID19, Parsi community saw a record of 61 births assisted through the Jiyo Parsi Scheme.

Objectives	Salient Features
<ul style="list-style-type: none"> • To arrest the declining trend of Parsi population by adopting a scientific protocol and structured interventions. <ul style="list-style-type: none"> ○ The Total Fertility Rate (TFR) of the Parsi community has reached below 1, which means that on an average, a Parsi woman in her total child bearing age has less than 1 child (0.8). ○ 31% of Parsis are over the age of 60 years and more than 30% Parsis are “Never married”. • To stabilize Parsis population and increase the population of Parsis in India. 	<ul style="list-style-type: none"> • It is a Central Sector Scheme under Ministry of Minority Affairs launched in 2013. • The Scheme will be implemented by the Parzor Foundation with the help of the Bombay Parsi Panchayat (BPP) and through the organizations/societies/Anjumans and Panchayat of the community concerned in existence for not less than three years. • Target groups: The scheme is meant for only Parsi community. <ul style="list-style-type: none"> ○ Parsi married couples of childbearing ages who seek assistance. ○ Adults/young men/women/adolescent boys/girls for detection of diseases resulting with consent of parents/legal guardians. • The Scheme will have three components: <div style="margin-left: 20px;"> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 10px;"> <p>ADVOCACY</p> <ul style="list-style-type: none"> • Counseling for couples with infertility, marriage, family and elderly counseling, help desks and medical camps all over India • Development of website to capture population and other details of Parsi community and outreach programme. • Include Workshops on relationship management, parenting, drug awareness, self-image etc. </div> <div style="border: 1px solid blue; padding: 5px; margin-bottom: 10px;"> <p>HEALTH OF THE COMMUNITY</p> <ul style="list-style-type: none"> • This will cover creche/childcare support, senior citizen honorarium for childcare, assistance to elderly. • The creche/childcare support will be provided to the parents. </div> <div style="border: 1px solid green; padding: 5px;"> <p>MEDICAL ASSISTANCE</p> <ul style="list-style-type: none"> • Assisted Reproductive Technologies (ART) which includes In-Vitro Fertilization (IVF) and Intra Cytoplasmic Sperm Injection (ICSI) and other modes including surrogacy as medical assistance when required. • To deal with fertility issues, financial assistance would be provided for investigation and detection of infertility, counseling and fertility treatment to married couples after their fertility problem is medically detected. • It will be mandatory for the treating hospital to inform the entire treatment plan to the patient before any treatment is taken up and take their consent or his/her parents/legal guardians’ consent. </div> </div> • Transfer of Funds: Funds would be transferred electronically into bank account of Parzor Foundation. • Monitoring and Evaluation <ul style="list-style-type: none"> ○ Monitoring, Impact assessment and evaluation of the scheme would be carried out by the Ministry. ○ Monitoring through independent agencies will also be taken up.

11. NEWS IN SHORTS

11.1. DIGITAL MEDIA CONTENT REGULATORY COUNCIL (DMCRC)

- DMCRC has been created by the Indian Broadcasting and Digital Foundation (IBDF) as an **industry-led Self-Regulatory Body (SRB) for digital OTT platforms (over-the-top)**.
- It is formed as per the mandate of the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**.
- It is the **second-tier mechanism** (refer to the infographics) **at the appellate level** and is similar to Broadcast Content Complaint Council (BCCC).
 - The BCCC, is the **independent self-regulatory body for non-news general entertainment channels** set up by the Indian Broadcasting Foundation (IBF) in June 2011.

Three-Tier Grievance redressal Mechanism	
Ministry of I&B	Level III: Central Government Oversight
Self-regulating Bodies	Level II: Self-Regulation
Publishers	Level I: Grievance Redressal by Publisher

- It is **expected to create a credible, robust and practical code for content**, with an inclusive and fair governance structure.
- **Need for establishing DMCRC:** OTT Platforms have seen a substantial jump in their viewership base after the pandemic.
 - According to 'The PwC Global Entertainment & Media Outlook 2020-2024', the **Indian Media and Industry sector is expected to grow at a 10.1% (CAGR) compound annual growth rate to reach USD 55 billion by 2024**.
 - In terms of individual segment, market size as a percentage of total industry revenue, **OTT video is expected to see the largest gain and reach 5.2 per cent by 2024**.
- **Indian Broadcasting and Digital Foundation (IBDF)**
 - Recently, the Indian Broadcasting Foundation (IBF) was renamed as IBDF as it expands its purview to **bring the broadcasters and OTT platforms under one roof**.
 - The **IBF was established in 1999 and until now represented television broadcasting**. Its members provide channels and programmes that deliver about 90% of television viewership in India.

For more information, kindly refer to article on Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 February 2021 VisionIAS Current Affairs.

11.2. CABLE TELEVISION NETWORKS (AMENDMENT) RULES, 2021

- Centre has amended the Cable Television Network Rules **to provide statutory mechanism to redress citizen's grievances relating to content broadcast by television channels**.
 - Television media in India is governed under the **Cable Television Networks Regulation Act 1955**.
 - At present, there is an **institutional mechanism** by way of an **Inter-Ministerial Committee** to address the grievances of citizens relating to the violation of the Programme/Advertising Codes under the Rules, but it **does not have statutory backing**.
- Cable Television Networks (Amendment) Rules, 2021 **provides for a three-level grievance redressal mechanism**, similar to the complaint redressal structure under the new social media rules framed under the IT Act.

11.3. MINISTRY OF COMMUNICATIONS LIBERALIZED GUIDELINES FOR OTHER SERVICE PROVIDERS (OSPS)

- OSPs are entities providing **applications services, IT Enabled Services (ITES) or any kind of outsourcing services using telecom resources** (such as telemarketing, telebanking or telemedicine for various companies, banks or hospital chains).
 - India's IT- Business process management (BPM) industry **stands at US\$ 37.6 billion (2019-20) and has a potential for double-digit growth reaching up to \$55.5 billion by 2025**.
- Guideline aims to make India a **favourable destination for expansion of voice-related Business Process Outsourcing (BPO)** by offering greater ease of business and regulatory clarity and removing compliance burden.
 - New guidelines further liberalized measures already announced in November, 2020 including removal of registration requirement, providing provisions of Work-From-Home, Work-From-Anywhere in India to OSPs etc.
- **Significance of these reforms**
 - **Allow employees to opt for freelancing for more than one company** while working from home, thereby attracting more workers in the sector.

- Help in making IT services more **competitive globally**.
- MNCs will get attracted towards India as a **favorable destination and hence will lead to more FDIs**.



11.4. GOVERNMENT BAR RETIRED OFFICIALS FROM PUBLISHING SENSITIVE INFORMATION

- Department of personnel and training has **amended the Central Civil Services (Pension) Rules, 1972**. It barred officials to disclose sensitive information as it would **jeopardize the sovereignty and integrity of India**.
- Rules **prohibit retired officials in intelligence or security related organisations** (like Intelligence Bureau, National Security Guards, RAW etc.) **to publish any information related to their organisation** without clearance from the “head of the organisation”.
 - Head of the organisation will decide **whether the proposed material for publication is sensitive or non-sensitive, and whether it falls in the domain of the organization**.
 - In the earlier 2007 rules, permission was to be taken from the head of the department.
- **All employees would have to give an undertaking** to the head of organisation that they would not publish such **failing which pension can be “withheld or withdrawn”**.
- Rules, **however, don't apply** to officers of the Indian Administrative Service (IAS), Indian Police Service (IPS) and Indian Forest Service (IFoS) among others.

11.5. CENTRE APPROVES POLICY ON ARCHIVING, DECLASSIFICATION & COMPILATION OF WAR/OPERATIONS HISTORIES

- Requirement of having war histories written with clear cut policy on declassification was **recommended by Kargil Review Committee as well as N N Vohra Committee** in order to analyse lessons learnt and prevent future mistakes.
 - Such a policy would **provide authentic material for academic research and counter the unfounded rumours**.
- **Key features of new Policy**
 - **Responsibility for declassification rests with the respective organisations** as specified in the Public Record Act 1993 and Public Record Rules 1997.
 - **History Division** of Ministry of Defence (MoD) will be responsible **for coordination with various departments/organisations** while compiling, seeking approval and publishing of war/operations histories.
 - Policy mandates constitution of a **committee headed by Joint Secretary, MoD for compilation of war/ operations histories**.
 - ✓ War/operation histories **will be compiled within five years**.
 - **Records should ordinarily be declassified in 25 years**, but certain records could be available in the public domain sooner than that. The government will, however, continue to have discretionary power over withholding records it deems sensitive.
 - ✓ Records older than 25 years should be appraised by archival experts and transferred to the National Archives of India.

11.6. WORLD INVESTMENT REPORT 2021 BY THE UN CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD)

- **Key Findings of the report**
 - **Global FDI flows** have been severely hit by the pandemic and they **plunged by 35% in 2020 to USD 1 trillion**.
 - **Demand for digital infrastructure and services** led to higher values of greenfield FDI project announcements targeting the ICT industry, rising by more than 22% to USD 81 billion.
 - **India** received \$64 billion, the **5th largest recipient of FDI** in the world in 2020. **U.S. topped the ranking followed by China**.
 - ✓ FDI in India **increased by 27% from \$51 billion in 2019 to \$64 billion in 2020**,

pushed up by acquisitions in the information and communication technology (ICT) industry.

- ✓ Greenfield projects in India contracted by 19% to \$24 billion in 2020.

11.7. SEPARATE BUDGET HEADS FOR SC AND ST CATEGORIES UNDER MGNREGS

- The Centre has asked the States to **split wage payments** under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme into **separate categories for Scheduled Castes, Scheduled Tribes and others** from this financial year.
 - Under MGNREGA, **more than 50% of workers are women and almost 40% are SC/ST.**
 - Rationale behind the move could be to ensure **higher spending on these categories.**
- Analysis by National Campaign on Dalit Human Rights on the basis of **policy guidelines between 2014 and 2019** has found that
 - For SCs, **required amount between 2014-19 was Rs 6.2 lakh crore** while the government allocated only about half the required amount.
 - SCs comprise **about 16% of the total population**, but only **8% of the central sector schemes or centrally sponsored schemes** were allocated to this category.
 - For STs, the required allocation was **Rs 3.28 lakh crore**, and the actual government allocation was **Rs 2 lakh crore**, just **about 60% of the requirement.**
- **About MGNREGA:**
 - The MGNREGA Act 2005 provides a **legal guarantee** for at least **one hundred days** of employment in **every financial year to adult members** of any rural household willing to do **unskilled manual work at the statutory minimum wage.**

11.8. DEBT TO GDP RATIO

- It is the ratio of a country's **public debt to its gross domestic product (GDP)**. It indicates a country's ability to pay back its debts.
 - Public debt is total **liabilities of central government contracted against Consolidated Fund of India.**
- Union government's **debt soared to 58.8% of the GDP** in FY 21 from 51.6% a year ago.
 - This is due to economic contraction (caused by COVID-19) which forced the government to

borrow a record amount to meet a revenue shortfall.

- Fiscal Responsibility and Budget Management (FRBM) Act mandated **debt-to-GDP ratio of the Centre to be brought down to 40%** and that of states to 20% by 2024-25.

11.9. TAX INSPECTORS WITHOUT BORDERS (TIWB)

- **Bhutan's TIWB programme was launched** in partnership with India.
- It aims to aid Bhutan in **strengthening its tax administration** and focus of the programme will be in the area of **International Taxation and Transfer Pricing.**
- **TIWB is a joint initiative** of the United Nations Development Programme (UNDP) and the Organisation for Economic Cooperation and Development (OECD) to **enable sharing of tax audit knowledge and skills with tax administrations in developing countries.**

11.10. ITAT-E-DWAR

- It is an **e-filing portal of Income Tax Appellate Tribunal (ITAT) launched by Ministry of Law.**
 - It is larger narrative of transformation that the country is undergoing through digital medium.
 - **Enhance the accessibility, accountability and transparency** in the day to day working of the ITAT.
 - Result in **economization of the use of paper, savings in costs, and rationalization of the fixation of cases** leading to quicker disposal of cases.

11.11. MISSION INNOVATION-CLEANTECH EXCHANGE

- Recently, India launched **Mission Innovation (MI) - CleanTech Exchange** under the Innovation Platform of **Mission Innovation.**
 - It was launched virtually at the **Innovating to Net Zero Summit** hosted by **Chile** this year.
- **CleanTech Exchange is a global initiative to create a network of incubators** across member countries to accelerate clean energy innovation.
 - The network will **provide access to the expertise and market insights** needed to support new technologies to access new markets globally.

About Mission Innovation (MI)

- MI is an action-oriented global initiative to pioneer clean energy solutions through domestic innovation and international cooperation.
 - It consists of **24 countries and EU. India is a founding member.**

- The **first phase of Mission Innovation** was **launched along the Paris Climate Change Agreement** at the **2015 UN Climate Conference**.
- It has an **Innovation Platform** through which member countries can track innovation progress, exchange knowledge and work with investors, innovators and end-users to accelerate technologies to market.
- **Mission Innovation 2.0**, the second phase of MI, was also launched in the above summit. It aims to catalyze increased investment in clean energy research, development and demonstrations to deliver affordable clean energy solutions by 2030.
- This will accelerate progress towards the Paris Agreement goals.

11.12. AIM-ILEAP (INNOVATIVE LEADERSHIP FOR ENTREPRENEURIAL AGILITY AND PROFITABILITY) INITIATIVE

- Atal Innovation Mission (AIM) concludes first fintech cohort of 'AIM-iLEAP' as major step to **accelerate Tech Start-ups across India**.
 - AIM (by NITI Aayog) is a flagship initiative to **promote a culture of innovation and entrepreneurship in the country**.
- Objective of the AIM-iLEAP program is to **invite technology start-ups across a broad range of functions and present their solutions to the corporate leadership** and innovation team for enabling market access and industry partnerships.

11.13. ENFORCING CONTRACTS PORTAL

- The Enforcing Contracts Portal, launched by Department of Justice, aims to **promote ease of doing business and improve Contract Enforcement Regime** in country.
 - Portal is envisioned to be a comprehensive **source of information pertaining to legislative and policy reforms being undertaken** on "Enforcing Contracts" parameters (was ranked 163 in 2019 Ease of doing business (EoDB) rankings).
 - It will provide **easy access to latest information on commercial cases in Dedicated Commercial Courts** of Delhi, Mumbai, Bengaluru and Kolkata.
 - Portal to also provide **access to repository of commercial laws** for ready reference.

11.14. INDIA'S FIRST INTERNATIONAL MARITIME SERVICES CLUSTER (IMSC)

- **Gujarat Maritime Board will set up the first IMSC at GIFT City**.
 - GIFT City is India's only approved IFSC (International Financial Services Centre) located in Gandhinagar, Gujarat.
- IMSC will be developed as a **dedicated ecosystem comprising ports, shipping, logistics services providers and pertinent government regulators**, all present in the same geographic vicinity of GIFT City.
- It would help to **enhance competitiveness, ease of doing business and self-sufficiency** in the maritime sector.

11.15. GLOBAL CYBERSECURITY INDEX (GCI)

- **India is ranked 10th (among 194 countries)** in the GCI 2020 ahead of China and Pakistan.
- GCI is released by the **International Telecommunication Union (ITU)**, the United Nations (UN) agency for information and communication technologies (ICT).
 - The **ranking is based on five pillars**: legal measures, technical measures, capacity building measures, organisational measures and cooperation.
 - In the **Asia-Pacific region India secured the 4th spot**.
 - **US is ranked first**, followed by UK.

11.16. AGNI PRIME

- DRDO will soon test the new missile Agni Prime, **advanced version of the 'Agni-1' missile**.
- Agni Prime' is a **short-range (surface to a surface) ballistic missile** that will have a range of 1000 km to 1500 km and will have advanced features in agility and road mobility.
 - It can carry a payload of around 1,000 Kg or a nuclear warhead.
- The double stage missile **will be lighter and much sleeker than its predecessor 'Agni-1'**.
- Agni-1 is a short-range (surface to a surface) nuclear capable ballistic missile. It has a strike range of 700 km 1,200 km.

11.17. EXERCISES IN NEWS

- **Indo-Thai coordinated Patrol (Indo-Thai CORPAT)**: Indian Navy and Royal Thai Navy conducted the **31st edition of India-Thailand Coordinated Patrol** (Indo-Thai CORPAT) in the Andaman Sea.

- It is a **bi-annual exercise**, carried since **2005**, to **strengthen maritime links** between two nations and to keep the vital part of the Indian Ocean safe and secure for global trade.
- **IN – EUNAVFOR:** Indian Navy (IN) and European Union Naval Force (EUNAVFOR) will participate in the **maiden Joint Naval Exercise in the Gulf of Aden**.
 - Gulf of Aden also known as the Gulf of Berbera is a **deepwater gulf between Yemen to the north, the Arabian Sea to the east, Djibouti to the west, and Somalia to the south.**
- **Operation Sagar Aaraksha II:** Coordinated joint operation between India and Sri Lanka undertaken to respond to potential environmental danger due a major fire onboard the Chemical laden container vessel MV X-Press Pearl anchored off Colombo.

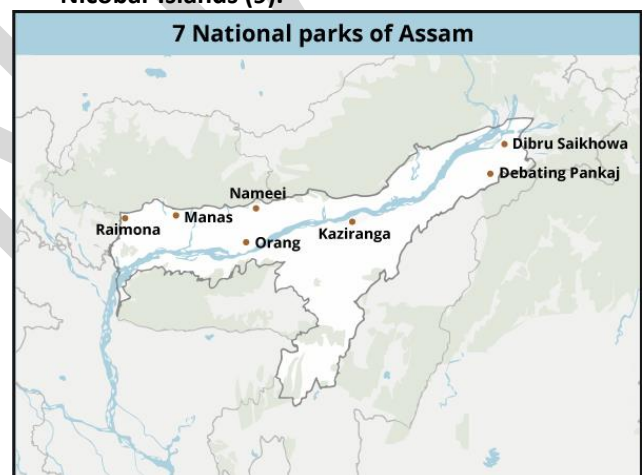
11.18. WORLD ENERGY INVESTMENT REPORT 2021

- It was released by **International Energy Agency (IEA)**. IEA was created in 1974 to help co-ordinate a collective response to major disruptions in the supply of oil.
- **Key findings**
 - In 2021, **annual global energy investment is set to rise to USD 1.9 trillion**, rebounding nearly 10% from 2020.
 - **Renewables will dominate investment** in new power generation and are **expected to account for 70% of 2021's total of USD 530 billion** spent on all new generation capacity.
 - Upstream investment in **oil and gas is expected to grow 10 percent.**
 - **Global emission is set to grow** by 1.5 billion tones.

11.19. DIHING PATKAI NATIONAL PARK

- The Assam government has notified **Dihing Patkai as the 7th National Park (NP)** of the state.
 - Under the **Wildlife Protection Act 1972**, both the **State (section 35) and Central (section 38) government can declare an area as National Park.**
- The Dihing Patkai NP **forms the “last remaining stretches” of the Assam Valley tropical wet evergreen forests.**
 - It is located across eastern Assam's Dibrugarh and Tinsukia districts.
 - It encompasses erstwhile **Dehing Patkai Wildlife Sanctuary, the Jeypore Reserve Forest** and the western block of the **Upper Dihing Reserve Forest** including stretches of the **Dirak and Buri Dihing rivers.**

- Besides being part of the **Dehing Patkai Elephant Reserve**, the park is home to important species like **Tiger, Chinese pangolin, Slow loris, Clouded leopard** etc.
- It also has the **highest concentration of the rare endangered White Winged Wood Duck.**
- Earlier, the State government has also notified **Raimona Reserve Forest (422-sq. km) as the 6th National Park** in western Assam's Kokrajhar district.
 - With **Phipsoo wildlife sanctuary in Bhutan to its north, Buxa tiger reserve in West Bengal to its west and Manas national park in Assam to its east.** It is home to the **Golden langur, Clouded leopard and Indian gaur.**
- Assam has **five older National Parks- Kaziranga, Manas, Nameri, Orang and Dibru-Saikhowa.**
 - Kaziranga and Manas are UNESCO World Heritage Sites. They are also tiger reserves along with Nameri and Orang.
- Assam (7) now has the **third most National Parks** after **Madhya Pradesh (12)** and **Andaman and Nicobar Islands (9).**



11.20. THE LEAF COALITION

- The LEAF Coalition was **launched by an initial group of governments** (Norway, UK, US) and leading **companies** (like Amazon, Nestle etc.) to **mobilise finance for protection of tropical forest.**
- The LEAF (**Lowering Emissions by Accelerating Forest finance**) coalition aims to mobilize at least **\$1 billion** in finance to support tropical and subtropical forest countries to **move rapidly towards reducing emissions from deforestation.**
- It is expected to become one of the largest public-private efforts that **support countries in achieving their Nationally Determined Contributions (NDCs) under the Paris Agreement and the Reducing Emissions from Deforestation and Forest Degradation (REDD+) mechanism.**
- Reductions in emissions are to be made through **programs that involve all key stakeholders, including Indigenous peoples and local communities.**

11.21. FOREST CARBON CREDIT STAMPS

- China has issued its **first batch of forest carbon credit stamps** to use **market mechanisms** to **reduce carbon emissions**.
- Forest carbon credits stamps are **permits for companies to emit a certain amount of carbon dioxide**. They are converted from added forest areas and the amount of carbon they can capture.
- These credits can also **serve as collateral for bank credit and loans**.
- The forest carbon credit system harbors great potential amid China's pursuit of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060.

11.22. GENETICALLY MODIFIED (GM) RUBBER

- Recently, **world's first GM rubber plant was planted in Assam**.
- GM rubber plant, which is the first of its kind **developed specifically for the northeast** and is expected to flourish in the region's climatic conditions.
- With **additional copies of the gene MnSOD** (manganese-containing superoxide dismutase) inserted in it, GM rubber plant is expected to **thrive over the severe cold conditions during winter** which is a major factor affecting the growth of young rubber plants.
 - **Natural rubber is a native of warm humid Amazon forests** and is not naturally suited for the colder conditions.
- It is developed by the Kerala-based **Rubber Research Institute of India**.

11.23. INDIA PLASTIC CHALLENGE – HACKATHON 2021 ANNOUNCED BY ENVIRONMENT MINISTRY

- It is a unique competition calling upon start-ups /entrepreneurs and students of Higher Education Institutions (HEIs) to develop innovative solutions **to mitigate plastic pollution and develop alternatives to single use plastics**.
 - Plastics that are **thrown away after their first use are known as single-use plastics**.
 - According to the United Nations, much of the plastics produced today are designed to be thrown away after first use.
- The Environment ministry had first notified **Plastic Waste Management Rules, 2016 with new provisions for effective and improved collection, segregation, processing, treatment and disposal of the plastic waste**.

- In March this year, MoEF&CC has unveiled the **draft Plastic Waste Management (Amendment) Rules, 2021** that proposes to ban several categories of **single-use plastic items** in three stages.
 - **Increasing the thickness of carry bags** made of virgin plastic **from 50 microns to 120 microns from 30 September 2021**.
 - **Ban on the manufacture, import, stocking, distribution, sale and use of specific single-use plastic from January 1, 2022**.
 - Ban on single use plastic items from **July 1, 2022**, increases which includes plates, cups, plastic/PVC banners less than 100 micron etc.

11.24. STATE OF FINANCE FOR NATURE REPORT

- It is a report jointly produced by the **United Nations Environment Programme, the World Economic Forum and the Economics of Land Degradation (ELD)**.
 - ELD, a global strategy for sustainable land management, is a **global initiative established in 2011 by United Nations Convention to Combat Desertification** supported by a broad network of partners across diverse fields of knowledge.
- Report highlights importance of investing in **nature-based solutions (NBS) to meet global biodiversity and land degradation targets**.
 - **NBS are actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits**.
- **Key findings of the report**
 - **More than half of the world's total GDP is moderately/highly dependent on nature. Agriculture, food and beverages and construction are the largest sectors dependent on nature.**
 - Approximately **USD 133 billion per year** currently flows into NBS (using 2020 as base year), with **public funds making up 86% and private finance 14%**.
 - Global biodiversity and land degradation targets can be met only if annual **investments in NBS are tripled by 2030** and increased four-fold by 2050 from the current level of investments.
 - Currently, Public sector spending for NBS is dominated by the **United States and China**, followed by **Japan, Germany and Australia**.
- **Suggestions provided by the report**
 - **Reforming taxes**, repurposed agricultural policies, trade-related tariffs and harnessing the potential of carbon markets could be used to create economic incentives to invest in NBS.

- Economic recovery post-Covid-19 should be **aligned with the Paris Agreement**, to be **consistent with 1.5°C warming above pre-industrial levels** as well as halting and reversing the loss of biodiversity.
- Number of commercially viable projects and businesses that incorporate NBS. into their business model should be increased through **technical support, economic and regulatory incentives**.
- **Availability of concessional finance needs to be scaled up** to accelerate the transition to “**net zero, nature positive**” sustainable agriculture, forestry and other forms of NBS.

11.25. UNITED NATIONS GLOBAL COMPACT'S CEO WATER MANDATE

- **NTPC Ltd has become a signatory** to the prestigious United Nations Global Compact's CEO Water Mandate.
 - The Mandate was **formed in 2007 to mobilize business leaders to advance water stewardship, sanitation, and the Sustainable Development Goals** in partnership with United Nations, governments, peers, civil society, and others.
 - The Mandate develops tools and resources, convenes stakeholders, and facilitates meaningful partnerships and on-the-ground collective actions that improve conditions in at-risk river basins around the world.

11.26. HEAT DOME IN NORTHERN AMERICA

- Heat dome is an **area of high pressure** that parks over a region like a lid on a pot, trapping heat.
 - They are more likely to **form during La Niña years like 2021**, when **waters are cool in the eastern Pacific and warm in the western Pacific**.
 - That temperature difference creates winds that blow dense, tropical, western air eastward.
 - Warm air gets trapped in the **jet stream—a current of air spinning counter-clockwise around the globe**—and ends up on the U.S. West Coast.

11.27. MAHSEER

The Blue-Finned Mahseer, which was on the International Union for Conservation of Nature's (IUCN) red list as '**critically endangered**', has now moved to the '**least concern**' status.

- The Mahseer (roughly translates as **mahi – fish and sher – tiger**, is also referred as “**tiger among fish**”). It is **important indicator** of freshwater ecosystems.

- Out of **47 subspecies** of Mahseer **15 are found in India** and rest in other range countries in South Asia.
- Mahseer **prefers clean, fast flowing and well oxygenated waters** for breeding and migration.
- They are **omnivorous**.
- **Threats faced:**
 - Sensitive to dissolved oxygen levels, water temperature and sudden climatic changes
 - Pollution, habitat loss, over-fishing, construction of dams (impacting migration patterns) etc.
 - Wildlife (Protection) Act 1972 **does not explicitly draw attention to fish** under the definition of 'wild animal'
- **Major Types of Mahseer**

Golden Mahseer	Found in the Himalayan streams and rivers. Its IUCN status is ' Endangered '.
Blue Fin / Deccan Mahseer	Found in rivers of Deccan Plateau and South India.
Red Finned Mahseer	Found in the rivers of central India.
Chocolate Mahseer	Found in the North Eastern region
Orange-Finned /Humpback Mahseer	Found in Cauvery River and its tributaries. IUCN status is ' Critically endangered '

Project Mahseer

- It was started in **1971** as a collaborative effort between **Tata Power and Central Institute of Fisheries Education**.
- Around **5 lakh mahseer** are bred at the **Walvan Hatchery in Lonavala, Maharashtra**. An artificial lake has been created for the purpose by the Walvan Dam project under Tata Power.
- The project has finally borne fruit after an effort spanning 50 years by getting the fish de-listed from Red list of IUCN.

11.28. BHARITALASUCHUS TAPANI

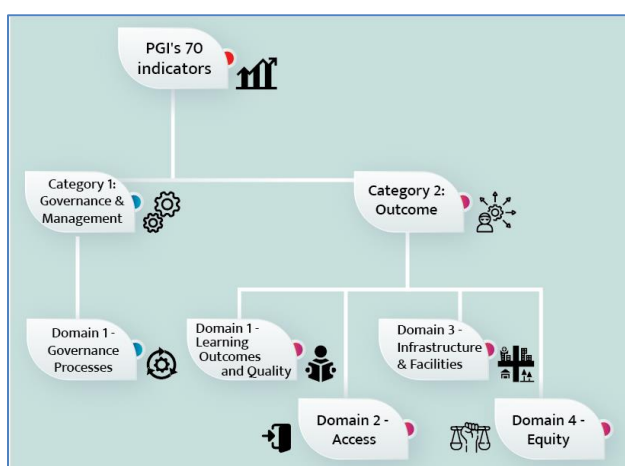
- It is a carnivorous reptile species that lived 240 million years ago and it might have been the **largest predators in that ecosystems**.
- It belongs to a **genus and species previously unknown called Bharitalasuchustapani**.
 - In Telugu, Bhari means huge, Tala means head, and Suchus is the name of the Egyptian crocodile-headed deity.
- Fossils have been found on the rocks of the **Yerrapalli Formation (Rock formation in the Pranhita–Godavari Basin in Telangana)**.

11.29. RELEASE OF PERFORMANCE GRADING INDEX (PGI) 2019-20

- The PGI (by Department of School Education and Literacy, Ministry of Education) comprises **70**

indicators to catalyse transformational change in the field of school education.

- These are classified in two categories with a **maximum score of 1,000**.
- It provides **grades to the states and Union territories**, as opposed to ranks.
 - **Grading**, by allowing several states and Union territories to be considered at the same level, **eliminates the phenomenon of one improving only at the cost of others**, which casts a stigma of underperformance on the latter.
 - It would also help them **pinpoint the gaps and accordingly prioritise areas for intervention** to ensure that the school education system is robust at every level.
 - **Punjab, Tamil Nadu, and Kerala topped** with Meghalaya and Ladakh at the bottom.



11.30. QUACQUARELLI SYMONDS (QS) WORLD UNIVERSITY RANKINGS (WUR)

- **IIT-Bombay, IIT-Delhi and Indian Institute of Science, Bengaluru**, were the only Indian institutions that made it to the top 200 of the global rankings.
 - Globally, **Massachusetts Institute of Technology was ranked number-one**, followed by the University of Oxford while Stanford University and the University of Cambridge shared the third spot.
- **QS uses six indicators to compile the ranking:** Academic reputation, employer reputation, citations per faculty, faculty/student ratio, international faculty ratio and international student ratio.

11.31. SURAKSHIT HUM SURAKSHIT TUM ABHIYAAN LAUNCHED IN 112 ASPIRATIONAL DISTRICTS

- The Abhiyaan (by NITI Aayog and Piramal Foundation) aims to **assist district administrations in providing home-care support to COVID-19**

patients who are asymptomatic or have mild symptoms.

- It is a **part of Aspirational Districts Collaborative** in which local leaders, civil societies and volunteers work with district administrations to address emerging problems across key focus areas of the Aspirational Districts Programme.
- Transformation of Aspirational Districts Programme (TADP) is a **major policy initiative to expeditiously improve the socio-economic status of 112 districts from across 26 states**.
 - Programme **focuses on the strength of each district, identify low-hanging fruits** for immediate improvement, measure progress rank districts.
 - ✓ It is driven primarily by the State govt.
 - Programme is **tracked by 49 indicators across 5 core thematic areas** that include Health & Nutrition (30%), Education (30%), Agriculture & Water Resources (20%), Financial Inclusion & Skill Development (10%), and Basic Infrastructure (10%).
- The three core principles of the programme are –
 - ✓ **Convergence** (of Central & State Schemes)
 - ✓ **Collaboration** (among citizens and functionaries of Central & State Governments including district teams)
 - ✓ **Competition** among districts

11.32. GLOBAL FOOD PRICE INDEX SOARS TO 10-YEAR PEAK

- UN Food and Agriculture Organization's (FAO) Food Price Index (FPI) **rose in May at their fastest monthly rate in a decade** even as world cereal production is on course to reach a new record high.
- FPI, **released by Food and Agriculture Organization (FAO)** is a measure of the **monthly change in international prices** of a basket of food commodities.
 - It consists of the average of five commodity group price indices - **cereals, oilseeds, dairy products, meat and sugar**, weighted with the average export shares of each of the groups.
- **Reasons underscoring such inflation includes**
 - **Renewed demand** in some countries and a backlog of **low production**.
 - Market and supply disruptions due to restrictions on movement have **created local shortages and higher prices**.
- **Impact**
 - Higher inflation will **hit poorer countries** reliant on imports for staple goods.
 - MNC giants such as Nestlé and Coca-Cola could **pass on increased prices of raw materials to consumers**.

11.33. BAN ON BLENDING OF MUSTARD OIL

- Food Safety and Standards Authority of India (FSSAI) has banned blending of mustard oil with any kind of edible oil from 2021.
- The Union health ministry had allowed blending in edible vegetable oil in a notification in 1990.
- In 1998, Delhi and other north Indian states witnessed the **dropsy epidemic** — a disease that caused swelling in the body due to the build-up of fluid in tissues.
- Later, investigation revealed **adulteration of mustard oil with Argemone Mexicana seed oil** to be cause of the disease.
- Thus, in 2006, FSSAI rolled out regulations for the blending of edible vegetable oil.
 - Producers and companies involved in blending were regularised through the **Agriculture Produce (Grading and Marking) Act (AGMARK)**.
 - It also made it mandatory to write the kind of oil used for blending over the packet.
- However, this blending led to an increase in dependency of India on imports of edible oil and also Stagnation of land under Mustard cultivation in last 25 years.
- **Expected benefits of the ban on blending**
 - As per the **Central Organisation for Oil Industry & Trade (COOIT)**, the ban will encourage mustard growers to **increase sowing area under mustard crop**. This will lead to **higher domestic production** of mustard oil and **fall in edible oil imports** in the long run.
 - The move also provides an opportunity for replacing traditional rapeseed-mustard oil varieties with Canola rapeseed-mustard to **provide a healthy oil for human consumption**.

Food Safety and Standards Authority of India (FSSAI)

- It is an autonomous statutory body established under the **Food Safety and Standards Act, 2006**.
- It works under administrative supervision of **Ministry of Health & Family Welfare**.
- It lays down **science based standards** to ensure **availability of safe and wholesome food** for human consumption.

Central Organisation for Oil Industry & Trade (COOIT)

- It was incorporated in 1952 as the **apex organisation** of the **entire vegetable oil and oilseeds sector in India**.
- It aims to **promote trade** in oilseeds, vegetable oils, oilcakes and allied products.
- It **organises scientific and technological development** and research in oil and oilseed industry.
- It recommends to Government **remedial measures to improve domestic edible oil situation** while framing policies related to the sector.

11.34. SENIORCARE AGEING GROWTH ENGINE (SAGE) INITIATIVE AND SAGE PORTAL TO SUPPORT INDIA'S ELDERLY LAUNCHED

- SAGE Initiative aims to **identify, evaluate, verify, aggregate, and deliver products, solutions and services directly to the stakeholders**.
 - It promotes the idea of **“silver economy”** by **developing residential and infrastructure facilities of different grades for seniors** through public-private partnership for a dignified and safe aging experience.
- The **SAGE portal will be a “one-stop access” of elderly care products and services by credible start-ups**.
 - The start-ups will be selected on the basis of innovative products and services, which they should be able to provide across sectors such as health, housing, care centres, apart from technological access.
 - The **Ministry of Social Justice & Empowerment will act as a facilitator**.
- **Need for SAGE initiative**
 - **Fastest Demographic Cohort:** India's elderly population is on the rise (7.5% in 2001 to almost 12.5% by 2026, and surpass 19.5% by 2050).
 - ✓ Globally, the proportion of people over 65 years of age was 10 percent in 2012 but it is expected to jump to 22 percent by 2050
 - **Other factor:** Rise in technology adoption, High Affordability & Assets, Nuclear Families & Mobility etc
- Well-being of **senior citizens is mandated in the Constitution of India under Article 41**.
- In order to ensure quality life for the senior citizens, the Government of India has endorsed various policies and programmes.
 - **Integrated Programme for Older Persons (IPOP)**
 - **National Programme for Health Care of the Elderly (NPHCE)**
 - **Maintenance and Welfare of Parents and Senior Citizens Act**
 - **Indira Gandhi National Old Age Pension Scheme (IGNOAPS)**
 - **Rashtriya Vayoshri Yojana (RVY)**
 - **Pradhan Mantri Vaya Vandana Yojana**

11.35. EXTENSION OF HOSPITALS' PROJECT

- Union Government has started project '**Extension of Hospitals'** in various states to **plug health infrastructure gap** in India's fight against COVID-19, especially in rural areas and smaller towns.

- Under this, modular hospitals are set up as an extension of hospital infrastructure and can be built adjacent to an existing hospital building.
- **Office of the Principal Scientific Adviser (PSA)** has invited private sector companies, donor organisations, and individuals to support the initiative.
- Also, **Modulus Housing**, a start-up incubated at **Indian Institute of Technology, Madras (IIT-M)** developed the **MediCAB hospitals**. This enables building a **100-bedded extension facility in 3-weeks' time**.
 - These portable hospitals have durability of around 25 years
 - They can also be shifted in the future for any disaster response in less than a week.

11.36. BIRTH, DEATH REGISTRATIONS UP IN 2019

- The **Office of the Registrar General of India** (Ministry of Home Affairs) brought out the **annual 'Vital Statistics of India Based on the Civil Registration System (CRS)' report**.
- CRS is the **unified process of continuous, permanent, compulsory and universal recording of vital events** (births, death, stillbirths) and characteristics thereof.
 - The **Registration of Births and Deaths Act, 1969** provides for the compulsory registration of births and deaths.
 - Births and deaths are registered **only at the place of their occurrence** within 21 days of occurrence of the event
- **Key Findings:**
 - **Level of birth and death registration increased** from 87.8% in 2018 to 92.7% in 2019 and 84.6% to 92% in 2019 respectively.
 - **14 States/Union Territories achieved 100% level of birth registrations** while 19 States/Union Territories achieved the same level in cases of death.
 - **Highest Sex ratio at birth** was reported by **Arunachal Pradesh (1,024)**, followed by Nagaland (1,001) and Mizoram (975). The **lowest SRB** was reported by **Gujarat (901)** followed by Assam (903) Madhya Pradesh (905), and Jammu & Kashmir (909).
 - ✓ **Sex ratio** is used to describe the number of females per 1000 of males.
- **Significance of CRS**
 - Records on CRS **provides citizens their legal identity and access to social entitlements;**
 - Data is useful for **medical research and in the study of sex ratio, mortality and morbidity rates** and also in the study of causes of deaths.
 - Helps in **socio-economic planning;**
 - **Evaluates effectiveness**

11.37. GLOBAL REPORT ON INTERNAL DISPLACEMENT (GRID) 2021

- The **Norwegian Refugee Council's Internal Displacement Monitoring Centre (IDMC)** has released **GRID 2021**. This year's report discusses the **relationship between climate change and disaster displacement**.
- **Key Findings of the report**
 - The **total number of internally displaced people (IDPs) across the world** has reached **55 million people**, out of which more people were displaced by conflict and violence, than by disasters.
- **Role of climate change in disaster displacement:** Climate change and increasing temperatures have proven to make certain hazards more frequent and intense. **Extreme weather events like floods, storms and droughts etc. were responsible for 98 per cent of all disaster displacement recorded in 2020.**
- The **Covid-19 pandemic** has **delayed humanitarian assistance** and **intensified the financial difficulties** of the displaced people

11.38. BIOTECH-KISAN EXTENDED TO NORTH EAST

- Under **Department of Biotechnology (DBT), Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)** is a **scientist-farmer partnership** scheme launched in 2017.
- Under the scheme, so far **146 Biotech-KISAN Hubs have been established** covering all 15 agroclimatic zones and 110 Aspirational Districts.
- **Significance of extension in NER -**
 - NER is **predominantly agrarian with 70% of workforce engaged in agriculture** and allied sector for livelihood.
 - **Region produces merely 1.5 % of country's food grain** and continues to be net importer of food grains even for domestic consumption.

11.39. EL SALVADOR APPROVES BITCOIN AS LEGAL TENDER

- El Salvador has **become the first country in the world to grant legal tender status to bitcoin**.
- **Bitcoin is a digital or virtual currency** created in 2009, allegedly by a Japanese entrepreneur named Satoshi Nakamoto.
- It **uses peer-to-peer technology**, with no central authority, **to facilitate instant payments**.
- Bitcoins are **created through a complex process known as "mining"**, and then monitored by a network of computers across the world.
- Bitcoin is the **first implementation of cryptocurrency concept**.

11.40. UNESCO SCIENCE REPORT 2021 "THE RACE AGAINST TIME FOR SMARTER DEVELOPMENT" RELEASED

- Report **monitors trends in science governance worldwide** and explores how countries are using science to realize a digitally and ecologically smart future.
- **Key highlights**
 - Development priorities have aligned over the past five years, with **countries of all income levels prioritizing their transition to digital and green economies.**
 - ✓ Yet, **eight out of ten countries still devote less than 1% of GDP to research**; they remain largely recipients of foreign scientific expertise and technology.
 - **India specific Findings**
 - ✓ Average gross domestic expenditure on research and development (GERD) over past two decades is **0.75% of GDP, lowest among BRICS** (Brazil, Russian Federation, India, China and South Africa).
 - ✓ **Number of start-ups is almost doubling each year since 2016** (17,390 start-ups in 2019), however most are in the services sector.
 - ✓ **Employability increased** from 34% in 2014 to almost 47% in 2019, meaning that **one out of two graduates is still not employable.**
 - ✓ As a share of total installed capacity for electricity generation, **green energy sources** (wind, solar, biofuels and small hydro-electricity generators) **rose from 13% in 2015 to 22% in 2018.**

11.41. SCIENCE AND ENGINEERING RESEARCH BOARD- FUND FOR INDUSTRIAL RESEARCH ENGAGEMENT (SERB-FIRE)

- It is a **research initiative launched by SERB** (statutory body of Department of Science and Technology) **in collaboration with Intel India.**
- FIRE is a joint government-and-industry initiative with a co-funding mechanism **to promote innovative technology solutions and strengthen academic research** through collaboration with key research and development (R&D) organisations in India.
 - The new initiative aims to utilize the expertise available in academic institutions and national laboratories **to solve industry-specific problems for the larger benefit of society.**

11.42. NANO UREA LIQUID

- Indian Farmers Fertiliser Cooperative Limited (IFFCO) has introduced the **world's first Nano Urea Liquid** for farmers across the world.
- **Nano Urea Liquid** is developed to **replace conventional Urea.** It can **curtail its requirement by at least 50%.**
- Its use will boost **balanced nutrition program** by reducing the **excess use of Urea application in the soil** and will make the crops **stronger, healthier and protect them from lodging effect.**

11.43. LIGO DETECTS NEW SOURCE OF GRAVITATIONAL WAVES FROM NEUTRON STAR - BLACK HOLE (NS- BH) COLLISION

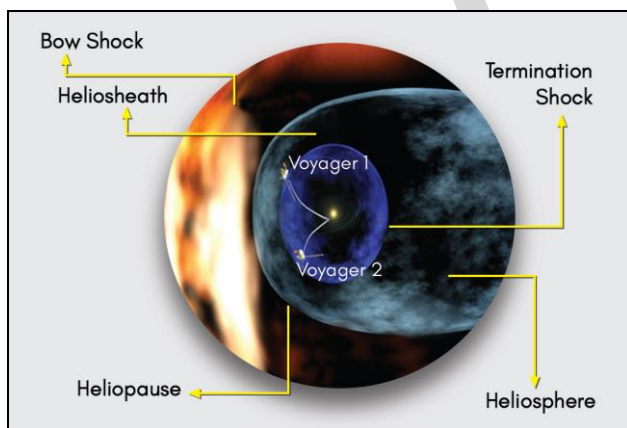
- Scientists have earlier **detected signals of colliding black holes, and colliding neutron stars**, but had not confirmed a merging of a black hole with a neutron star until now.
 - Neutron stars are formed when a massive star runs out of fuel and collapses.
 - The scientists report observing not just one, but **two such rare events**, each of which gave off gravitational waves (GW).
 - These were detected by the Laser Interferometer Gravitational-Wave Observatory (**LIGO**) in the **United States, and by Virgo in Italy.**
 - Technique used to detect the signal is called **matched filtering.**
- **Gravitational waves**
 - GWs are '**ripples**' in **space-time** travelling at speed of light caused by some of most violent and energetic processes in Universe.
 - They carry with them **information about their cataclysmic origins, as well as invaluable clues to nature of gravity itself.**
 - They are **created when**
 - ✓ objects move at very high speeds,
 - ✓ when a star explodes asymmetrically (called a supernova),
 - ✓ when two big stars orbit each other ,
 - ✓ when two black holes orbit each other and merge
 - **Albert Einstein predicted existence** of gravitational waves in 1916 in his general theory of relativity.
 - **GWs were first detected in 2015** by LIGO, located in US.
 - ✓ LIGO is world's largest gravitational wave observatory comprising of two enormous laser interferometers.
 - ✓ There are 3 LIGO's sisters' facilities: Virgo in Italy, GEO600 in Germany and KAGRA in Japan.

- ✓ Also there is LIGO-India- a planned Joint India-US detector at Hingoli District in Maharashtra.

11.44. HELIOSPHERE

Recently, scientists have mapped the boundary of the heliosphere for the first time.

- Scientists used data from NASA's Earth-orbiting **Interstellar Boundary Explorer (IBEX) satellite**, which detects particles that come from the **Heliosheath** - the boundary layer between the solar system and interstellar space.
- As sun's solar wind goes out in all directions and strikes **heliosheath**. This **generates energetic neutral atoms (ENAs)**, which are detected by IBEX.
- The developed map shows that the **minimum distance from the Sun to the heliopause is about 120 Astronomical Units (AU)** in the **direction facing the interstellar wind**, and in the **opposite direction**, it extends **at least 350 AU**. (1 AU = Distance between Earth and Sun).
- **About Heliosphere**
 - The sun sends out a **constant flow of charged particles** (protons, electrons, alpha particles etc.) **called the solar wind**, which ultimately travels past all the planets to some three times the distance to Pluto before being impeded by the interstellar medium.
 - This forms a giant bubble around the Sun and its planets called the **heliosphere**.



11.45. SPACE MISSION/INTIATIVES IN NEWS

- **EnVision**: is an **European Space Agency led mission to planet Venus**, with contributions from NASA. It is likely to be launched sometime in the 2030s.
 - It will study the **planet's atmosphere and surface, monitor trace gases in the atmosphere** and analyse its surface composition.
 - Venus is the **hottest planet in the solar system** because of the heat that is trapped by its thick cloud cover.

- **Venus spins** on its axis **from east to west**. Venus also **does not have a moon and no rings**.
- It is **called the Earth's twin** because of their similar sizes.
- **Polar-Areas Stellar-Imaging in Polarisation High-Accuracy Experiment (PASIPHAE)**: is an **international collaborative sky surveying project**.
 - Aim to study the **polarisation in the light coming from millions of stars**. It can help to determine a star's location.
 - A novel instrument, **Wide Area Linear Optical Polarimeter (WALOP)** will be used to detect polarised light signals emerging from the stars along high galactic latitudes.
- **Shenzhou-12 spacecraft**: China will launch **Shenzhou-12 spacecraft carrying 3 astronauts** to dock with the Tiangong space station.
 - China has already sent 11 astronauts into space since becoming the **third country to do so on its own in 2003**.
 - **US legislation bars Chinese astronauts on the International Space Station (ISS)**, a collaboration between US, Russia, Canada, Europe and Japan.

11.46. NATRAX- THE HIGH SPEED TRACK (HST)

- NATRAX is **Asia's longest and world's fifth longest HST** for automobiles.
 - HST is used for **measuring the maximum speed capability of high-end cars** like BMW, Mercedes, Audi, Ferrari, Lamborghini, Tesla and so forth.
- NATRAX centre (at Indore) has multiple test capabilities like **measurements of maximum speed, acceleration, constant speed fuel consumption, emission tests etc**.
 - Being centrally located in Madhya Pradesh, it is **accessible to most of the major Original Equipment Manufacturers (OEMs)**.

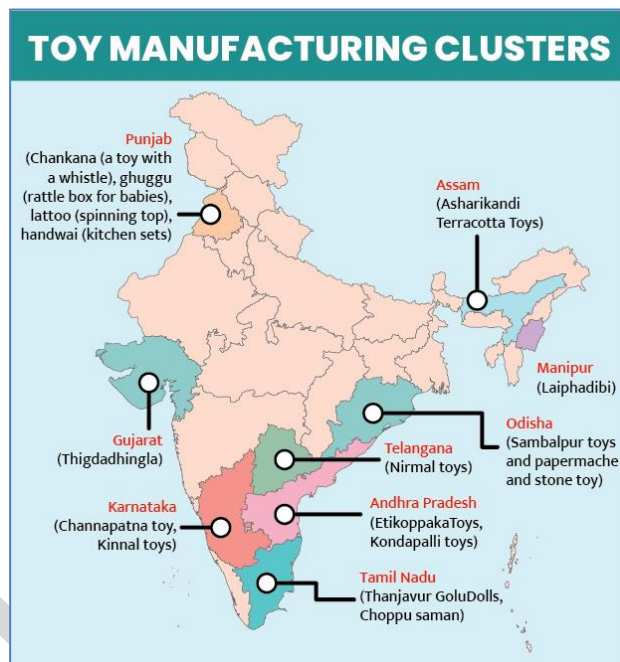
11.47. DISCOVERY OF 'DRAGON MAN' SKULL IN CHINA

- Scientists discovered **at least 140,000 years old massive fossilized skull** which is a new species of **ancient human**.
- Since new species are being considered to be **more closely related to humans than even Neanderthals** this could **fundamentally alter understanding of human evolution**.
 - The name is derived from **Long Jiang, which literally means "Dragon River."**
 - It forms a **third lineage of later humans alongside the Neanderthals and Homo sapiens**.

11.48. TOYCATHON 2021

- Toycathon focuses on conceptualizing new and innovative **toys using local materials which are economical, affordable, safe, environment friendly**, with exceptional high quality for both Indian and global markets.
 - Toycathon 2021 is being **organized by Ministry of Education** in coordination with five other Ministries.
- **Need to promote local toy industry**
 - Toys can help **connect the young minds with India's history and culture** which is helpful in social mental development and cultivation of Indian outlook.
 - India **imported around \$1.5 billion worth toys in 2020**, with China and Taiwan accounting for around 90% of domestic toy market.
 - Study by Quality Council of India (QCI) had revealed that **67% of imported toys failed a testing survey**, prompting an aggressive effort to produce safe toys locally.
- **Other initiatives taken to promote domestic toy industry**
 - **Approval to eight toy manufacturing clusters** for manufacturing toys made of wood, lac, palm leaves, bamboo and fabric.

- **National Action Plan for Indian Toy Story** to boost local manufacturing and incentivise toy and handicraft manufacturers.
- Under **National Education Policy 2020** toy-making will be introduced to students from the sixth standard onwards.



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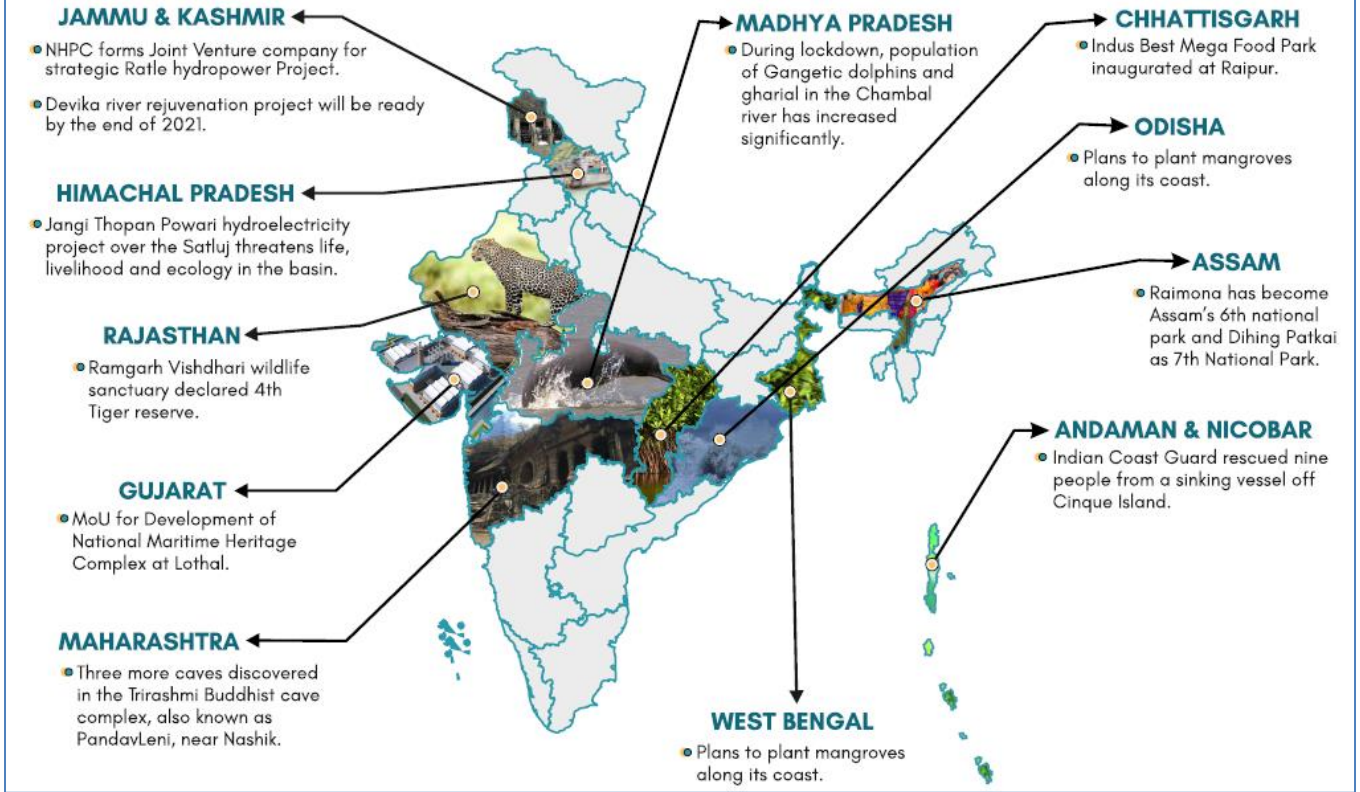
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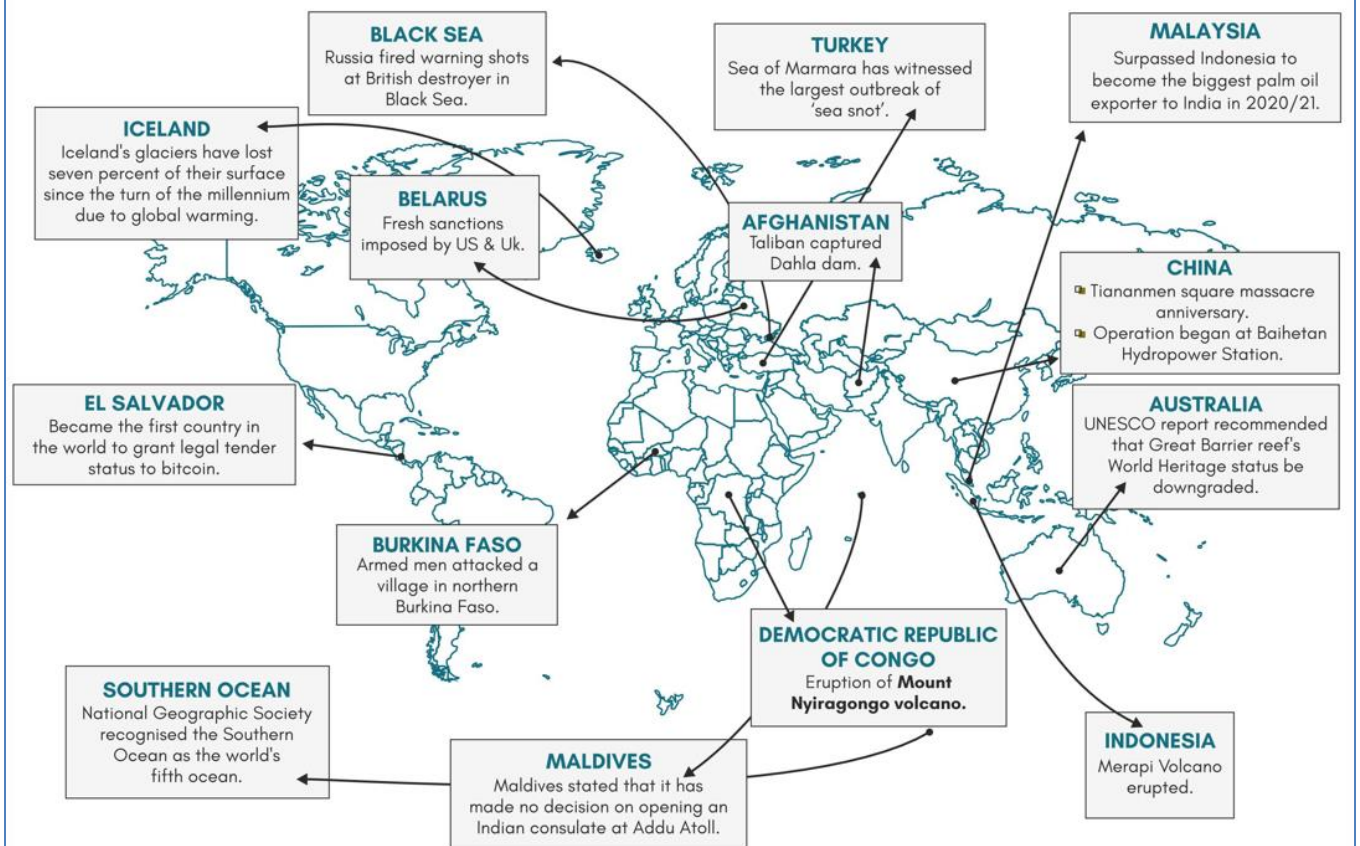
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Personalities in News

Personality	About	Ethical Values Exhibited by the personality
 <p>Kabir Das</p>	<ul style="list-style-type: none"> • Kabir was a famous poet, saint & social reformer. He was born in 1440. • He did not acknowledge distinctions based on caste & spoke against idol worship and criticised both Hindus and Muslims for their rites, rituals and customs. • He is a man known for, and by his poems. His poetry is a mixture of Hindi, Khari boli, Punjabi, Bhojpuri, Urdu, Persian and Marwari. • Kabir Das' writings had a great influence on the Bhakti movement and include titles like Kabir Granthawali, Anurag Sagar, Bijak, & Sakhi Granth. • Major part of his work was collected by the fifth Sikh guru-Guru Arjan Dev. 	<ul style="list-style-type: none"> • Social critique and dissent <ul style="list-style-type: none"> ▶ His work mainly consists of verses critiquing the social customs and existing values particularly caste and religious dogmatism. ▶ His poems highlighted the role of dissent as having political and ethical value which can lead to refinement of values in social life.
 <p>Rishi Bankim Chandra Chattopadhyay</p>	<ul style="list-style-type: none"> • Rishi Bankim Chandra Chattopadhyay <ul style="list-style-type: none"> □ He was one of the greatest novelists and poets of India. □ He wrote the first Indian novel in English, Rajmohan's Wife, and an economical exploration of the Bengali family. □ His novel Anandamath— which was set in the background of the Sanyashi Bidroho (rebellion of monks in late 18th century)— is considered to be one of key works on Bengal's nationalism. <ul style="list-style-type: none"> • Vande Mataram, the national song of India, was taken from Anandamath. □ Founded a monthly literary magazine, Bangadarshan, in 1872. □ Other popular works of fiction - Bishabriksha (The Poison Tree), Debi Choudhurani. 	<ul style="list-style-type: none"> • Critical thought and Patriotism <ul style="list-style-type: none"> ▶ He penned many novels depicting the injustice prevailing under British colonialism and criticising the system of dominance. ▶ Through literature, he ignited the light of literary enlightenment. ▶ He personified the nation into a mother Goddess image (Bharat Mata) which led to unification of patriotic thought towards the nation.
 <p>Jamsetji Tata</p>	<ul style="list-style-type: none"> • Recently, Jamsetji Tata has emerged as the biggest philanthropist globally in the last century as per the list of top 50-givers by Hurun Report and EdelGive Foundation. • Born on March 3, 1839, in the town of Navsari in Gujarat, he was the first child & only son of Nusserwanji Tata, the scion of a family of Parsee priests. • In 1868, Jamsetji started a trading company and made his move into textiles in 1869. • From about 1880 to his death in 1904, Jamsetji was consumed by what has to be the three great ideas of his life: <ul style="list-style-type: none"> □ Setting up an iron and steel company □ Generating hydroelectric power □ Creating a world-class educational institution that would tutor Indians in the sciences. 	<ul style="list-style-type: none"> • Leadership and Philanthropy <ul style="list-style-type: none"> ▶ He established the India's first commercial airline and through his hard work and diligence run the most prestigious and successful Industrial group in India. ▶ He helped establish Indian Institute of Science (IISc) in Bangalore and gave huge grant to establish London School of Economics (LSE).
 <p>Prasanta Chandra Mahalanobis</p>	<ul style="list-style-type: none"> • June 29 is celebrated as the National Statistics Day in recognition of his invaluable contribution in establishing the National Statistical System. <ul style="list-style-type: none"> □ He founded the Indian Statistical Institute, shaped the Planning Commission, and pioneered methodologies for large-scale surveys. □ India's second Five year Plan (1956-61), also called the Mahalanobis Plan focused on the development of public sector & rapid industrialisation. 	<ul style="list-style-type: none"> • Institution builder and Scholarship <ul style="list-style-type: none"> ▶ Due to his efforts and dedication, Indian Statistical Institute (ISI) was established and nurtured by him in the service of the nation. ▶ He was a brilliant statistician and a scientist whose scholarly contribution led to development of large scale surveys undertaken for policy making in India.
 <p>Ram Prasad Bismil</p>	<ul style="list-style-type: none"> • As part of the Azadi Ka Amrit Mahotsav, the Ministry of Culture held a special ceremony at Shahjahanpur in Uttar Pradesh, the birth place of Shaheed Ram Prasad Bismil to mark his birth anniversary (11 June). • Ram Prasad Bismil was an Indian revolutionary who fought against British colonialism. <ul style="list-style-type: none"> □ He formed the Hindustan Republican Association with leaders like Bhagat Singh and Chandrasekhar Azad. □ He participated in the Mainpuri conspiracy of 1918, and the Kakori conspiracy of 1925 with Ashfaq Ullah Khan and Roshan Singh to protest against the British Rule. 	<ul style="list-style-type: none"> • Leadership and Conviction <ul style="list-style-type: none"> ▶ He organized the youth for strengthening the voice against alien rule and founded the organization to give shape to their struggles. ▶ He not only participated in a highly dangerous plot to loot the arms from the Britishers but also sacrificed his life by not yielding to extreme torture and life threats.
 <p>PV Narasimha Rao</p>	<ul style="list-style-type: none"> • He was the 9th Prime Minister of India from 1991 to 1996. • Brought about the policy of economic liberalisation in India in 1991. • In terms of foreign policy, he established diplomatic relations with Israel. Look East Policy of India was also initiated during his tenure. 	<ul style="list-style-type: none"> • Leadership and Scholarship <ul style="list-style-type: none"> ▶ Under his leadership, the Government took a big step to liberalize the Indian economy on the lines of global trend and led the economy to higher growth trajectory. ▶ He was a distinguished scholar-intellectual who was fluent in six languages and translated books and wrote fiction stories in Hindi, Marathi and Telugu.
 <p>Milkha Singh</p>	<ul style="list-style-type: none"> • Milkha Singh died of COVID-19 complications. <ul style="list-style-type: none"> □ He was an Indian track and field sprinter famously known as The Flying Sikh. □ Only athlete to win gold at 400 metres at the Asian Games as well as the Commonwealth Games. □ First gold medallist at the Commonwealth Games from independent India. □ Awarded Padma Shri, India's fourth-highest civilian award in 1959. 	<ul style="list-style-type: none"> • Resilience and Passion <ul style="list-style-type: none"> ▶ Orphaned and displaced during the partition of India, Milkha faced every possible hardship during his adulthood to survive and be able to pursue his dream. ▶ He was so passionate about running that he won almost all the races he took part.
 <p>Dutee Chand</p>	<ul style="list-style-type: none"> • She signed on as a brand ambassador for a leading jewellery retail chain that has rolled out a campaign supporting the LGBTQ+ community. • Dutee Chand, the first openly gay athlete from India, scripted history in 2019 at the World Universiade in Naples when she became the first Indian to clinch gold in a 100m event at a global meet. • She also holds the national record in the women's 100m and is only the fifth Indian to participate in the women's 100 metres at the Olympics when she qualified for the 2016 Rio Games. 	<ul style="list-style-type: none"> • Will power and Courage <ul style="list-style-type: none"> ▶ Coming from a very humble family, she worked very hard to be a world class athlete and driven by the will power she overcome all challenges to re-start her passion. ▶ She took a bold decision to publicly declare herself being a gay and endorsed homosexuality in the Indian public space.

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 India vs Bharat: Is rural urban divide a reality or a metaphor?	The current debate on inequality and social cohesion has recognized growing differences in living standards between urban and rural areas. The existing disparity impacts the growth and development of the nation in myriad ways. This document discusses factors contributing to the urban-rural divide and the symbiotic relationship that exists between the two counterparts. Taking the discussion forward, it analyses whether India and Bharat can be reconciled for a better future.	
 Cryptocurrency: A tool of Economic Empowerment or a Regulatory Nightmare?	Cryptocurrency is having its best year yet in 2021; becoming more popular, mainstream, and accessible. But, is there a future for cryptocurrency in India? In what form cryptocurrency would be acceptable to Indian lawmakers and regulators remains to be seen. Discussing the basics of cryptocurrency, the document puts light on their role in economic empowerment of the masses and the path ahead to overcome the emerging regulatory challenges due to their increased usage.	
 Indigenisation of Defence Industry: From Necessity to Opportunity	As India inches to achieve its rightful strategic autonomy, it needs to do much more in planting the seeds for a commercially viable and technologically robust indigenous defence industrial base. Taking stock of India's efforts towards indigenous defence manufacturing, the document examines the gaps and suggests a way ahead to build an impregnable security architecture in the country.	
 Conserving The Forests: Save today, Survive Tomorrow	The intense global debate on sustainable development and sustainable management of natural resources puts the importance of forests for humanity at the centre of discussion. The emerging threats faced by forests calls for forming intense strategies for their conservation and sustainable management. This document discusses various strategies in practice in India and potential opportunities for future to achieve desired level of forest cover.	

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