

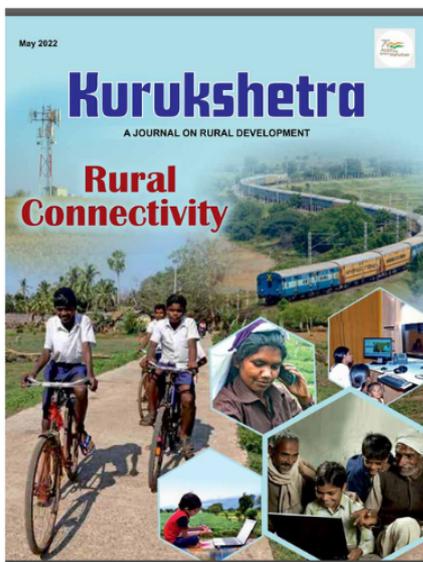
# OFFICERS' Pulse

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**Current Affairs Monthly**  
The **PULSE** of UPSC at your fingertips.

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## 1. Pockets of hope, linking nature and humanity

*(GS3: Conservation, environmental pollution and degradation, environmental impact assessment)*

### Context

- According to the **Global Assessment Report on Biodiversity and Ecosystem Services** released in 2019 by the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)**, the main global drivers of biodiversity loss are **climate change, invasive species, over-exploitation of natural resources, pollution and urbanisation**.
- Because of the collective excesses, **ecological carrying capacity of planet earth has largely been exceeded**.
- The trend needs to be redressed, with cleaner air, high quality drinking water, and enough food and healthy habitats to ensure that ecosystem services continue to benefit humanity without critically affecting nature's balance.

### Biosphere Reserves

- Biosphere reserves are places where **humans live in harmony with nature**, and where there is an effective combination of sustainable development and nature conservation.
- The **World Network of Biosphere Reserves** was created in **1971** by **UNESCO**. They represent pockets of hope and proof that the earth is not inexorably headed towards a doomsday ecological scenario, provided appropriate actions are taken.
- In South Asia, over **30 biosphere reserves** have been established. The first one was the Hurulu Biosphere Reserve in Sri Lanka, which was designated in 1977.

- In **India**, the **first biosphere reserve** was designated by UNESCO in 2000 within the blue mountains of the **Nilgiris**. It stretches across the **States of Tamil Nadu, Karnataka and Kerala**.
- The network has gone from strength to strength, and it now counts **12 sites**, with **Panna**, in the State of Madhya Pradesh, as the latest inscription in 2020.

### Harmony with Nature

- The **Khangchendzonga Biosphere Reserve (Sikkim)**, established in 2018, is a good model for people living and working in harmony with nature.
- It includes some of the highest ecosystems in the world, with elevations up to 8,586 metres. The reserve is home to orchids and rare plant species.
- At the same time, more than 35,000 people live there. Their main economic activities are crop production, animal husbandry, fishing, dairy products and poultry farming.

### Scientific Approach

- UNESCO Biosphere Reserves have all developed **science-based management plans**, where **local solutions for sustainable human living and nature conservation** are being tested and best practices applied. The aim is to detect changes and find solutions to increase climate resilience.
- All biosphere reserves are internationally recognised sites on land, at the coast, or in the oceans. Governments alone decide which areas to nominate.
- Before approval by UNESCO, the sites are externally examined. If approved, they will be managed based on an agreed plan, reinforced by routine checks to

ensure credibility, but **all remain under the sovereignty of their national government.**

- Some of the countries in South Asia do not yet have any or enough biosphere reserves. **More financial support** from richer nations and from the private sector would be desirable for establishing biosphere reserves in these countries.

### Conclusion

- If these pockets of hope can expand, with at least one biosphere reserve per country, and with more and larger sites covering the terrestrial surface, it will give the realisation to millions of people that a better future is truly possible, one where we can truly live in harmony with nature.

## 2. Increase in attack of cyberattacks

*(GS3: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money laundering and its prevention)*

### Context

- A recent ransomware attack targeting SpiceJet has brought focus on India's **cyber-vulnerabilities.**

### What are cyberattacks?

- A cyberattack is a **malicious and deliberate attempt** by an individual or organization to **breach the information system** of another individual or organization.

### Types of Cyberattacks

- **Malware:** It is a term used to describe malicious software, including spyware, ransomware, viruses, and worms. Malware breaches a network through a vulnerability, typically when a user clicks a dangerous link or email attachment that then installs risky

software. **Ex: WannaCry (ransomware), NotPetya (ransomware).**

- **Phishing:** It is the practice of sending fraudulent communications that appear to come from a reputable source, usually through email. The goal is to steal sensitive data like credit card and login information or to install malware on the victim's machine. Phishing is an increasingly common cyberthreat.
- **Man-in-the-middle (MitM) attacks:** Also known as **eavesdropping attacks**, it occurs when attackers insert themselves into a two-party transaction. Once the attackers interrupt the traffic, they can filter and steal data.
- **A denial-of-service attack:** It floods systems, servers, or networks with traffic to exhaust resources and bandwidth. As a result, the system is unable to fulfill legitimate requests. Attackers can also use multiple compromised devices to launch this attack. This is known as a distributed-denial-of-service (DDoS) attack.
- **A Structured Query Language (SQL) injection:** It occurs when an attacker inserts malicious code into a server that uses SQL (a standardized programming language) and forces the server to reveal information it normally would not. An attacker could carry out a SQL injection simply by submitting malicious code into a vulnerable website search box.
- **A zero-day exploit:** It hits after a network vulnerability is announced but before a patch or solution is implemented. Attackers target the disclosed vulnerability during this window of time. Zero-day vulnerability threat detection requires constant awareness.

## Background

- India has 780 million broadband users. This means millions of Indian websites gather sensitive data with the Unified Payments Interface (UPI) processing close to 5 billion transactions per month.
- Many of those apps and websites, and the databases at their back-end, are **insecure**.
- **India** is a favourite destination for digital bad actors. It is believed to be the **third-largest nation in terms of being the target of attacks**.
- According to the cybersecurity company Trellis, ransomware attacks targeting India jumped by 70 per cent year-on-year in the fourth quarter (January-March 2022). In a large majority of known cases, human error allowed initial entry and exploitation.
- In 2020, India has recorded 7 lakh cyber security incidents which is more than the combined data of the last 4 years.
- Around **71% of cyberattacks are financial related attacks** which is a primary concern for the country.

## How to make cyberspace safe?

- Companies must **secure data**, whether it's stored on the cloud or on their own servers. They should identify and firewall the sensitive parts of their networks from the customer-facing bits.
- Ensure access to the **sensitive parts is controlled by multi-factor authentication**.
- Ensure internal communications, and transactions with sensitive information are **end-to-end encrypted**. Firms also need to actively probe their own networks for possible vulnerabilities.
- The stakeholders in the Indian digital ecosystem need to **educate users and employees about**

**cybersecurity**. This has to be a cooperative process involving many private and government organisations, and it should be led by the **Indian Computer Emergency Response Team (CERT-In)**.

## Steps Taken to Deal with Cyber Crime and Cyber Security

- The Government has launched the online cybercrime reporting portal, **www.cybercrime.gov.in** to enable complainants to report complaints pertaining to Child Pornography/Child Sexual Abuse Material, rape/gang rape imageries or sexually explicit content.
- The Central Government has rolled out a scheme for establishment of **Indian Cyber Crime Coordination Centre (I4C)** to handle issues related to cybercrime in the country in a comprehensive and coordinated manner.
- Establishment of **National Critical Information Infrastructure Protection Centre (NCIIPC)** for protection of critical information infrastructure in the country.
- All organizations providing digital services have been mandated to report cyber security incidents to **CERT-In** expeditiously.
- Formulation of **Crisis Management Plan** for countering cyber attacks and cyber terrorism.
- Conducting regular training programmes for network / system administrators and Chief Information Security Officers (CISOs) of Government and critical sector organisations regarding securing the IT infrastructure and mitigating cyber attacks.
- The Government of India has established **CERT-in** as the nodal agency for coordination of all cyber security efforts, emergency responses, and crisis management.

- **Organising campaigns** on safe use of digital payment modes.

### Challenges faced in tackling Cyber crime

- **Lack of awareness** about the evolving technologies among the masses.
- **Absence of data privacy law** for protecting the data of Government, Business and Individuals who are key drivers for the country's development.
- Use of **offensive technologies and encrypted apps** by terrorists to spread fake news, hack the personal data etc.
- **Tracing fake propaganda accounts.**

### Way Forward

- The foremost thing which needs to be done is setting up **critical infrastructure** to ensure **open, secure, free, accessible & stable cyberspace.**
- Framing policies by identifying the **vulnerable points of contacts** in accordance with the National Cyber strategy 2020.
- It is crucial to ensure **integrity and security of products** involved in Cyber services.
- It is also necessary to **build awareness** among users as well as developers with regard to configuration of products.
- Setting up of an **apex body for coordinating** on various cyber space issues among the government and various agencies is the need of the hour.

### 3. Effect of poor governance on judiciary

*(GS2: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency &*

*accountability and institutional and other measures)*

### Context

- Chief Justice of India N V Ramana recently pointed out how poor governance is adding to the judiciary's woes.

### How does poor governance affect the judiciary?

- The **government accounts for half the pending cases in court.** Burgeoning dockets of land and revenue disputes are symptomatic of the fact that rural and urban bureaucracies are not functioning optimally.
- **Absurdity of fights** between government departments, or between state-owned companies and the government ending up in court.
- Wilful weakening of the processes of democratic functioning that result in the lack of thought-through legislation. The **paucity of public consultation**, whether within Parliament or among civil society, is evident in the growing number of appeals before courts.
- **Frequent ambiguities in laws** that end up in court for interpretation when the opinion of legal departments could just as well have been sought.
- Growing abdication of legislative responsibility by lawmakers has resulted in **laws being pushed through Parliament without adequate debate or consultation.**

### Challenges faced by Indian Judiciary

- India has **20 judges per million**, compared to 110 judges per million in the United States, 60 judges per million in Australia, and 170 judges per million in China.
- The figures in the **High Courts**, both in terms of pending cases and vacancies, are alarming: a backlog

of over 57 lakh cases and a vacancy rate of 40%.

- The **judiciary's vacancies are not being filled as quickly as they should be**. The entire number of judges in a country with a population of 135 million people is just approximately 25000. In the high courts, about 400 positions are empty, while in the lower judiciary, roughly 35% of positions are vacant.
- The **total number of cases pending** in India's various courts at all levels is estimated to be over **3.7 crores**, raising the demand for a better and more efficient judicial system.
- In 2010, Justice VB Rao of the Andhra Pradesh High Court calculated that clearing the backlog of 3.12 crore outstanding cases (at the time) in various courts would take **320 years**.
- The National Court Management, a Supreme Court study from 2012, looked at data on case pending and judge vacancies. The number of cases climbed by 12 times in the previous three decades, but the number of judges only increased by 6 folds.

#### Steps taken to improve the efficiency in Judiciary

- **SUPACE (Supreme Court Portal for Assistance in Courts Efficiency)** was launched last year to **assist judges with legal research**. It is a tool which uses AI mechanism to collect relevant facts and laws and makes them available to a judge. It is not designed to take decisions, but only to process facts and to make them available to judges looking for an input for a decision.
- **SUVAS (Supreme Court Vidhik Anuvaad Software)** is an AI system that can assist in the

**translation of judgments into regional languages**. The technology, when applied in the long run to solve other challenges of translation in filing of cases, will reduce the time taken to file a case and assist the court in becoming an independent, quick, and efficient system.

- The Indian government has already launched **e-courts**, and their reach has to increase more to solve the backlog of cases we deal with. As information will be available digitally, chances of misplacement of crucial statements, data or evidence will be greatly reduced.

#### Conclusion

- There is a need to debate Bills clause by clause and threadbare before enacting laws to minimise the scope for litigation.
- Deliberate inaction by governments despite judicial pronouncements is not healthy for democracy. One case in point is the states' failure to implement a 2014 Supreme Court directive to immediately release under-trial prisoners who have served half their term without the completion of their trial.

#### 4. Urban Employment Guarantee Scheme

*(GS2: Issues relating to poverty and hunger)*

##### Background

- A report on India's state of inequality was recently released by the **Prime Minister's Economic Advisory Council**. The report, prepared by the **Institute of Competitiveness**, provides a detailed examination of the existing disparities in society.
  - *Economic Advisory Council to the Prime Minister (EAC-PM) is a **non-constitutional, non-permanent and***

*independent body constituted to give advice on economic and related issues to the Government of India, specifically to the Prime Minister.*

- The report noted that the top 1 per cent of wage earners earn more than thrice as much as the bottom 10 per cent.
- Putting in place an **urban version of MGNREGA** and **providing a universal basic income** were among the recommendations made to address India's escalating inequality.

#### Urban employment guarantee scheme

- The idea to establish an urban job guarantee system comes amid the pandemic, highlighting the **precarious status of employees, particularly those operating in the informal economy in cities.**
- Not only would this give employment during times of crisis, but it would also function as a mechanism for swiftly moving funds during such times.
- This is a notion that has been tested in a number of states. The Rajasthan government has established the **Indira Gandhi Shahri Rozgar Guarantee Yojana**, a plan similar to MGNREGA for metropolitan areas.

#### Associated Challenges

- Such a programme may just **stimulate migration**, which, without accompanying infrastructure, will only put **further strain on these cities' deteriorating infrastructure.**
- Labour demand under the MGNREGA tends to follow the agricultural cycle. As a result, it has a seasonal character. However, there is **no such seasonality in labour demand or unemployment in metropolitan**

**regions**, making the creation of such a plan **more difficult.** Furthermore, many migrant workers are unlikely to possess the **necessary skills** for typical city positions.

- The **capacity of the urban municipal governments**, who are expected to be the implementing authorities, is **limited.**
- There's also the issue of how such a plan would be **funded at the national level.**

#### Way Forward

- The idea aims to address India's persistent employment and inequality problems. India's job problem, on the other hand, is **structural**, owing in part to the **lack of a labor-intensive manufacturing sector.**
- Economic policy should focus on **generating growth, reducing disparities in opportunity, enhancing access to education and health care, and creating avenues for upward mobility.**

## 5. GST and Cooperative federalism

*(GS2: Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein)*

#### Context

- The Supreme Court has announced that the **recommendations of the Goods and Services Tax (GST) Council are not binding on the Central and state governments.**

#### Highlights of the Ruling

- The Court pointed out that **Article 246A**, introduced through an amendment to the Constitution made in 2016, gives **both Parliament and State legislatures the power to make laws relating**

**to GST. The Constitution has not specifically mentioned that all GST Council decisions will become law.**

- The apex court held that the Parliament intended for the recommendations of the GST Council to only have a **persuasive value**, to foster cooperative federalism and harmony between the constituent units.
- The order has reminded the **States** that they **can reject decisions made by the GST Council** and set different rates for goods and services in their jurisdiction.

### GST Council

- To ensure that every State could play a part in decisions involving GST rates, exemptions, thresholds, relaxations and procedural issues, the **GST Council** was established in 2016 as a **constitutional body**.
- The GST Council is headed by the **Union Finance Minister** and includes all State Finance Ministers.
- Decisions in GSTC are taken by a **majority of not less than three-fourths of weighted votes cast**. The **Centre has one-third weightage** of the total votes cast, and **all the States taken together have two-thirds of the weightage** of the total votes cast.

### Way Forward

- The Centre might try to be more accommodative to states' concerns and fiscal difficulties.
- The **Council should meet more frequently** to keep the crucial fiscal federalism conversation moving in the right path and to reduce trust deficiencies.
- Even though the Court has stated that the GST Council is a **forum for political contestation as well as cooperative federalism**, statesmanship is required. The

Council should go beyond current political disputes.

- The **freedom to dissent** in the Council should be respected, and their voices should not be drowned out in the quest of unanimity in decision-making.
- On a variety of fronts, **cooperation between the Centre and states** is necessary at both the vertical (between the Centre and states) and horizontal (among states) levels. This involves fine-tuning developmental metrics for intended outcomes, policy decisions connected to development, welfare changes, administrative reforms, and strategic decisions, among other things.

### Conclusion

- The spirit of co-operative federalism is already entrenched in GST. The Court has not brought about any change to the law. The States and the Centre need to keep the spirit going to ensure that the GST system functions.
- Despite having a brute majority, the Centre should pay heed to the problems faced by States and suggest corrective measures, whenever possible. The States should also desist from making preposterous demands without considering the problems in Central Government finances.

## 6. The Importance of Emigrants

*(GS2: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora)*

### Context

- According to the **Ministry of External Affairs**, there are over **13.4 million Non-Resident Indians** worldwide.
- Of them, 64% live in the **Gulf Cooperation Council (GCC)**

**countries**, the highest being in the United Arab Emirates, followed by Saudi Arabia and Kuwait.

- *GCC is a political and economic union of Arab states bordering the Gulf. It was established in 1981 and its 6 members are the United Arab Emirates, Saudi Arabia, Qatar, Oman, Kuwait and Bahrain.*
- Almost 90% of the Indian migrants who live in GCC countries are **low- and semi-skilled workers**, as per International Labour Organization estimates.
- Other significant countries of destination for overseas Indians are **the U.S., the U.K., Australia, and Canada.**

### High Remittances

- Every year, about 2.5 million workers from India move to different parts of the world on employment visas.
- Besides being involved in **nation-building** of their destination countries, Indian migrant workers also **contribute to the homeland's socioeconomic development**, through **remittances**.
- According to a report by the **National Statistical Office**, urban and rural households receiving remittances (both international and domestic) have approximately 23% and 8% **better financial capacity**, respectively, than non-remittance-receiving households.
- As per a **World Bank Group report (2021)**, **annual remittances** transferred to India are estimated to be **\$87 billion**, which is the **highest in the world**, followed by China (\$53 billion), Mexico (\$53 billion).
- In 2021, remittances transferred to India had seen an **increase of 4.6%** compared to 2020. Remittances in

India have been **substantially higher than even Foreign Direct Investment (FDI)** and the flow of remittances is much **less fluctuating** than that of FDI.

- Still, remittances' contribution of **3% in GDP** is lower than that of countries such as Nepal (24.8%), Pakistan (12.6%), Sri Lanka (8.3%) and Bangladesh (6.5%), as per a World Bank report.

### Win-Win situation

- Besides being a win-win situation for both the destination and source country, labour migration is a **good hedging strategy against unsystematic risks for any economy.**
- **Human capital** should also be invested in a **diversified portfolio** akin to financial capital.
- For many countries, remittances have been of **vital support to the domestic economy after a shock.**
- For example, after the 2015 earthquake in Nepal, overseas Nepalese increased remittances to an estimated 30% of GDP.

### Measures taken by the government

- The **safety and well-being** of migrant labour is of top priority for the government.
- Reducing informal/undocumented migration and **formalising all remittances** is being given due focus.
- **Recruitment agencies should also be regulated** leveraging information technology for ensuring protection of migrant workers leaving India.
- An **integrated grievance redressal portal, 'Madad'**, was launched by the government in 2015.
- Of the approximately 78,000 grievances registered so far by the Indian migrants, more than **95% have been resolved.**

### Emigration Bill, 2021

- The Indian government has proposed a new Emigration Bill in 2021 which aims to **integrate emigration management and streamline the welfare of emigrant workers**.
- It proposes to modify the system of **Emigration Check Required (ECR) category of workers** applying for migration to 18 notified countries.
- The ECR category mainly comprises those who have **not passed Class 10** and face the challenge of risky informal emigration and subsequent hardships abroad.
- The Bill makes it **mandatory for all categories of workers to register** before departure to any country in the world to ensure better protection for them, support and safeguard in case of vulnerabilities.
- The proposed **Emigration Management Authority** will be the overarching authority to provide policy guidance.
- Provisions of the Bill such as registration of all emigrants, skill upgradation and training, and pre-departure orientation will **enhance protection measures**.
- Besides workers, as about **0.5 million students** also migrate for education from India every year, the Bill also covers such students.

### Way Forward

- The number of migrant workers need not go up for remittances to increase if the skill sets of workers are improved.
- **Skilling migrant workers** has the potential to **boost the domestic economy** and **low-cost interventions such as foreign language training** can be of great help for such.

## 7. Bill assent, a delay and the Governor's options

*(GS2: Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity)*

### Context

- Giving assent to a Bill passed by the legislature is a normal constitutional act performed by the Governor. But of late, even such normal acts have become a source of confrontation between State governments and the Governors.
- The conduct of Governors in certain States follows a definite pattern which causes a great deal of disquiet to elected governments as well as to those who have faith in the constitutional order.
- For instance: The Governor of Tamil Nadu returned the NEET Bill to the Assembly for reconsideration of the Bill. Accordingly, the Assembly held a special session, passed it again and presented it to the Governor for his assent. He has not assented to the Bill so far.

### On the advice of Ministers

- The Governor is an **appointee of the President**, which means the Union government.
- Although **Article 154(1)** of the Constitution vests in the Governor the **executive power of the State**, he is required to exercise that power in accordance with the Constitution.
- In other words, the Governor can act only on the **aid and advice of the Council of Ministers**.
- It is a settled constitutional position that the Governor is **only a constitutional head** and the **executive power of the State is exercised by the Council of Ministers**.

- The Supreme Court had clearly affirmed this position in the **Shamsher Singh vs State of Punjab (1974)**.
- In 2016, a **five-judge constitution Bench of the Supreme Court (Nabam Rebia case)** reaffirmed the position on the governors' powers in our constitutional setup.

#### Pathways Available

- **Article 200** of the Constitution provides for **four alternative courses of action** for a Governor when a Bill after being passed by the legislature is presented to him for his assent.
  - The Governor can **give his assent** straightaway or **withhold his assent**.
  - He may also **reserve it for the consideration of the President**, in which case the assent is given or withheld by the President.
  - The fourth option is to **return the Bill to the legislature** with the request that it may reconsider the Bill or any particular provision of the Bill. The Governor can also suggest any new amendment to the Bill.
- When such a message is received from the Governor, the legislature is required to **reconsider his recommendations quickly**.
- However, if the **legislature again passes the Bill** without accepting any of the amendments suggested by the Governor he is **constitutionally bound to give assent to the Bill**.

#### A Wrong View

- While it is true that **Article 200 does not lay down any time frame** for the Governor to take action under this Article, it is imperative on the part of the

Governor to exercise one of the options contained therein.

- A constitutional authority cannot circumvent a provision of the Constitution by taking advantage of an omission.
- The option mentioned in Article 200 is **meant to be exercised** by the Governor **without delay**.
- It is obvious that if the Governor does not exercise any of those options he will not be acting in conformity with the Constitution because **non-action is not an option contained in Article 200**.
- The words used in Article 200 **"...it shall be presented to the governor and the governor shall declare...."** indicates that the Constitution requires the Governor to **act without delay** upon the presentation of the Bill.

#### Undemocratic Process

- Giving assent to a Bill passed by the legislature is a **part of the legislative process** and not of the executive power.
- Besides, withholding assent to a Bill by the Governor, an appointee of the President, **neutralises the entire legislative exercise** by an elected legislature enjoying the support of the people.
- In the **United Kingdom** it is **unconstitutional for the monarch to refuse to assent to a Bill** passed by Parliament.
- Similarly, in **Australia**, refusal of assent to a Bill by the crown is considered **repugnant to the federal system**.

#### Conclusion

- In our constitutional system, the Governor or the President is **not personally responsible** for their acts. It is the elected government that is responsible.
- Under **Article 361**, the President or a Governor is **not answerable to**

**any court for anything done in the exercise and performance of their powers and duties.**

- But when a Governor does not take any decision on a Bill which is put up for his assent, he is not acting in exercise and performance of the duties cast upon him.

## **8. Funding woes haunt Indian science**

*(GS3: Science and Technology-developments and their applications and effects in everyday life)*

### **Context**

- With **very little participation from the private sector**, basic research in India is **primarily sustained by direct funding from the government**.
- Still, it remains static in India and hovers between a paltry **0.6 to 0.8% of GDP** over a decade, way below the United States, China, Japan, the European Union countries and South Korea.

### **India's R&D Expenditure**

- While **India's global R&D expenditure** remains static at **1-3% of the global total**, the U.S. and China accounted for 25% and 23%, respectively.
- This trend of under-funding is also reflected in the **low proportion of qualified researchers available in India**, considering its huge population.
- Compared to 111 in the U.S. and 423 in China, **India has only 15 researchers per 1,00,000 population**.
- The budgetary allocations over the last several years show a **consistent downward trend**. Much of the total of the funding available goes to DRDO, Department of Space and Atomic Energy, leaving only 30 to 40% for agencies such as Indian Council of

Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR), Department of Science and Technology (DST), Department of Biotechnology (DBT), Ministry of Earth Sciences (MoES) and Indian Council of Medical Research (ICMR).

### **National Research Foundation**

- The 2021-22 budget offered ₹10,000 crore (\$1.37 billion) every year starting from 2021, over the next five years, for a new funding agency called the **National Research Foundation (NRF)**.
- It is an **autonomous body** which is expected to **boost university science research**, as well as the **work in social sciences**.
- As most of the country's scientific research is being conducted by government laboratories and a few premier institutes, this new forum is thought to be a game-changer by its intent of **democratisation of the knowledge base**.

### **India's Potential**

- To unleash the fullest potential of Indian science, a **vibrant and responsive financial system** is required. Such a system should be **autonomous and more participatory**.
- India cannot aspire to be a global leader in scientific research if enough funds are not injected into basic research by committing to **raise the R&D spending to at least 1% of the GDP**.
- It is also important for the **private sector** to participate. But for that, the government should **incentivise the private players** by giving them tax breaks, etc.

### **Way Forward**

- There are a lot of cues to be obtained from China on how it managed to become a world leader in scientific research.

- For all this to achieve, a foremost requirement is a **dynamic R&D ecosystem**, which India lacks today.

## 9. Still a long way for termination as an unconditional right

*(GS2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections)*

### Context

- Under the general criminal law of the country, i.e. the **Indian Penal Code**, voluntarily causing a woman with child to miscarry is an offence attracting a jail term of up to three years or fine or both, unless it was done in good faith where the purpose was to save the life of the pregnant woman.
- A pregnant woman causing herself to miscarry is also an offender under this provision.

### Medical Termination of Pregnancy Act, 2021

- In **1971**, after a lot of deliberation, the **Medical Termination of Pregnancy (MTP) Act** was enacted.
- This law is an exception to the IPC provisions above and sets out the rules of when, who, where, why and by whom for accessing an MTP.
- This law has been amended twice since, the **most recent set of amendments being in 2021** which has, to some extent, **expanded the scope of the law**.
- However, the law **does not recognise** and/or acknowledge the **right of a pregnant person to decide on the discontinuation** of a pregnancy.

### Conditions mentioned in law

- The law provides for a set of reasons based on which an MTP can be accessed: the continuation of the pregnancy would **involve a risk to the life of the pregnant woman** or result in **grave injury** to her physical or mental health.
- The other set of limitations that the law provides is the **gestational age of the pregnancy**.
- The pregnancy can be terminated for any of the above reasons, in the opinion of a **single registered medical practitioner up to 20 weeks** of the gestational age.
- From **20 weeks up to 24 weeks**, the opinion of **two registered medical practitioners** is required.
- This **extended gestational limit** is applicable to **certain categories of women** which the rules define as either a survivor of sexual assault or rape or incest, minors, change of marital status during the ongoing pregnancy, i.e. either widowhood or divorce, women with major physical disabilities, mentally-ill women including mental retardation, the ground of foetal malformation incompatible with life or if the child is born it would be seriously handicapped, and women with pregnancy in humanitarian settings or disaster or emergency situations as declared by the government.
- The law, as an exception to all that is stated above, also provides that where it is immediately necessary to **save the life of the pregnant woman**, the pregnancy can be **terminated at any time** by a single registered medical practitioner.
- This is the exception and is understood to be resorted to only when the likelihood of the **pregnant woman dying is immediate**.

### Reasons explained in the law

- The law explains that if the pregnancy is as a result of rape or failure of contraceptive used by the pregnant woman or her partner to limit the number of children or to prevent a pregnancy, the anguish caused by the continuation of such a pregnancy would be considered to be a **grave injury to the mental health** of the pregnant woman.
- The other reason for seeking an MTP is the **substantial risk** that **if the child was born**, it would **suffer from any serious physical or mental abnormality**.

### Non-negotiable Right

- While India legalised access to abortion in certain circumstances much before most of the world did the same, unfortunately, even in 2020 we decided to remain in the logic of 1971.
- This, despite the fact that by the time the amendments to the MTP Act were tabled before the Lok Sabha in 2020, courts across the country (over the preceding four years) had seen close to 500 cases of pregnant women seeking permission to terminate their pregnancy.
- In a number of these cases, the courts had articulated the **right of a pregnant woman to decide on the continuation of her pregnancy as a part of her right to health and right to life**, and therefore **non-negotiable**.
- The landmark **Right to Privacy judgment** of the Supreme Court of India (2017) held that the **decision making by a pregnant person** on whether to continue a pregnancy or not is part of such a **person's right to privacy** as well and, therefore, the **right to life**.
- The standards set out in this judgment were not incorporated in the MTP Act, 2021.

### Conclusion

- While access to abortion has been available under the legal regime in the country, there is a long road ahead before it is **recognised as a right of a person** having the capacity to become pregnant to decide, **unconditionally**, whether a pregnancy is to be continued or not.

## 10. Delimitation fallout needs no political forecasting

*(GS2: Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure)*

### Context

- A delimitation of the constituencies that will elect Members of the Lok Sabha, following the population figures returned by the next decennial Census, is to take place in **2026**.
- The **higher the number of people per constituency, the lower the impact each voter has on parliamentary representation**.

### Constitutional Provisions

- The Constitution of India recognised this and provided for a **periodic, Census-linked re-arrangement of constituencies** to make their representation in Parliament tenable.
- A population-based marking out or re-arrangement of constituencies, as envisaged in **Article 82** of the Constitution, will have the effect of giving more MPs to the States and Union Territories that have let their numbers grow, and will give markedly less MPs to those that have held their numbers in some check.
- A **delimitation freeze** was put in position by Prime Minister Indira Gandhi through the **42nd Amendment** of the Constitution in **1976**.

- This was extended by Prime Minister Atal Bihari Vajpayee through the **84th Amendment**.

#### Data Prediction

- Considering the **Census data for 2011**, almost half (48.6%) of our population (of approximately 1.38 billion) is contributed by the States of Uttar Pradesh, Maharashtra, Bihar, West Bengal and Madhya Pradesh.
- Rearranging and standardising the number of people per constituency through the scheduled delimitation exercise will inevitably lead to a **reduced representation for States that have managed to stabilise their populations**, and to a **higher representation for States that have not stabilised their populations**.
- For instance: Uttar Pradesh's share in India's population would see an increase by 1.74 percentage points, Bihar's by 1.59 percentage points. Tamil Nadu's share in India's population would see a decline by 2.08 percentage points and Kerala's by 1.36 percentage points.

#### Alternative Methods

- There are **two alternatives** before us.
- One, we go in for **another freeze**, this time not for any specific period but for **until all States have achieved population stabilisation**.
- Two, we request demographic and statistical experts to devise a **mathematical model** along the lines of the **'Cambridge Compromise'** based on a mathematically equitable "formula" for the apportionment of the seats of the European Parliament between the member-states.
- However, such formula cannot be applied to our situation as such but

needs to be studied so as to customise it for our needs.

- Given the complications of the Indian demographic scene, and the distorting shadow that Census data may cast on the delimitation process, the **first option is the more persuasive one**.

#### Way Forward

- The population-stabilising states of India, which include **all the southern states**, must continue to enrich the legislative and parliamentary processes as they have been doing since the time of the Imperial Legislative Council, with **no penalties having to be paid for their sense of responsibility**.
- We need to **limit population, not representation**.

### 11. Diverse Millet Culture

*(GS3: Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security)*

#### Context

- Millets are a group of small seeded grasses used as cereals. The Indian sub-continent has had a rich heritage of growing them and until very recently millets formed a very large part of our food basket.

#### Millets & the Indian Sub-Continent

- Some of the millets have been grown for more than 2000-3000 years and we find references to them in our cultural & religious customs, songs and texts.
- Sadly, the production of millets has not been given much attention over the years and our agricultural policies have systematically encouraged production of wheat & rice at the cost of millets and coarse cereals.

- There is a **reduction in the total area under millet cultivation**. While in 1965-66 it stood at almost 37 million hectares, it was down to 14.72 million hectares in 2016-17.

#### Socio-Economic Context of Millets

- Millets were considered the **food of the poor** due to their **ability to grow even in the most marginalised of lands**, compared to other crops like paddy or wheat which needed more fertile lands and more focus on irrigation and crop management.
- Millets were also **ideal for rain-fed conditions and saline soils**. As a result they were used as the main cereals in most households.
- However, the desire to eat more refined grains associated with social status, the drudgery of cleaning & de-hulling the minor millets, upward mobility & favourable policies like easy availability of wheat & paddy in the public distribution system also contributed to a reduction in the demand for millets.

#### Renewed focus

- A **declining diversity in diet** which was traditionally a part of our food culture had many significant impacts in terms of the **nutrition status amongst women and children**. The focus on just wheat and paddy rice reduced nutrition in food to a large extent.
- However, recent trends show a **renewed interest in millets**. The government policies are also starting to reflect this renewal. Millets have been included in the **public distribution system in Odisha** and the government is also promoting millets under the **National Food Security Act**.
- At the behest of the Indian government, the **UN Food and Agricultural Organisation**

has approved its proposal to declare the **year 2023 as the International Year of Millets**.

#### Millets -- Good for Health, Farmers, & Environment

- In the current **changing agro-climatic narrative** across the world, it is essential that our agricultural policies see a shift from existing practices.
- According to a recent study, in the coming years there will be a **reduction in production rates** of various cereal crops **due to climate change**. The only crops that could **withstand these climate vagaries** and not see a negative impact on yield are **millets**.
- Millets have a **double value in tackling climate change** because they **contribute to both adaptation and mitigation**.
- Millets **survive in much higher temperatures** than most crops and **can survive with much less water** (1/4 of the water required by rice). Their overall resilience makes them **climate smart** and a good adaptation strategy for farmers.
- Millets also are farmed with **minimal fertilizers and pesticides**, so they have a **lower carbon footprint**. Millets compared to rice **reduces Green House Gases 2% to 13%**.
- Millets are also **highly nutritious** and have the potential to be a solution to the nutrition crisis facing the country.
- A study by **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)** found that children grew up to 50% more in weight and height parameters on a millet based diet.
- Millets are also being hailed as the **solution for many lifestyle diseases** like diabetes, high blood

pressure, digestive disorders, gluten allergies and much more.

### Way Forward

- We are witnessing a renewed interest in millets in our country. However, we are still in the early years of this millet revival and there is a long way to go.
- In addition to using millets as staples, companies are also working on creating **value added products** such as millet cookies, breakfast cereals, noodles, etc. **to increase consumer acceptance and ease of use.**
- To reap the maximum nutritional benefits from millets, it is essential to **encourage them as staple foods.**
- By including more millets in our diet, we all have the power not just to take charge of our own health & immunity but also impact the climate and farmers' lives in a positive way.

## 12. Diversifying plates for girls

*(GS2: Issues relating to poverty and hunger)*

### Context

- Multiple studies show that **adolescence is a nutritionally demanding** phase of life.
- **Girls** face more physiological demands and thus require a **higher intake of macro and micro nutrients.** Susceptibility of adolescent girls to anaemia is 40% compared to boys at 18%.
- Ensuring appropriate nutrition for adolescent girls is also paramount considering the **inter-generational impact it has on combating malnutrition.**

### Latest Reports

- The **National Family Health Survey (NFHS)-5** data show an **increase in anaemia** among

adolescent girls by **5%** when compared to NFHS-4.

- The **Comprehensive National Nutrition Survey 2019** shows that even before the pandemic, consumption of diverse food groups among adolescents was low. The fallout of **COVID-19** has **further worsened** dietary diversity, especially of women, adolescents and children.
- A study by the **Tata-Cornell Institute for Agriculture and Nutrition** showed that women's **dietary diversity** in India **declined by 42%** during COVID-19 lockdowns as they consumed fewer fruits, vegetables, and eggs.

### Emphasis on Dietary Pattern

- Adolescence is the window of opportunity where practices of dietary diversity can be built to **correct nutritional deficiencies** and **replenish the body** with much-needed nutrients, especially for girls.
- Along with continued service delivery of **Weekly Iron Folic Acid Supplementation (WIFS)**, the government's health and nutrition policies need to emphasise on **strong compliance to diverse diets and physical activities.** This includes locally sourced fruits and vegetables, seasonal diets, and the inclusion of millets.
- This further needs to be supplemented by strengthened **nutrition counselling** for adolescent girls through community workers' home visits, by building a strong ecosystem in schools to **promote healthy habits and diets, virtual counselling, and comprehensive nutrition counselling** through community-based events and Village Health, Sanitation and Nutrition Days.

- We need to promote good nutrition among adolescents through **Nutri-Smart schools** (building kitchen gardens in schools), which are already being implemented in some States. Such initiatives will increase awareness, improve availability, and accessibility to diverse food groups.
- We need to also think beyond schools, as the **diverse plates are first set at home**. Young girls need to be **equipped with accurate information** about adequate and appropriate diets so that they can **act as change agents for their families, community, and peer groups**.
- Further, **food diversification** is required to be **complemented with reformative steps** such as the recent amendment of increasing the legal age of marriage for women from 18 years to 21 years.
- However, for such legislation to have the best impact, it is equally crucial to ensure that girls remain in school or formal education, their safety is ensured, and their health and nutrition are prioritised. Only then can such measures provide opportunities for girls to improve their nutritional and health outcomes.

#### Micronutrients Deficiency

- The adolescent's nutritional status is related to the **burden of multiple micronutrient deficiencies**.
- Currently, **80% of adolescents suffer 'hidden hunger'** due to micro nutrient deficiencies.
- The trend is **more prevalent in girls** as they already suffer multiple nutritional deprivations.

#### Way Forward

- We need to strengthen our policy initiatives to **address deficiencies of not just iron and folic acid, but**

**also vitamin B12, vitamin D, and zinc.**

- The **POSHAN Abhiyaan** (now **Mission POSHAN 2.0**) strongly integrates the aspect of **under-nutrition and anaemia** among women, girls, and children. However, the design **needs to be inclusive of the growing risk of non-communicable diseases and obesity** among adolescents.
- Given that over **10% of adolescents are overweight** in many states of India, **strict action plans need to be devised against the sale and advertisement of unhealthy foods and beverages.**

### 13. Be wary of growing exports

*(GS3: Conservation, environmental pollution and degradation, environmental impact assessment)*

#### Context

- The uncertainties in the global economic environment, significantly driven by Russia's invasion of Ukraine and the resultant sanctions on Russia by the West, along with Sri Lanka's ongoing struggles to stay afloat amidst a deepening crisis, have all been believed to have created export opportunities for countries such as India.

#### Emission embodied exports

- **India is one of the leading exporters of carbon emissions-embodied products**, and that there is a steady increase in the total carbon emissions embodied in exports.
  - *Embodied carbon is the carbon dioxide (CO<sub>2</sub>) emissions associated with the manufacture and use of a product or service.*
- India's total carbon emission exports increased from **80.3 million tonnes** at the time of it

joining the World Trade Organization (WTO) in 1995 to **426.1 million tonnes** in 2018.

- The sharp increase in carbon-embodied exports brought India closer to that of the U.S.'s carbon emission exports.
- Net CO<sub>2</sub> exports can be calculated by taking the **difference between carbon emissions-embodied exports and carbon emissions-embodied imports**.

### Virtual Water Trade

- India is also **virtually exporting** some of its depleting natural resources such as **water** through exports.
- For instance: India is the leading exporter of **rice** in the world market. Given that rice is a **water-intensive** crop, India is indirectly exporting water to other countries.
- This **virtual water trade** will have an adverse impact on long-term sustainability and food security of the country although there has been an overall improvement in water-use efficiency.

### Developed Countries- Net Importers

- Most developed countries are the net importers of polluted goods produced elsewhere, especially in the developing countries.
- The **largest net importers** of carbon emission-intensive goods are **the U.S., Japan and Germany**.
- Due to the stringent environmental measures adopted by developed countries, **pollution-intensive industries** show a tendency to **relocate from developed countries to developing countries** with the lowest environmental standards/weak enforcement of environmental standards in order to cut resource and labour costs — a phenomenon researchers term as '**pollution haven hypothesis**'.

- Thus, developing countries that are lax in enforcing environmental policies eventually become pollution havens.

### Increased GDP and reduced pollution

- An **increased GDP as a result of expansion in export revenue can be utilised for improving the environmental quality**.
- As per the **environmental Kuznets curve**, there is an **inverted U-shape relationship between the income of a country and its environmental degradation**.
- This implies that as income increases, environmental quality begins to deteriorate, but improves after some time.
- However, there is no consensus across studies with respect to this possibility.

### Conclusion

- The **growing consumption in rich countries has come at a cost for developing countries such as India**.
- Countries have begun imposing an **environmental tax** to address a broad spectrum of environmental issues.
- For example, in most developed countries, environmental tax roughly constitutes 2% of the GDP. While the **environmental tax in India is around 1%**, the **tax as a percentage of GDP has marginally come down** from 1.38% in 2005 to **1.07% in 2019**.
- In order to ensure long-term sustainability, strict environmental measures need to be explored, such as revisiting the possibilities of **increasing the environmental tax**, even though the short-run implications, especially on the trade front, may not be pleasant.
- Similarly, **water-saving policies** that seek to improve the water use efficiency are also the need of the

hour, in order to promote sustainable production of rice and also safeguard food security in the country.

## 14. Economic Participation of Rural Women

*(GS1: Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies)*

### Context

- The annual **Periodic Labour Force Survey (PLFS)**, 2018-19, indicates that **only 19.7 percent of women in rural areas are part of the labor force.**
- While the labour force participation rate of women in rural areas is **marginally better than that of women in urban areas**, opportunities for women in rural areas is limited to a handful of sectors and in numbers.
- The PLFS report states **71 percent of women in rural areas were engaged in the agriculture sector** while nine percent were in the manufacturing sector and six percent were in the construction sector.
- **Lower literacy rate** among women in the rural areas is one of the main reasons why their job opportunities are mostly limited to the agriculture sector. Even within the agriculture sector, education plays a critical role as the level of commercialisation and mechanisation increases.
- As per the PLFS report, compared to India's average literacy rate of 78.1 percent, **only 65.7 percent women in rural areas** above the age of seven were **literate** as of 2019.

### Government Schemes to Improve Women Economic Participation

#### 1. Beti Bachao Beti Padhao:

- This is a **tri-ministerial scheme** by the Ministry of Women and Child Development, Ministry of Human Resource Development and Ministry of Health and Family Welfare launched in 2015 to create awareness about the importance of protecting girl children and focus on their education and rights.
- As per the Census 2011, for every 1000 boys born in India, only 918 girls survived. This scheme aims to **improve this skewed Child Sex Ratio (CSR) and reduce inequalities and discrimination against girls** that typically have limited access to health, nutrition, and education.
- Several initiatives are implemented at district levels to sensitise families in both rural and urban areas about these inequalities. For eg: **Haryana's Jhajjar district** has been providing **free sanitary napkins** to young girls from rural areas who do not attend school while menstruating because they cannot afford to buy the commercially available sanitary napkins.
- There has been a substantial reduction in absenteeism among girls up to 40 percent since the introduction of this programme.

#### 2. Mahila e-Haat:

- It is an initiative for **women entrepreneurs and self-help groups** for **showcasing their products that are made or manufactured by them on an online platform.**
- This is a unique way to improve the access of rural entrepreneurs to market, increase digital financial inclusion and empower women.

#### 3. Mahila Shakti Kendra:

- It was launched to improve the technical capacity of governments

in implementing women centric schemes and programmes.

- It introduced a new center called **District Level Center for Women (DLCW)** that collects information on government programmes and schemes for women and shares with all citizens while serving as a link between districts and states.

#### 4. MGNREGA:

- The Mahatma Gandhi National Rural Employment Generation Act (MGNREGA) has worked in favour of rural women by providing them paid employment at par with men.
- As women are more likely to partake in subsidiary employment, this scheme works for them as it guarantees employment for 100 days in a year.
- MGNREGA was found to be associated with **economic independence and wage increase of women in rural areas.**
- **Reserving one-thirds of the jobs** for women in the scheme was found to be associated with an **increase in labour force participation of women.**
- There is also an **increase in women's participation in local governance processes; increase in children's education and the bargaining power of women in a household.**

#### Issues Challenging the Success of these Programmes

- The biggest obstacle is **social stigma** that is associated with women who want to work outside their homes.
- In addition, **the majority of the burden of family care falls on women's shoulders.** Several studies have indicated that single women are more likely to work outside their homes than married women. Moreover, having children

is another deterrent to women joining the formal work force.

#### Opportunities in the Care Economy

- As economies digitise and technological changes normalise remote work, it is expected that there will be a **huge demand for workers in the care economy** to support women within households and those work outside homes.
- This is especially important to prevent women in the labour force from quitting their jobs due to increased burden of household chores.
- The care economy **consists of the paid and unpaid labor and services that support caregiving in all its forms.** It involves child care, elder care, education, healthcare, and personal social and domestic services.
- As more and more women in urban areas increase their participation in the formal economy, the demand for workers in the care economy can be easily supported through a supply of well-trained and educated women from rural areas.
- Our **nursing schools and vocational training centers** in the care economy can help create job opportunities for women in rural and urban areas. This will also help reduce the number of hours women spend doing household chores and taking care of family members, across the country.

#### Creating a Safe Environment for Women

- It is also crucial to look at policy challenges associated with migration of women.
- Social norms that prevent women from working outside their homes and relocation must be addressed through a **formal structure that protects the rights of these**

**migrant workers and ensures their safety and security.**

- It is important to ensure that formal contracts cover benefits like paid leaves, access to health insurance, and access to formal financial systems that are digitally enabled to avoid leakages in salary transfers.
- **Initiatives like women's hostels** are a great way of ensuring a safe place for women to stay and for their childcare, but much more is needed to ensure that their rights are protected through proper contracts.

### Way Forward

- The most impactful way put an end to social taboos against women who want to work outside their homes is to demonstrate through action that we can create a work culture that is equal, safe and inclusive where women- single, married or with children-can work without discrimination.

## 15. What are community forest rights, why do they matter?

*(GS3: Conservation, environmental pollution and degradation, environmental impact assessment)*

### Context

- The Chhattisgarh government has become the second state in the country to **recognise Community Forest Resource (CFR) rights of a village inside a national park.**
- The CFR rights of tribals living in Gudiypadar, a hamlet inside the **Kanger Ghati National Park** in Bastar district, were recognised recently, giving the community power to formulate rules for forest use.
- In 2016, the Odisha government was the first to recognise Community Forest Resources inside the **Simlipal National Park.**

### What is a community forest resource?

- The community forest resource area is the **common forest land that has been traditionally protected and conserved for sustainable use by a particular community.**
- The community uses it to access resources available within the traditional and customary boundary of the village; and for seasonal use of landscape in case of pastoralist communities.
- Each CFR area has a **customary boundary** with identifiable landmarks recognised by the community and its neighboring villages. It may include **forest of any category** – revenue forest, classified & unclassified forest, deemed forest, reserve forest, protected forest, sanctuary and national parks etc.

### What are Community Forest Resource rights?

- The Community Forest Resource rights under **Section 3(1)(i) of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** (commonly referred to as the Forest Rights Act or the FRA) provide for recognition of the right to “protect, regenerate or conserve or manage” the community forest resource.
- These rights allow the community to **formulate rules for forest use by itself and others** and thereby discharge its responsibilities under Section 5 of the FRA.
- CFR rights, along with **Community Rights (CRs)** under Sections 3(1)(b) and 3(1)(c), which include **rights over non-timber forest products**, ensure sustainable livelihoods of the community.
- These rights give the **authority to the Gram Sabha to adopt local**

traditional practices of forest conservation and management within the community forest resource boundary.

### Why is the recognition of CFR rights important?

- Aimed at **undoing the “historic injustice”** meted out to forest-dependent communities due to curtailment of their customary rights over forests, the FRA was enacted in 2006.
- It is important as it recognises the community’s right to use, manage and conserve forest resources, and to legally hold forest land that these communities have used for cultivation and residence.
- It also underlines the **integral role that forest dwellers play in sustainability of forests and in conservation of biodiversity.**
- It is of **greater significance inside protected forests** like national parks, sanctuaries and tiger reserves as traditional dwellers then become a part of management of the protected forests using their traditional wisdom.
- But while CFR rights are an important empowerment tool, getting a consensus amongst various villages about their traditional boundaries often proves a challenge.

## 16. Oceans on Simmer

*(GS3: Conservation, environmental pollution and degradation, environmental impact assessment)*

### Context

- Oceans **regulate the climate** by absorbing atmospheric carbon dioxide (CO<sub>2</sub>) and by **altering the energy budget, carbon cycle and nutrient cycle.**
- They have helped reduce the worst impacts of climate change by **absorbing over 90% of excess**

**global temperature rise and about 25% of CO<sub>2</sub> emission.**

- However, **global warming is causing warming, acidification and deoxygenation of oceans.**
- The oceans have warmed unabated since 2005. At the **ocean surface, temperature has on average increased by 0.88°C** from 1850-1900 to 2011-20.
- The ocean surface temperature is projected to **increase by about 1.5°C by the 2050s** with respect to the 1850-1990 thresholds.
- The rise has been observed not only at the surface but also in **deep ocean waters.**

### Major Impacts

- The major impact of ocean warming is seen over the **Arctic Ocean** which will likely become **practically sea ice-free** during the **seasonal sea ice minimum** for the first time before 2050.
  - *The sea ice minimum occurs at the end of the summer melting season. The sea ice minimum has been occurring later in recent years because of a longer melting season.*
- Relative to 1995-2014, the **global mean sea level will rise 0.18-0.23 m** by 2050 and the rise is attributed to thermal expansion and mass loss from glaciers and ice sheets.
- Recent studies have suggested **occurrence of Marine Heat Waves (MHW)**, which are periods of extreme high sea surface temperatures. Marine Heat waves can lead to severe and persistent impacts on **marine ecosystems, coral bleaching, changes in phytoplankton blooms, shifts in species composition and toxic algal blooms.**
- The **rate of ocean uptake of atmospheric CO<sub>2</sub> has continued**

**to strengthen** in the recent two decades in response to the rising atmospheric CO<sub>2</sub>. The **oceans are continuing to acidify** in response to the carbon uptake.

- There is a growing consensus that the **open ocean is losing oxygen** overall, with a very likely loss of 0.5-3.3 per cent between 1970-2010 from the ocean surface upto 1,000 m.

### Impacts on Marine Ecosystem

- The warming of oceans **affects marine organisms at multiple levels**, impacting fisheries and food production. Global warming can fundamentally alter ocean biodiversity.
- **66% of the global ocean is impacted by human pressures**, with severe impacts in declining richness and abundance of ocean biodiversity.
- The erosion of ocean biodiversity and ecosystems particularly **threatens the livelihoods of local communities**.
- Eg: 80% of all **tourism** is based near the sea, but the destruction of coral reefs is affecting it.

### Coastal Stress

- **Coastal ecosystems** are observed to be under stress from ocean warming and sea level rise that are exacerbated by **non-climatic pressures from human activities** on ocean and land.
- Eg: The **global wetland area has declined** by nearly 50 per cent relative to pre-industrial level.
- Since the early 1980s, the occurrence of **harmful algal blooms and pathogenic organisms has increased** in coastal areas due to warming, deoxygenation and eutrophication with negative impacts of food provisioning, tourism, economy and human health.

### Extreme Events

- Ocean warming also will have impacts on weather systems around the world. Eg: A **tropical cyclone (TC)** is the most important severe weather system, which ocean warming can influence.
- An **increasing trend in sea surface temperatures and ocean heat content** could help **Tropical cyclones intensify quickly and travel long distances** without losing appreciable energy.
- There is also evidence that **TC intensification rates and the frequency of rapid intensification events have increased** in recent years.
- The **Indian Ocean is also warming** and the trend is likely to continue and a warm Indian Ocean can lead to **more intense precipitation events over India** during the monsoon, as it will help to more moisture advection and convergence.

### Major Risks

- There are **three major risks to oceans** that arise from governance-related issues:
  - (i) The impacts of the **overexploitation of marine resources**;
  - (ii) **Inequitable distribution** of access to and benefits from marine ecosystem services; and
  - (iii) **Inadequate or inappropriate adaptation** to changing ocean conditions.

### Way Forward

- The actions that can reduce these risks relate to the process of **co-creation and implementation of improved, comprehensive and integrated ocean management and enhancement of decision-making processes**.

- The United Nations has proclaimed a **Decade of Ocean Science for Sustainable Development (2021-2030)** to support efforts and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can help countries to create improved conditions for sustainable development of the ocean.
- Countries should actively participate in it to mitigate the harmful impacts on the marine ecosystem.

## 17. A 'silver' moment to propel a Bay of Bengal dream

*(GS2: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests)*

### Background

- June 6 marks the completion of **25 years** since the 1997 **Bangkok Declaration** launched a modest grouping of Bangladesh, India, Sri Lanka and Thailand, with the acronym, **BIST-EC**.
- Three countries (Nepal, Bhutan and Myanmar) joined it later to make it the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (**BIMSTEC**).
- This unique set of **five countries from South Asia** and **two from Southeast Asia** are parents to an institution with lofty ambitions.

### Past Trajectory

- At the grouping's birth, the world was different; it was stamped by America's 'unipolar moment'.
- India and Thailand joined hands to start an experiment of infusing a part of South Asia with the economic and institutional dynamism.
- But BIMSTEC found the burdens of South Asia too heavy to carry, and so it grew slowly.

- Now in the third decade of the 21st century, the strategic contestation between the United States and China defines the region's geopolitics and geo-economics, creating new tensions and opportunities.
- The grouping has succeeded in **rejuvenating** itself. Since its **Kathmandu summit** in 2018, it is viewed as an **instrument of regional cooperation and integration**, not just of sub-regional cooperation.

### Key Achievements

- BIMSTEC has crafted a **new Charter** for itself, spelling out the grouping's vision, functions of its constituent parts, and has secured a legal personality.
- It has, finally, taken measures to **strengthen the Secretariat**, although some members are yet to extend adequate personnel support to it.
- Above all, its success lies in its survival through the turns and twists of internal tensions.
- The BIMSTEC region witnessed the influx of over a million Rohingya refugees into Bangladesh, the result of oppression by the Myanmar military; the coup in Myanmar that led to its virtual boycott by a large segment of the international community; and the grave political and economic crisis afflicting Sri Lanka.
- Unlike SAARC, post-2014, BIMSTEC has continued to **hold its summits and meetings of Foreign Ministers**.
  - *The South Asian Association for Regional Cooperation (SAARC) was established in 1985 in order to promote the welfare of the peoples of South Asia. SAARC now comprises eight Member*

*States: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.*

- BIMSTEC has succeeded in holding **five summits** so far; it has now resolved to hold regular **summits once in two years**.
- The grouping has also registered progress in **combating terrorism, forging security cooperation**, and creating mechanisms and practices for the better management of **humanitarian assistance and disaster relief**.
- A whole basket of memoranda of understanding, agreements and legal instruments provide the foundation for developing functional cooperation in select areas such as agriculture, trade, sustainable development and connectivity.
- Institutions such as an **Energy Centre and the Centre on Weather and Climate** are in place to push sectoral cooperation forward.

### The Faultlines

- A major failure relates to the continuing **inability to produce a comprehensive Free Trade Agreement (FTA)** 18 years after the signing of the Framework Agreement.
- The other disappointment is connectivity in **infrastructure** (roads, railways, air, river, and coastal shipping links), energy, the digital and financial domain, and institutions that bring people closer together for trade, tourism and cultural exchanges. Only limited progress has been achieved so far.
- Much of the connectivity established recently is the outcome of **bilateral initiatives** taken by India, Bangladesh, Nepal and

Bhutan to strengthen transport links.

- Mega-projects aimed to improve connectivity between India and Myanmar (and Thailand) have been delayed inordinately.
- The grouping has talked about the **Blue Economy** but is yet to begin any work on it.
- Business chambers and corporate leaders are yet to be engaged fully with the activities of BIMSTEC.
- This leaves the grouping largely in the **hands of officials and experts**.

### Conclusion

- For greater regional connectivity, **more financial resources** are needed.
- The movement towards establishing the **BIMSTEC Development Fund** is needed.
- An exciting destiny awaits it as it works to realise the vision of the **Bay of Bengal Community (BOBC)**.
- In this Indo-Pacific century, the BOBC has the potential to play a pivotal role, deepening linkages between South Asia and Southeast Asia.
- It should accelerate the region's economic development by collaborating with the newly minted **Indo-Pacific Economic Framework for Prosperity (IPEF)**. New synergy should be created between BIMSTEC and the IPEF.
- Finally, while all member-states are equal, **three have a special responsibility: Bangladesh** as the host of the BIMSTEC Secretariat; **Thailand** as the representative of Southeast Asia; and **India** as the largest state in South Asia.
- This trio must be the engine to pull the BIMSTEC train with imagination and determination.

## 18. Safety Net for Farmers

*(GS2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections)*

### Context

- Agriculture is the mainstay of the Indian economy accounting for the **primary livelihood of approximately 52 per cent of the population** and a chief source of raw materials for many major industries.
- The **share of agriculture and allied sectors in total GVA (Gross Value Added)** of the economy has improved to **20.2 per cent** (2020-21) and **18.8 per cent** recently.
- Farming in India is **dominated by marginal and small farmers** (below 1 hectare and 1-2 hectare land holdings respectively) who **account for nearly 86 per cent of all the farmers** in the country, but own just 47.3 per cent of the crop area (10th Agriculture Census, 2015-16).
- Smallholder farmers are unable to capture commensurate value for their farm produce mainly due to low visibility of demand; limited access to efficient and low-cost logistics; and low power of bargaining. Their land holdings are too small to generate sufficient household income.
- According to the National Sample Survey (77th Round, 2019), **50.2 per cent of agri-households in India are in debt** and an average household has debt equivalent to 60 per cent of its annual income.
- The survey also showed **increasing fragmentation of holdings vis-à-vis an increasing number of**

**small farmers.** Hence, it was befitting to formulate and implement social security schemes for the farming community by and large, and specifically for small and marginal farmers.

### Definition of Social Security

- **International Labour Organization (ILO)** defines social security as the **protection that a society (Government) provides to under-privileged/disadvantaged groups to ensure access to healthcare and to guarantee income security.**

### Initiatives by Government of India

#### 1. MGNREGA:

- The National Rural Employment Guarantee Act 2005 (later renamed as Mahatma Gandhi NREGA) was passed by the Parliament as a legal social security measure that **guaranteed the 'right to work'.**
- Accordingly, a scheme (**Mahatma Gandhi NREGS**) was launched in a **demand-driven model to provide livelihood security to rural households.** Basically, it is an employment programme that **guarantees at least 100 days of wage employment** in every financial year to every household whose adult members volunteer to do unskilled manual work.
- In case of non-offering of work, the beneficiary is eligible for **unemployment allowances** to be paid by the State as per the provision of MGNREGA. In addition to this, there is a provision for an **additional 50 days of unskilled wage employment in a financial year in drought/ natural calamity-notified rural areas.**
- A major chunk of resources are spent on works related to **natural resource management** (check dams, ponds, renovation of

traditional water bodies, field bunds, water conservation, irrigation works, etc.) which ensure **higher income to farmers** by enhancing both the area under cultivation and yield of crops.

- The creation of durable community and individual beneficiary assets (goat sheds, dairy sheds, vermi-compost pits, water soak pits, etc.) has **helped the underprivileged to have access to an alternative sustainable livelihood.**

## 2. Deendayal Antyodaya Yojana:

- Day-National Rural Livelihoods Mission (DAYNRLM) is a unique social security scheme that **aims to reduce poverty by enabling poor households to access gainful self-employment and skilled wage employment opportunities.**
- The Mission seeks to alleviate rural poverty by **mobilising rural poor women into Self Help Groups (SHGs).** The Mission aims to mobilise 8-10 crore rural poor households into SHGs in a phased manner and provide them long-term support such that they diversify their livelihoods, and improve their incomes and quality of life.
- **Financial support** is provided to budding SHGs by providing **Revolving Fund** (at Rs.10,000 – 15,000 per SHG) and **Community Investment Support Fund** (upto Rs. 2.50 lakh per SHG). SHGs use these funds to provide loans to their members to undertake income generating socio-economic activities as per their micro-credit or investment plans.
- Under a sub-component of DAY-NRLM (**Mahila Kisan Sashaktikaran Pariyojana or MKSP**), women farmers are being empowered by making systematic investments to create sustainable

and diversified livelihood opportunities for them.

- Women farmers are trained in several areas of livelihood importance (kitchen gardening and nutrition gardening, development of low/minimum cost diet with high nutrient efficiency, latest agricultural and allied technologies, processing and value addition, rural crafts, etc.) through community resource persons and extension agencies.

## 3. National Social Assistance Programme:

- The **Ministry of Rural Development** operates a wide-angle social security scheme—National Social Assistance Programme (NSAP)— to provide **financial assistance to the elderly, widows, and persons with disabilities in the form of social pensions.**
- It **covers urban as well as rural citizens** that include a large number of farmers, rural artisans, landless labourers, and their families.
- The programme is being implemented through defined and structured pension and welfare schemes for target groups. It is **funded by Central and State Governments.**

## 4. PM-KISAN:

- Launched in 2019, Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) aims to **supplement the financial needs of farmers** in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle. This would also **protect them from undue reliance on moneylenders** for meeting such expenses and ensure their

continuance in the farming activities.

- Under the Scheme, **financial assistance of Rs 6,000 per annum is provided to all landholding farmer families across the country**, subject to certain exclusion criteria related to higher-income strata.
- The amount is transferred in three monthly installments of Rs 2,000 each, directly into the bank accounts of the beneficiary farmers identified by the State/Union Territory Governments.

#### 5. Pradhan Mantri Kisan Maandhan Yojana:

- Small and marginal farmers have minimal or no savings to sustain their livelihood during their old ages. Acting proactively on the sensitive issue, the Government of India launched a customised pension scheme for farmers in 2019.
- Named as Pradhan Mantri Kisan Maandhan Yojana (PMKMY), the Scheme aims to provide a **social security net for the small and marginal farmers by way of pension. A minimum fixed pension of Rs 3,000 per month** is provided to the eligible small and marginal farmers on attaining the age of 60 years.
- The Scheme is **voluntary and contributory** in nature with an **entry age of 18 to 40 years**. The beneficiary is required to contribute Rs 100 per month at the median entry age of 29 years, whereas the Central Government also contributes an equal amount to the Pension Fund.

#### 6. Pradhan Mantri Fasal Bima Yojana:

- The Pradhan Mantri Fasal Bima Yojana (PMFBY) is a uniquely designed social security scheme under which **financial assistance**

**is provided to farmers in distress due to loss/damage to crops arising out of natural calamities.**

- The Scheme has been able to provide financial assistance to the most vulnerable farmers, as around 85 per cent of the farmers enrolled under it are small and marginal farmers.

#### Way Forward

- Besides specific schemes, farmers and agricultural workers need a **comprehensive social security programme** that must cover all the exigencies as enumerated by ILO.
- These include death, disability, sickness, health, injury, unemployment and various types of accidents. Such programmes need to be implemented with an effective and widespread infrastructure at the grassroots level so that last mile connectivity is ensured.
- Details and benefits of such schemes must be disseminated through various media to maximise their impact on the social well-being of farmers.

### 19. Empowering Divyangjan

*(GS2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections)*

#### Context

- India has been known across the world as having a composite and inclusive culture since ancient times.
- India being a party to the **United Nations Convention on Rights of Persons with Disabilities**, it is an obligation on the government to

streamline domestic law, governing the disability sector.

## Measures Taken

### 1. Rights of Persons with Disabilities

#### Act, 2016:

- The Government of India has enacted the Rights of Persons with Disabilities Act, 2016 to broaden the horizon of rights and entitlements of persons with disabilities, besides providing adequate safeguards for protecting these rights.
- The Act guarantees equality, protection from cruelty, exploitation and violence, the right to live with family and community, access to justice, accessibility to voting, legal capacity, etc.
- It also **mandates the Government to take measures to promote health, education, skill development, and employment opportunities for PwDs and to create an environment for participation of PwDs in sports, recreation, and cultural activities.**
- The Act guarantees **5% reservation in seats in Government and Government aided higher educational institutions** for persons with benchmark disabilities and **4% reservation in Government jobs** for certain persons or class of persons with benchmark disability.

#### 2. Unique Disability Identity Project:

- With a view to having a uniform and hassle-free mechanism for the certificate of disability and creating a national database for PwDs, the Government has launched the Unique Disability Identity (UDID) Project since 2015-16.
- It aims to issue a Unique Disability Identity Card to each person with disabilities.

#### 3. Accessible India Campaign:

- The Government of India launched the Accessible India Campaign in 2015, which focuses on **accessibility in the built-up environment, transportation system, and ICT ecosystem.**
- The campaign is based on the **principles of the Social Model of Disability**, that disability is caused by the way society is organised, and not the person's limitations and impairments.
- The physical, social, structural and attitudinal barriers prevent People with Disabilities from participating equally in the socio-cultural and economic activities. A barrier-free environment facilitates equal participation in all the activities and promotes an independent and dignified way of life.

#### 4. Early Intervention Centres:

- **Early childhood (0-6 years)** is a critical period that determines a person's ability to reach her/his lifelong health, social, and economic potential. As such, **early identification of disability** is crucial for therapeutic intervention to reduce the disability burden.
- Recognising this, the Department of Empowerment of Persons with Disabilities (DEPwD) has set up 14 Early Intervention Centres. These centres are equipped with facilities for screening at-risk cases, providing therapeutic services such as speech therapy, occupational therapy, physiotherapy, behavioural therapy, parental/peer counselling, and preparatory school for enhancing the cognitive and physical abilities of children with disabilities.

#### 5. ADIP Scheme

- DEPwD also implementing the **Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) scheme**, under

which aids and assistive devices are distributed to Divyangjan to improve their mobility so that, apart from carrying out daily living activities independently, they can also go to work and earn a living.

#### 6. Other Initiatives:

- The Government has also set up the **Indian Sign Language Research and Training Centre** in Delhi to promote the use of sign language and also to develop human resources in the field.
- DEPwD also set up the **National Institute of Mental Health Rehabilitation (NIMHR)** at Sehore, Madhya Pradesh. The institute aims to work towards capacity building in the field of mental health rehabilitation besides developing community-based rehabilitation protocols for mainstreaming persons with mental illness who have been successfully cured.
- DEPwD through its flagship scheme, **Deendayal Disabled Rehabilitation Scheme** has been supporting the NGOs to run various projects such as special education with residential facilities for children with hearing, visual, intellectual disabilities, their vocational training, etc.
- The Minister for Social justice and Empowerment has developed **Sugamya Bharat App**, a mobile application for crowdsourcing problems related to accessibility.
- The Ministry of Information & Broadcasting has issued guidelines in 2019 for **making TV viewing accessible for persons with hearing impairment**.

#### Conclusion

- The goal of having a truly inclusive society cannot be achieved through Government initiatives alone without the active participation of

all stakeholders including NGOs, PwD associations, academic bodies and civil society organisations.

## 20. Sustainable Economic Growth (GS3: Conservation, environmental pollution and degradation, environmental impact assessment)

### Context

- According to a new assessment from the **Intergovernmental Panel on Climate Change (IPCC)**, **human activity is “unambiguously” to blame** for more severe climate events such as heatwaves, floods, and droughts, and **attaining net-zero greenhouse gas emissions by 2050 is a must**.
- A global warming increase of **1.5°C above pre-industrial levels**, a marker that world leaders pledged not to exceed this century when the **Paris Agreement** was signed in 2015, **could be reached by 2030— possibly sooner**.
- It is also predicted that **Southeast Asia** is one of the planet’s most vulnerable regions to climate change.

### Measures Needed

- Our response to climate change should begin with a focus on priorities like **expanding the use of clean and renewable energy**. Due to its strong reliance on coal, India has risen to become the **world’s seventh-largest greenhouse gas emitter**, despite the fact that per capita and per unit of greenhouse gas emissions in India remain the lowest among the other developing countries.
- To lower the carbon intensity of the electricity sector, **energy efficiency must be combined with technical improvements**. Parallel to this, **renewable energy production and regional energy**

**trading** must be bolstered while environmental stresses are taken into account.

- India should work in collaboration with industry associations, domestic banks, specialised energy efficiency agencies, and service companies, to **upgrade transmission and distribution systems, and promote clean technology and renewable energy development.**
- According to the **Climate Vulnerability Index (CVI)**, Assam, Andhra Pradesh, Maharashtra, Karnataka, and Bihar are highly vulnerable to extreme climate events such as floods, droughts, and cyclones. It also says that more than **80 per cent of India's population lives in districts highly vulnerable to extreme hydro-met disasters.**
- A **district-by-district climate action plan** is essential because most Indian districts are vulnerable to extreme weather occurrences.
- Our focus should significantly be on **managing land use and forests for carbon sequestration.** Approximately, one-third of the region's greenhouse gas emissions are caused by the conversion of forests to agricultural land, which has a significant impact on the region's biodiversity.
- One of the most cost-effective strategies to minimise greenhouse gas emissions is to **improve forest and agricultural land management and integrate water development along with storage creation.**
- We must pave the road for the **creation of competitive and livable cities with lower carbon footprints.** Greenspace, energy-efficient buildings, and water supplies, as well as reductions in

greenhouse gas emissions from waste and urban transportation, are all top priorities.

### Crucial Role of Green Finance

- With the cost of the climate crisis rising exponentially, India would require **green finance for adaptation-based climate action.** Developed countries must deliver the **USD 100 billion** promised since 2009 and commit to increasing climate finance over the next decade.
- In addition, India must collaborate with other countries to establish a **Global Resilience Reserve Fund**, which could function as a form of climate insurance.
- **"Green financial investments"** might provide a significant contribution to the expected financial assistance for the essential energy transformation over the next 10 years. In practice, only a small percentage of the private capital flows to emerging economies, and even that is skewed disproportionately in a few nations.
- **India's emissions trajectory is compatible with a 2°C future. India's 500 GW renewables capacity target by 2030**, as well as the overall Indian economy's high degree of energy efficiency, are among the highlights in the National Statement by the Prime Minister at COP26 Summit in Glasgow.
- To grow, **India requires its own fair amount of carbon space.** Either the West can provide the necessary scale of money or clean technology to allow India to swiftly deploy renewable energy to fuel its development or the West must substantially reduce its emissions to allow for rising Indian emissions in the future years.

- India highlights the need to comprehensively address climate change issues including **equitable distribution of carbon space**, support for mitigation, and adaptation.

### Way Forward

- As per the **Global Climate Risk Index**, published by international environmental think tank **Germanwatch**, **India is amongst the top 10 most vulnerable countries.**
- The need of the hour is to **ensure our renewable energy goals.**
- Secondly, **emissions-intensive industries must be decarbonised.** Although India has made significant progress in reducing emission intensity, more effort is needed to reduce emissions in heavy industries such as iron and steel, chemicals, and cement, as these are among the highest emitters, and demand for their products is growing due to rapid urbanisation and economic growth.
- Thirdly, we require **more 'carbon sinks,' or carbon-storing ecosystems** such as forests, oceans, and wetlands. More carbon sinks must be created to complement our efforts to cut emissions. **Local communities**, many of which live in harmony with the environment and rely on natural resources for livelihood, play a critical part in this.

## 21. Safeguarding Children

*(GS2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections)*

### Context

- India is home to 472 million children upto the age of 18 years and comprising **39 per cent of the country's population.**
- There are roughly 30 million orphaned and abandoned children in India-- that's almost 4% of the youth population. Of these, only a fraction finds their way into family care because **adoption rates in India are abysmally low.**
- This means that there needs to be a huge readjustment in the Government's focus on child development, as currently, millions of children are being denied opportunities to live a life of safety and good health.

### Low Levels of Adoption in India

- Adoption rates in India have always been low, but they have been dropping in the past few years. This fall occurred because out of approximately 30 million children abandoned, **only 261,000 are under institutionalised care, accounting for a meager 0.87%.**
- The rest are left wandering on the streets, vulnerable to abuse and trafficking. With so few children actually in care homes, most orphans are not 'available' for legal adoption. Even then, prospective parents are choosy, with most wanting a **child without a disability and between the age of 0-2 years old.**
- Data shows that while more than 29,000 prospective parents are willing to adopt, just 2,317 to 3,000 children are available for adoption. **Adoption laws in India are strict**, leading to exceptionally low numbers of adoptions taking place. The reasons for low levels of adoption in India are manifold.
- Firstly, there aren't enough children available for adoption because the **ratio of abandoned**

### **children to children in institutionalised care is lopsided.**

The District Child Protection Officer should be taking the street children to a Child Care Institution (CCI), and if their parents aren't found, then they should be placed for adoption.

- The Government should devote **greater resources on setting up more CCIs** along with a strategy to move millions of children off the streets to institutionalised care and a supportive family. This can happen if the Government pushes its focus, money, and resources towards shutting down unregistered CCIs, holding district-level childcare officers accountable, and running a countrywide campaign on adoption as another means of having a child.

### **Role of Central Adoption Resource Authority**

- The year 2015 saw a moment of transition in the adoption process with the introduction of the Central Adoption Resource Authority (CARA). CARA is an **autonomous and statutory body of the Ministry of Women and Child Development (MoWCD)**.
- CARA manages a **centralised digital database** of adoptable children and prospective parents.
- It functions as the **nodal body for the adoption of Indian children** and is mandated to **monitor and regulate in-country and inter-country adoptions** (in accordance with the provisions of the **1993 Hague Convention on Inter-country Adoption**, ratified by the Government of India in 2003).
- In 2018, CARA allowed **individuals in a live-in relationship** to adopt children from and within India.
- Although the main focus of the CARA mechanism is to quicken the

process of adoption, the waiting period is growing longer.

### **Legislations Governing Adoption Practices**

- Adoption practices in India are primarily governed by the **Hindu Adoptions and Maintenance Act, 1956 (HAMA) and Juvenile Justice (Care and Protection of Children) Act, 2000 (JJ Act)**.
- HAMA is the statute that **governs the adoption of and by Hindus**. The definition of 'Hindus' here includes **Buddhists, Jains, and Sikhs**. It gives an adoptive child all the rights of a naturally-born child, including the right to inheritance.
- As per the JJ Act, orphan and destitute children in the country are "**Children in need of care and protection**" (CNCP). The primary responsibility of execution of the Act lies with the **States/UTs**.

### **Child Protection Services Scheme**

- The MoWCD is implementing a centrally sponsored Child Protection Services (CPS) Scheme for **supporting the children in difficult circumstances**. The primary responsibility of implementation of the Scheme lies with the **State Governments/UT Administrations**.
- Under the provisions of the CPS, the Central Government is providing **financial assistance to the States/UTs** for undertaking a situational analysis of children in difficult circumstances, inter-alia.
- Under the Scheme, institutional care to "Children in need of care and protection" and "Children in Conflict with Law" is provided in CCIs.
- The Scheme also provides for **non-institutional care** wherein **support is extended for adoption, foster care and sponsorship**.

## Umbrella Schemes

- To promote welfare, development and protection of children, the Union Cabinet has recently approved **3 important Umbrella Schemes** to be implemented in mission mode. i.e., **Mission Vatsalya, Mission Poshan 2.0, and Mission Shakti.**

### 1. Mission Vatsalya:

- In this Mission, Children have been recognised by policy makers as **one of the supreme national assets.**
- The objective is to secure a healthy and happy childhood for every child in India; foster a sensitive, supportive and synchronised ecosystem for development of children; assist States/UTs in delivering the mandate of the JJ Act; and achieve the SDG goals.

### 2. Mission POSHAN 2.0:

- It is an **Integrated Nutrition Support Programme** which seeks to address the challenges of malnutrition in **children, adolescent girls, pregnant women, and lactating mothers** by creating a convergent ecosystem to develop and promote practices that nurture health, wellness and immunity.
- POSHAN 2.0 will bring three important programmes/schemes under its ambit, viz., **Anganwadi Services, Scheme for Adolescent Girls and Poshan Abhiyaan.**

### 3. Mission Shakti:

- This Scheme envisages a **unified citizen-centric lifecycle support for women** through integrated care, safety, protection, rehabilitation, and empowerment to unshackle women as they progress through various stages of their life. Mission Shakti has **two subschemes 'Sambal' and 'Samarthya'.**

- The **Sambal** sub-scheme consists of the existing scheme of One Stop Centre (OSC), 181 Women Helplines (WHL), and Beti Bachao Beti Padhao (BBBP). Besides, a **new component of Nari Adalats** has been added as women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.
- The **"Samarthya"** sub scheme is for **empowerment of women**, consisting of existing schemes of Ujjwala, Swadhar Greh, and Working Women Hostel. In addition, the National Creche Scheme for Children of Working Mothers and the Pradhan Mantri Matru Vandana Yojana (PMMVY), which have been under the Umbrella ICDS Scheme till now, are also subsumed in 'Samarthya'.
- All the three Missions will be implemented during the 15th Finance Commission period 2021-22 to 2025-26.

### PM CARES for Children Scheme

- The PM CARES for Children Scheme was launched in 2021 to **support children who have lost both the parents or legal guardian or adoptive parents or surviving parent to Covid-19.**
- The PM CARES for Children Scheme inter-alia provides support to these children through convergent approach, gap funding for ensuring education, health, monthly stipend from the age of 18 years, and lumpsum amount of Rs 10 lakh on attaining 23 years of age.

### Way Forward

- The **process of adoption needs to be simplified** by taking a close relook at the various regulations guiding the procedure of adoption and the government can engage with concerned experts working in

this field to get feedback on the practical difficulties which prospective parents are facing.

- The **issue of children with special needs requires special focus** in terms of highlighting and advocacy at various platforms, besides regular sensitising of prospective parents for adoption of such children.

## 22. Digital Service Delivery

*(GS2: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures)*

### Context

- Technology is increasingly demonstrating its ability to solve problems in critical socio-economic areas such as financial inclusion and healthcare. Data analytics, artificial intelligence, machine learning, and India's growing digital footprint have resulted in a plethora of products and services for ordinary citizens. It is critical for policymakers to facilitate and accelerate this technology adoption to the grassroots.

### Government's Initiatives

#### 1. PMJDY:

- The Pradhan Mantri Jan-Dhan Yojana (PMJDY) was launched in 2014 to **ensure access to financial services**, namely, a basic savings & deposit accounts, remittance, credit, insurance, pension in an affordable manner.
- Under the scheme, a basic savings bank deposit (BSBD) account can be opened in any bank branch or Business Correspondent (Bank Mitra) outlet, by persons not having any other account.

#### 2. PMGDISHA:

- The Union Cabinet approved a scheme called "**Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)**" in 2017 to **promote digital literacy in rural India** by covering 6 crore rural households.
- This is the **world's largest digital literacy programme**.

#### 3. JAM Trinity:

- Through the combination of **Jan Dhan bank accounts and mobile phones** and the establishment of digital identity through **Aadhaar**, the poor can now receive benefits directly into their bank accounts.
- During the pandemic, cash benefits announced under **Pradhan Mantri Garib Kalyan Package (PMGKP)** have also been transferred using DBT, mostly to the poorest households.
- The JAM trinity (Jan Dhan accounts, the Aadhaar ID system, and mobile technology) when combined with abundant data on customer behaviours and preferences can enable the **creation of entirely new business models** that offer highly efficient, scalable, and intelligent processes for customer acquisition, servicing, cross-selling, and up-selling.

#### 4. Promotion of Digital Banking:

- In recent years— digital banking, digital payments, and fintech innovations have exploded in popularity in the country. The Government continues to support these industries in order to ensure that the benefits of digital banking reach every corner of the country in a consumer-friendly manner.
- To forward this objective and mark the country's 75th anniversary of independence, Scheduled Commercial Banks are proposing the establishment of **75 Digital**

**Banking Units (DBUs)** in 75 districts across the country.

#### 5. Healthcare:

- Besides ensuring ease of living, technology has several other critical applications in domains such as healthcare.
- The Government of India launched the **Ayushman Bharat Digital Mission** in 2021 to create a digital health repository for all Indians.
- To further the use of technology in medicine, there has been an unprecedented **expansion of telemedicine** during the pandemic. Till the end of September 2021, around 125 crore remote consultations have been completed under the **eSanjeevani portal**. Everyday, this facility connects thousands of citizens living in remote areas of the country with doctors from large city hospitals from the comforts of their homes.
- A '**National Tele Mental Health Programme**' has been developed to improve access to high-quality mental health counselling and treatment services. This would feature a network of 23 world-class tele-mental health centres, with NIMHANS serving as the nodal centre and the International Institute of Information Technology Bangalore (IIITB) providing technical support.
- **E-health** can **ensure efficiency** in healthcare, thereby lowering costs, and it can also **enhance the quality** of healthcare by allowing comparisons between different service providers, it can promote **evidence-based treatment**, and can **empower patients** by making medicine's knowledge base and personal electronic records accessible.

#### 6. Common Services Center:

- Common Services Centers (CSCs) are the **world's largest digital service delivery network**, with a broad reach in rural areas up to Gram Panchayat and Block level.
- These broadband-connected kiosks with information and communication technologies have been **offering citizens a variety of government, private, and social services**.
- CSCs have become **centres for digital empowerment in rural areas** and are actively playing the **role of disseminating digital literacy** at the grassroot levels.

#### 7. Jeevan Pramaan:

- Further, through **Jeevan Pramaan or Digital Life Certificate**, a biometric enabled digital service, **pensioners** of Central Government, State Government, EPFO, or any other government organisations can take benefit at their doorstep or at any post offices.

#### 8. UMANG App:

- The UMANG mobile app (Unified Mobile Application for New-age Governance) is an all-in-one single, unified, secure, multi-channel, multi-lingual, and multi-service mobile app that provides **access to high-impact services of various Government of India Departments and State governments**.
- The app has now grown to provide 2039 services. Citizens can find government institutions near them, such as mandis, blood banks, and more, at the touch of a button, thanks to the integration of UMANG with MapmyIndia Maps.
- The UMANG application has already started providing the following functionalities:
  - **Mera Ration:** helps users identify and navigate to the nearest Fair Price Shops.

- **eNam:** Through the 'Mandi Near Me' service on UMANG, users can identify and navigate to the nearby mandis pointed on the map.
- **'Damini Lightning Alerts'** service gives users a visual of nearby places where lightning has struck in the recent few minutes to offer lightning alerts.

#### 9. DigiLocker:

- Services like DigiLocker aim to **give citizens access to all their lifelong documents in a single digital wallet and all such government-issued citizen-centric proof documents are equally valid under Indian laws.**

#### 10. Agriculture:

- For Indian farmers, the deployment of **'Kisan drones'** and the push for technology driven agriculture would be beneficial in ensuring quality produce with procedures in place for regular checks.
- The use of the state-of-the-art drones for the purpose of spraying fertilisers, and monitoring yield and produce would aid the farmers in producing high-quality yield with reduced levels of labour.

#### 11. DESH STACK:

- Recently, the government has launched an **e-portal for a digital ecosystem for skilling and livelihood** known as DESH STACK which will aid in skilling, up-skilling, and reskilling, thus, playing a huge role in digitally empowering citizens.
- Besides this, the portal will also aid **potential job seekers to find relevant jobs and entrepreneurial opportunities.**

#### Conclusion

- As we have entered the **Amrit Kaal**, the 25 years leading up to the 100 years of independence, it is

clear that technology is and will be a catalyst in driving socio-economic progress.

## 23. PMGSY – Changing Nature of India's Rural Roads

*(GS3: Infrastructure: Energy, Ports, Roads, Airports, Railways, etc)*

### Context

- India lives in more than 6.5 lakh villages where 69 percent of her population is rural. The prime occupations of the rural population are – cultivation, agricultural labour, rural artisanry, retail business/small services, etc.
- The large size and share of the rural population, their prevalent socio-economic situations and the desired levels of quality of life demands an all-round improvement in the rural infrastructure.

### Need of Rural Connectivity

- Improved infrastructure is the key to achieve the **objectives of equitable and inclusive growth with social justice.**
- A strong rural road infrastructure ensures economic development through reduced cost of production and logistics, increased productivity, improved economies of scale, enhanced employment and improvement in public and private investments in rural farm and non-farm activities.
- It provides **better avenues of marketing of farm and non-farm products and services are facilitated** in a rural set up.
- **Infrastructure** is also considered as **one of the five inherent pillars of the Aatma Nirbhar Bharat** in addition to the **economy, system, vibrant demography and demand.**

### Rural Road Growth

- The country has the **second-largest road network** in the world. Rural road transportation has gradually increased over the years with the improvement in investments in projects connecting the villages with cities and towns.
- As of 2019, the total road length in the country was 63,71,847 km out of which rural road length was 45,41,631 km. The **share of the rural roads was the highest** at 71.27 percent, followed by district roads (9.94 percent), urban roads (8.5 percent), State highways (2.82 percent) and National Highways (2.08 percent) of the total road network in the country.

### PMGSY and All-Weather Rural Connectivity

- **'Rural Roads' is a State subject.** The Pradhan Mantri Gram Sadak Yojana (PMGSY), as a part of the poverty reduction strategy of the Government of India, was initiated in 2000.
- It is a **centrally sponsored scheme** to provide **connectivity to unconnected habitations of designated population size** (500+ in plain areas and 250+ in North-East, hill, tribal and desert areas as per **Census, 2001**).
- In respect to **most intensive integrated action plan (IAP) blocks** as identified by the Ministry of Home Affairs, the **unconnected habitations with a population of 100 and above** have been included under PMGSY.
- The Union Cabinet had approved in 2016 the implementation of a **Road Connectivity Project on Left-Wing Extremism Areas (RCPLWEA) as a separate vertical.** This initiative envisaged providing **connectivity to aspirational districts** expediting

development in backward areas of the nation.

- The roads laid under PMGSY need to be **maintained for 5 years by the same contractor.**
- The **Ministry of Rural Development** along with **state governments** is responsible for the implementation of PMGSY.

### Objectives:

- The spirit and the objective of the scheme is to provide **good all-weather road connectivity to unconnected Habitations.** A habitation which was earlier provided all-weather connectivity **would not be eligible** even if the present condition of the road is bad.
- The **unit for this Programme is a Habitation** and not a Revenue village or a Panchayat. A Habitation is a cluster of population, living in an area, the location of which does not change over time.
- The PMGSY shall **cover only the rural areas.**

### Use of Green Technology

- PMGSY promotes the use of new and green technology in the process of rural road construction. **Locally available materials** are used in road construction activities to promote cost effective and fast construction.
- Under **PMGSY-III**, the States have been asked to **propose at least 15% of the length of annual proposals under new and green technologies.** Using new & green technologies have resulted not only in **reduction of carbon footprint** but also in **savings of fuel and natural resources.**
- Some of the techniques and technologies used under PMGSY are as follows:

- Use of **cell filled concrete** to ensure flexible concrete and crack-free surface;
  - Use of **paneled cement concrete** to guarantee durability;
  - Use of **roller compacted concrete pavement** to enable simple, fast and economical construction with longer service life;
  - Use of **cement stabilisation** to improve soil strength, stability and to reduce maintenance cost;
  - Use of **Terrazyme** to reduce the construction costs while increasing the overall quality of road structures;
  - **Cold mix technology** uses cold mix binders (where heating of bitumen is not required) resulting in saving on fuel and the environment;
  - Use of 'Green Technologies' and nonconventional materials like **waste plastic, cold mix, geo-textiles, fly-ash, iron copper slag, etc.** in rural roads to ensure reuse of wastes.
- Rural Connectivity has remained a critical antecedent in the socio-economic development drives of rural people. Connectivity ensures **access to amenities** viz. education, health, marketing, etc.
  - There had been a **skewed and less than potential development** of the rural road network in the country.
  - Some of the major constraints and bottlenecks faced in providing rural connectivity are **insufficient funds** with States for rural roads, **unpredictability of funds** for rural roads, **inadequate maintenance** of rural roads by many States due to limited funds, **quality and specifications** not strictly adhered to the standards, layers of **informal sub-contracting** at the cost of quality, some roads constructed without bridges, etc.
  - The quality performance of rural roads relies on the following.
    - Discrepancies in District Rural Roads Plans (DRRPs) need to be removed and **scientifically collected information** on the population of habitations, connectivity status, road inventory with maps and a GIS empowered database should be ensured. Such state-specific information base on rural roads would help covering unconnected but eligible habitations under PMGSY.
    - The establishment of a **vibrant monitoring and accountability mechanism** is the need of the hour to check cases of undue advantage to road contractors and eliminate poor execution of such works.

### E-Maintenance Effort

- **PMGSY's Electronic Maintenance of Rural Roads (eMARG)** is an enterprise e-governance solution for road maintenance.
- Launched in 2019, eMARG is a **Geographical Information System (GIS)-based enterprise e-Governance solution**, which focuses on **safe and durable upkeep of PMGSY roads** in all types of circumstances and involves performance-based evaluation of roads for provisioning and ensuring appropriate maintenance-related payments.

### Issues and Challenges

- Keeping in view the fund requirements and fund position for maintenance, it may be necessary to **link the Finance Commission grant-in-aid with PMGSY work execution and maintenance.**
- Since most of the eligible rural habitations have been connected, it is required now to strengthen and widen its ambit further to include **major link routes which connect habitations to agricultural and rural markets, higher secondary schools and hospitals/health centres.**
- A synchronised approach is required to establish **rightful convergence with various other development oriented programmes** already in operation like programmes for alleviating poverty, generating gainful employment, ensuring social security, enhancing standard of health, hygiene, sanitation and education.

### Conclusion

- India's mission of a vibrant Aatma Nirbhar Bharat can be realised through a reinforced rural infrastructure. Better rural infrastructure – be it surface, air or water transports, telecom, rural marketing, warehouses, or water supply and power, is capable of facilitating better avenues for rural growth and of appropriately remunerating the activities of the farmers, manufacturers, and service providers in a rural setup.

## 24. Bharatnet: Bringing Broadband to Rural India

*(GS2: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures)*

### Context

- Internet connectivity in rural India has been increasing at a fast pace, with the rural internet user base growing around three times faster than its urban counterpart.
- According to the **Network Readiness Index-2021, India has jumped to 67 rank** in 2021 from 88 in 2020. **Rural tele-density has reached 59 percent in 2021.**
- Despite all the hurdles, India has been gradually expanding the rural internet connectivity. This estimate is further reinforced by the fact that we have 1.18 billion mobile connections in the country, with a sizeable number in the hinterland.
- Similarly, **data usage** has increased from 61.66 MB per subscriber per month in 2014 to 14.1 GB per subscriber per month in 2021.

### Mobile and Internet Services in Rural India

- The Government of India has approved various schemes under **Universal Service Obligation Fund (USOF).**
- In 2003, USOF was set up by The Indian Telegraph (Amendment) Act, 2003 which gave its **statutory status.** The main aim of USOF is to provide access to telecom services in a **non-discriminatory manner to people in the rural and remote areas.**
- Schemes under USOF are as follows:
  - As per Ministry of Home Affairs (MHA), **90 districts falling under 11 States are affected by Left Wing**

- **Extremism (LWE).** Under LWE scheme, numerous mobile towers have been installed in LWE areas and are providing services.
  - **Comprehensive Telecom Development Plan (CTDP) for mobile connectivity in the North-East Region (NER)** focuses on providing mobile coverage in uncovered villages and along with the National Highways.
  - **BharatNet project** aims at providing broadband connectivity in all the Gram Panchayats (approx. 2.5 lakh) in the country.
  - Laying of **submarine Optical Fibre Cable (OFC) between Chennai and Andaman & Nicobar Islands** for providing connectivity to Andaman & Nicobar Islands is also funded under USOF.
  - The government has also approved a proposal for provision of **submarine OFC Connectivity between Kochi and Lakshadweep Islands.** The project is under implementation and targeted to be implemented by 2023.

#### BharatNet Project

- The BharatNet project **aims to provide broadband/high speed internet connectivity to all the Gram Panchayats (GPs) in the country.**
- Special purpose vehicle **Bharat Broadband Network Ltd. (BBNL)** was formed in 2012 to lay out optical fibre network across 2.5 lakh Village Panchayats across the country using **USOF.**

- The infrastructure created under BharatNet project is a **national asset**, accessible on a non-discriminatory basis to all service providers, and the same can be utilised for provisioning of broadband/internet services through Wi-Fi Hotspots, Fibre to the Home (FTTH) connections, Dark Fibre, etc.
- As part of the BharatNet project, the **last mile connectivity** is being provided through WiFi or any other suitable broadband technology.

#### Moving to a Public-Private Partnership Model

- In 2021, the **scope of BharatNet was extended up to all inhabited villages beyond GPs**, along with approval for a **revised strategy for implementation** of BharatNet through **Public-Private Partnership (PPP) model**, covering 3.61 lakh villages including GPs across **16 states** of the country.
- These States are Kerala, Karnataka, Uttar Pradesh, Madhya Pradesh, Rajasthan, Punjab, Himachal Pradesh, Haryana, West Bengal, Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland and Tripura.
- Further, the Union Cabinet has also given **in-principle approval for extending village connectivity under BharatNet for all the remaining States/UTs.**
- The time-line for providing connectivity to all villages including GPs in the country under BharatNet was initially August 2023, now extended to **2025.**

#### Bridging the Rural-Urban Divide

- Extension of reach of BharatNet to all inhabited villages with reliable, quality, high speed broadband will enable **better access of e-services**

offered by various central and state government agencies.

- It will also **enable online education, telemedicine, skill development, e-commerce and other applications of broadband**, all of which are essential for rural India to be part of the Digital India initiative.
- Proliferation of broadband in rural areas will **bridge the rural-urban divide of digital access** and accelerate the achievement of Digital India.
- The penetration and proliferation of broadband is also expected to increase direct and indirect employment and income generation.

#### PM-WANI: An Additional Advantage

- Along with the BharatNet project, the government has approved the proposal to **proliferate broadband through Public Wi-Fi Networks** under the framework of **Prime Minister's Wi-Fi Access Network Interface (PM-WANI)**.
- The WiFi will be provided through **public data offices (PDOs)** for which there will be **no licence or any other fees**. The PDO, to be set up along the lines of a public calling office (PCO), can be a small shop; anyone can register as a PDO.
- This service will be especially useful in rural areas where Public Wi-Fi Hotspots are also being created under BharatNet.
- Proliferation of Public Wi-Fi Hotspots will lead to **increased employment for small and micro entrepreneurs**, and provide them with an **additional source of income**.

#### Conclusion

- During the COVID pandemic it was to internet connectivity that the country increasingly turned to keep the wheels of the economy moving.

Now, as the pandemic situation eases and life gradually becomes normal, the reliance on internet connectivity continues.

- While much has been done to expand rural internet infrastructure, much more needs to be done to bring reliable and accessible internet connectivity to the rural masses such that they do not miss out on the digital revolution.
- Even as the government expands the rural internet network through BharatNet and other programmes, it will also have to **address the problem of cost of access** to the internet so as to make it affordable enough to bridge the digital divide.

## 25. Railway Connectivity

*(GS3: Infrastructure: Energy, Ports, Roads, Airports, Railways, etc)*

#### Context

- Improved infrastructure always has a positive correlation with economic development. It is observed that **one percent increase in the stock of infrastructure is associated with one percent increase in Gross Domestic Product with remarkable multiplier effect**.
- Especially '**Railway Infrastructure**' is considered as an important contributing factor for regional, social, economic development of a country like India.

#### Growth and Trends in Indian Railways

- Railway provides various services for goods and passenger transportation. The increasing urbanisation and higher standard of living are driving the growth in the passenger segment; on other hand freight traffic has increased substantially due to growing industrialisation in the last decade.

- It is projected that by 2050, India will account for 40 percent of the global share of rail activity and hence would **need an investment of Rs. 50 lakh crore (by 2030) in railway infrastructure development.**
- For Indian Railways, **freight remains the major source of revenue** which accounted for around 65 percent of the total revenue generated in FY 20 whereas 35 percent are accounted for from the passenger segment.
- The **Economic Survey 2021-22** has stated that in the next 10 years, Indian Railways will see a massive capital expenditure under the **National Rail Plan for capacity expansion of the rail network by 2030.**
- It will ensure the creation of a future-ready railway system which will be able to meet the passenger demand as well as increase the modal share of railways in freight.

#### **Dedicated Freight Corridor**

- The dedicated freight corridor (DFC) project is one of the most ambitious projects undertaken by Indian Railways.
- It is being developed **along the Golden Quadrilateral (GQ) to link the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata, and the two diagonals of the quadrilateral they form (Delhi-Chennai and Mumbai-Kolkata).**
- These projects aim to **increase the rail share in the freight segment** by providing customised logistics services, creating additional rail infrastructure to cater to high levels of transport demand, and introducing time tabled freight trains and guaranteed transit times.

#### **PM Gati Shakti and Railways**

- PM Gati Shakti is a transformative approach driven by **seven engines**, namely, Roads, Railways, Ports, Airports, Waterways, Mass Transport and Logistics Infrastructure to spur economic growth and sustainable development.
- It will help in **developing world-class modern infrastructure and logistics** which will bring synergy by providing multi-modal integrated and seamless connectivity for movement of people, goods and services.
- Moreover, it is designed to generate various employment opportunities, cut-down on logistics cost, improve supply chains and make local goods globally competitive.
- The Government has announced plans to develop **one hundred PM Gati Shakti cargo terminals** for multimodal logistics facilities in the next three years.

#### **Aatma Nirbhar Bharat Initiative**

- After the 'Aatma Nirbhar Bharat' initiative introduced by the Government of India, the imports in the procurement of railway equipment dropped from 5.6 percent in 2013-14 to 1.5 percent in 2020-21. Further, more than 97 percent of the equipment required for the production of electric locomotives is being sourced domestically.
- As a part of 'Atma Nirbhar Bharat', 2,000 km of rail network will be brought under '**Kavach**', which is an **indigenously developed anti-collision system** with world-class technology to prevent accidents. Kavach will help railways to **achieve its goal of zero accidents.**

#### **Kisan Rail and Rural Upliftment**

- The commencement of 'Kisan Rail' is another important initiative to

**improve the freight business in general and provide a push to farmers in particular.**

- Kisan Rail also provides a **50 percent subsidy** in the freight segment. This helps in maintaining the supply chain and ensuring the availability of essential items including the agricultural products.
- This connectivity would ensure that farmers have **easy access to the market and get better prices for their produce** as compared to the existing local area markets.
- The concept of **'One Station, One Product'** has been introduced to help the farmers, agri entrepreneurs and local businesses and supply chains. It aims at providing opportunities to local artisans, potters, weavers/ handloom weavers, craftsmen, etc. to make a living through their skills and provide them with sale outlets at railway stations across the country.

### Green Fuel Initiatives

- Indian Railways is aiming to achieve **100 percent electrification of railway lines by December 2023**, thus reducing the carbon emission level and improving the functioning and system of transportation.
- This will make Indian Railway the **first major railway in the world to have a fully electrified broad gauge railway network of such a size.**
- Indian Railway is also progressing towards becoming the **world's largest green railway network by 2030**, with the target of becoming a **net-zero carbon emitter.**
- Indian Railway is gearing up to meet this target by expediting renewable energy initiatives, including setting up solar plants

and wind projects on unutilised railway land on a mega scale.

### Station Infrastructure Redevelopment Programme

- The Government of India has launched the station redevelopment programme, which aims to **redevelop 400 railway stations across India under a public-private partnership (PPP) model.**
- The programme will develop self-sustainable railway stations with high standards of safety, comfort, user-friendly passenger amenities, value-added services and efficiency by adopting the best technological practices.
- The station redevelopment programme is a **major element of the Smart Cities Mission**, which aims to reshape urban development and stimulate economic activity by offering opportunities for real estate development and development of multimodal transit hubs.

### Connecting the North-East and Mining Districts

- Further, a major initiative has been undertaken to boost rail connectivity in the northeastern region of the country as a part inclusive development. Under this initiative, the **entire rail network of the north-eastern states is being converted to broad gauge.**
- In addition, under its **'Mission Hungry for Cargo'** initiative, the Railways is **targeting a 45 percent modal share in freight transportation** from the current 27 percent.
- The Railways is also mapping the mining districts across the country to connect them with the rail network in a bid to bite into a bigger slice of the freight transportation pie. This will make

railways not only the cheapest but the most convenient transporter in this sector.

### Conclusion

- Indian Railways has undergone tremendous changes in terms of digitisation and innovation. The recent initiatives taken up by Indian Railways not only will reduce the cost of transportation in terms of time and money but also will act as a catalyst for regional and balanced growth.
- For its multi-faceted and multi-dimensional contribution, it is considered as 'Lifeline of India' and will help in enhancing people's capabilities, choices and quality of life.

## 26. Rural Youth – Shaping New India

*(GS2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections)*

### Context

- Youth constitute the majority share in India's population. India considers its youth a **demographic dividend** as well as a **development driver**.
- To tap this demographic dividend to optimum use, the government has to ensure that the youth have appropriate education and skills.

### Government measures related to Skill Development

#### 1. Skill India Mission:

- In 2015, Government of India launched the Skill India Mission to **empower the youth of the country with skill sets and make them more employable**.
- Skill India offers courses across 40 sectors that are aligned to the

standards recognised by the industry and the government under the **National Skill Qualification Framework**.

- More than one crore youth join the Skill India Mission every year.
- The mission has also played an important role in making India the **third largest startup ecosystem** in the world with more than 50,000 start-ups.

#### 2. Pradhan Mantri Kaushal Kendra:

- The Pradhan Mantri Kaushal Kendra (PMKK) is an initiative of the **Ministry of Skill Development and Entrepreneurship**. PMKKs are state-of-the-art training centres that have been set up in almost every district of the country for **imparting skill development training**.
- The objective of setting up the PMKKs is to help a large number of Indian youth take up **industry-relevant skill training** that would help them in securing a better livelihood.

#### 3. Pradhan Mantri Kaushal Vikas Yojana:

- Launched in 2015, the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) aims to **create a skilled and certified workforce** that could contribute not only to India's growth but help it in becoming the global skills capital.
- PMKVY has **three key components**:
  - **Short Term Training (STT)**: Under this component, training is given to unemployed youths or school/college dropouts in line with the National Skills Qualification Framework.
  - **Recognition of Prior Learning**: Under this module, assessment and certification is given to

applicants with existing skills or a prior learning experience.

- **Special Projects:** This module has been designed to create a platform that facilitates training for special job roles in government, corporate or industrial bodies.

- PMKVY 3.0 was recently launched by the Ministry of Skill Development and Entrepreneurship.

#### 4. Garib Kalyan Rozgar Abhiyan:

- In order to mitigate the impact of COVID-19 pandemic and provide **skill development training to reverse migrants**, the Government of India launched Garib Kalyan Rozgar Abhiyan (GKRA).
- This component has covered 116 districts of Assam, Bihar, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh.
- More than 1 lakh migrants have been trained/oriented under this programme.

#### 5. Deen Dayal Upadhyaya Grameen Kaushalya Yojana:

- The Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) is a **placement linked skill development programme for rural youth** under the National Rural Livelihoods Mission (NRLM).
- It was launched in 2014 to target youth, under the **age group of 15-35 years**.
- The motto of this scheme is to “Transform rural poor youth into an economically independent and globally relevant workforce”.
- DDU-GKY guidelines provide for **earmarking 50 percent of the funds for those belonging to the Scheduled Castes and Scheduled Tribes and 15 percent for minorities**.

- The scheme mandates that **one-third of those trained must be women**. There is an **age relaxation for women**. Women up to the **age of 45** can avail of training under this scheme.

#### 6. Rural Self Employment and Training Institutes:

- Another initiative of the **Ministry of Rural Development** under the **National Rural Livelihoods Mission (NRLM)** is skill development through Rural Self Employment and Training Institutes (RSETIs).
- These institutes are extending **skill and entrepreneurship development training programmes** to rural unemployed youth to facilitate them to employ themselves by commencing self-employment units/activities.
- The programme is currently being implemented in 28 States and 7 UTs and the **RSETIs are sponsored by 23 leading banks**. These banks are required to open at least one RSETI in their lead district to provide training to rural youth to take up self-employment/entrepreneurship ventures.
- RSETI programme runs with an approach of **short-term training and long-term handholding of entrepreneurs**. Rural poor people between the **age group of 18-45 years** are eligible to join the training.
- The RSETIs have become pioneers in capturing the aspirations of the rural poor youth and turning them into profitable entrepreneurs by training them in the domain and entrepreneurial skills.

#### 7. DigiSaksham:

- Recognising the competitive nature of the job market and expectations of employers, the government

launched DigiSaksham - a **digital skills programme** in 2021.

- The skills programme is aimed at **enhancing the employability of youth by imparting digital skills** required in an increasingly technology driven era.
- This joint initiative with **Microsoft India** is an extension of the government's ongoing programmes to support the youth from rural and semi-urban areas.
- The DigiSaksham initiative will enable jobseekers to access Microsoft learning resources such as programming languages, data analytics, software development fundamentals and advanced digital productivity on the **National Career Service (NCS) Portal**.
- The initiative gives priority to job-seekers from semi-urban areas who belong to disadvantaged communities and those who have been displaced or lost jobs due to COVID-19.

### 8. Khelo India Scheme

- Lastly, the Government of India is running several schemes to increase participation of the rural youth in sports.
- The Khelo India Scheme implemented by the **Ministry of Youth Affairs and Sports** promotes sports among the entire population.
- The scheme has a **dedicated vertical for promotion of rural and indigenous/ tribal games** by providing financial assistance to National Sports Federations/ Non Government Organizations (NGOs), etc for promotion of sports in the country.

### Conclusion

- Like there is no substitute for hard work, there is no alternative for skill sets. Students without skills have no value in the market.

- In view of this, skill-improving training must be included in the syllabus of diplomas/degrees to cater to the needs of industries.

## 27. Digital India

*(GS2: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures)*

### Context

- For the overall development of any country, development of its infrastructure is pertinent.

### Digital India Programme

- The Digital India programme, launched in 2015, is playing a revolutionary role in connecting India by bridging the rural and urban India divide. Its vision is to **transform India into a digitally empowered society and knowledge economy** by providing broadband highways and universal access to mobile connectivity.
- Digital India also aims to **ensure that government services are available to citizens** electronically and **public accountability** is ensured through mandated delivery of government's services electronically.
- The programme also aims to **provide digital literacy and digital services** to all citizens through universally accessible digital resources and services in several Indian languages and introduction of collaborative digital platforms, availability of all documents and certificates online and availability of all entitlements through cloud.
- Accordingly, the government has taken some key initiatives which include:

### 1. Aadhaar Enabled Payment System (AEPS):

- Developed by the **National Payments Corporation of India (NCPI)**, AEPS is a payment service based on an individual's Aadhaar card (one can use Aadhaar card instead of debit or credit cards) which enables the owner of the card to make **financial transactions** such as transfer funds, make payments, deposit cash, make withdrawals, etc.

### 2. MyGov:

- MyGov platform promotes **participatory governance by providing citizens an opportunity to voice their opinions in policy making and recommendations**. The platform provides a thriving space for discussions, tasks, talks, interactive polls and blogs on diverse issues related to governance and public policy.

### 3. National Mission in Education through ICT (NMEICT):

- The NMEICT is a **centrally-sponsored scheme** which aims to **leverage the potential of ICT in education** through teaching and learning processes in institutions for higher education.
- Under this mission, the government aims to use ICT interventions to **bolster enrolment rates in higher education** by creating a proper balance between the right content, **undertaking research** in imparting education and other critical areas, and **increasing connectivity** among other nations to share our progress and exchange of ideas.

### 4. SMART Cities:

- The Smart Cities Mission under the Digital India umbrella promotes conceptualisation and realisation of cities that have a **strong basic**

**infrastructure and promote sustainable, safe and inclusive development** for its residents by availing a clean, sustainable environment via application of 'Smart' solutions.

- As part of the initiative **100 cities** have been selected to address issues of pollution, increasing crime rates, congestion, poor living standards by creating better administrative and infrastructural systems through new technologies.

### 6. E-Pathshala:

- The **National Council of Educational Research and Training's (NCERT)** e-Pathshala is a platform to **disseminate educational resources through mobile app and website**.
- The platform offers educational resources, including NCERT textbooks for classes 1-12, audio-visual resources by NCERT, periodicals, supplements, teacher training modules and a variety of other print and nonprint materials.

### 7. Goods and Services Tax Network (GSTN):

- The **GSTN manages the IT system of the GST portal** and acts as the backbone of the GST system and acts as the core database for it. The network helps the government follow financial transactions and helps the tax-payers with GST registration, maintenance of tax details, etc.

### 8. Kisan Suvidha:

- The mobile application **disseminates relevant information to farmers** regarding weather, market prices, plant protection, inputs, weather alerts, go-downs and storages and market-related information.

### 9. Government e-Marketplace (GeM):

- GeM is an e-marketplace initiative that enables government departments and public sector entities to **procure common use goods and services**.
- The users of this marketplace are state and central government ministries and departments, public sector undertakings, local bodies and autonomous institutions.

### 10. Crime and Criminal Tracking Network Systems (CCTNS):

- CCTNS is a project under the National e-Governance Plan of the Government of India. It aims at **creating a system that is comprehensively integrated to enhance the efficiency of policing** through a creation of a nation-wide networking infrastructure for the evolution of IT-enabled highly efficient tracking system around the investigation and detection of crimes and criminals.

### Conclusion

- In the past years, India has changed its operating landscape in making digital more accessible and friction free.

## 28. Gender Budgeting

*(GS1: Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies)*

### Context

- Gender budgeting is a policy with a primary goal of **re-orienting the allocation of public resources, advocating for an advanced decision-making role for women** in important issues, and **securing equity in the distribution of resources between men and women**.
- Gender budgeting remedies the disadvantages and discrimination against women by incorporating

them in the budgetary process and fighting marginalisation and exclusion from economic, political, and constitutional processes.

### How is it done?

- Gender budgeting is **not a separate budget for women**; rather it is a **dissection of the government budget** to establish its gender-specific impact and to translate gender commitments into budgetary commitments.
- Gender Budgeting looks at every part of the government budget to assess how it will address the different needs of women and men, girls and boys, and different groups of women and men, girls and boys.
- For example, in the area of health, male and female people will have similar needs in respect to influenza and malaria. But **women will have greater needs than men in terms of reproductive health**.

### Need for Gender Budgeting

- Gender Budgeting serves varied purposes. These include, among others:
  - identifying the needs of women and reprioritising expenditure to meet these needs;
  - supporting gender mainstreaming in macroeconomics;
  - strengthening civil society participation in economic policymaking;
  - enhancing the linkages between economic and social policy outcomes;
  - tracking public expenditure against gender and development policy commitments; and
  - contributing to the attainment of the Sustainable Development Goals (SDGs).

### Scope for Gender Budgeting

- Generally, budgeting involves **four components**:
  - the budgetary allocation of resources to various heads,
  - the actual Government outlays on various heads,
  - an accounting of how resources are utilised for a particular purpose and
  - an evaluation of the effectiveness of the resources utilised in delivering the intended results.
- Gender budgeting involves looking at all the four components from the **point of view of women as beneficiaries**.
- Gender Budgeting can also be done and used by **people outside the government** such as in women's organisations, non-governmental organisations, academia, the donor community, the legislature, as well as by ordinary citizens.
- For those outside government, Gender Budgeting can encourage **transparency, accountability and participation, and facilitate better advocacy**.

### Gender Budgeting in India

- The goal of Gender Budgeting in India is to **ensure greater efficiency and gender equity in fiscal policy**.
- Since 2005–06, the Expenditure Division of the Ministry of Finance has been issuing a **note on Gender**

**Budgeting** as a part of the Budget Circular every year.

- The gender budget statements have helped to ensure that budgets include allocations in both national and state governments for women's development, and this has led to more transparency and accountability in the budget exercises.
- In 2016, the Cabinet Committee on Economic Affairs approved the **Pradhan Mantri Ujjwala Yojana Scheme** for providing free LPG connections to women. This is a good example of how a prima facie gender-neutral ministry like the Ministry of Petroleum and Natural Gas can design a policy to address women's needs.

### Conclusion

- Gender Budgeting has **both expenditure as well as revenue side**. The revenue side is still in the nascent stages. The revenue side of the gender budget should also be strengthened to empower women through **innovative taxation policies**.
- Quantum of budgetary allocation for women focused schemes vis-a-vis total budgetary allocation should be increased and at the same time implementation of the policies should be monitored.

## Model Questions

1. Biosphere reserves are the living examples that humans can coexist with nature. In the above context discuss the importance of biosphere reserves.
2. Discuss the aspects of the government's National Cyber Security Strategy after analysing the necessity for one.
3. Poor governance adds to the woes of the already overburdened Indian Judiciary. Comment.
4. Critically analyze the recent proposal to bring an urban model of the MGNREGA scheme.
5. Does GST go hand-in-hand with the principle of cooperative federalism? Discuss with respect to the recent Supreme Court's ruling on recommendations of the GST council.
6. Briefly analyse the role of Emigrants in the development of Indian economy.
7. Governor plays an important role in the constitutional machinery of the state. Discuss various provisions mentioned in the constitution for approving the bill passed by the state assemblies.
8. Private players and Government must work together for the development of R&D in India. Critically analyse.
9. Discuss the ethical problems related to the rights of unborn children in the light of formal legislations such as the Medical Termination of Pregnancy Act.
10. Do delimitation punish the states that controlled the population? Substantiate your views.
11. Discuss how promoting millets can help in tackling the issues of climate change and malnutrition.
12. Hidden hunger is one of the severe problems faced by the country these days. Analyse how diversifying the nutrition system can reduce it and help in reaping the demographic dividend that it possess.
13. It is usually believed that exports are good for the development of a country and its growth. Critically analyze the statement with the concept of Export of Carbon emissions-embodied products.
14. Discuss the reasons associated with India's poor female labour force participation (FLFP) rates and suggest how more women participation in workforce can be achieved?
15. Critically analyse the role of Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 in undoing the "historic injustice" meted out to forest-dependent communities.

16. Analyse the challenges posed by anthropogenic impacts on marine ecosystem. Also discuss measures required to be taken to combat these threats.
17. Can BIMSTEC overcome the challenges it face and function as an alternative to SAARC? Critically analyse.
18. What is Social security? Discuss the initiatives of Government of India in providing a safety net for the farmers.
19. What are the salient features of the Rights of Persons with Disabilities Act, 2016? How has it helped in achieving an inclusive society for Persons with Disabilities?
20. Discuss the mitigation & adaptation measures for tackling the twin crisis of global warming and climate change from local, regional to global scale.
21. Discuss the reasons for abysmally low rates of adoption of children in India. Also Suggest measures to improve the current scenario.
22. Do you agree that digital technology has the potential to solve problems in critical socio-economic areas. Give reasons in support of your answer.
23. Critically analyse the role of Pradhan Mantri Gram Sadak Yojana in achieving the objective of equitable and inclusive growth with social justice.
24. Discuss the main objectives of BharatNet Project and suggest measures for its effective implementation.
25. Indian Railways is considered 'Lifeline of India' in promoting regional and balanced growth. Analyse the challenges, advantages and disadvantages of privatisation of Indian Railways.
26. "Demographic dividend may turn into liability in absence of skilled workforce". Discuss in the light of India's experience.
27. Critically analyse the role of Digital India Mission in bridging the rural and urban India divide and transforming India into a digitally empowered society.
28. What is Gender Budgeting? How Gender Budgeting in India can ensure greater efficiency and gender equity in fiscal policy?