

CLIMATE CHANGE

The Climate Change Generation

- ❖ **CONTEXT:** Recently, India presented its Long-Term Low Emissions and Development Strategies (LT-LEDS) at COP27. This document outlines priorities for carbon-intensive sectors such as electricity, industry, and transportation, as well as the role of a Lifestyle for Environment (LiFE) as a mass movement toward sustainable consumption and production.
- Education plays a critical role in the LiFE movement, from individual behavioral shifts to market reshaping. This could make a significant difference in reducing greenhouse gas emissions.
- According to the Intergovernmental Panel on Climate Change (IPCC), demand-side actions have the potential to reduce greenhouse gas emissions by 40-70 percent by 2050.
- **27th Conference of Parties (CoP27)**
 - The Conference of Parties (COP) is the UNFCCC's supreme decision-making body.
 - The agreement aims to keep global warming well below 2°C, preferably 1.5°C, compared to pre-industry levels.
 - COP27 was labelled as a "implementation" conference because countries were determined to resolve outstanding issues regarding climate finance.
 - This refers to funds committed by developed countries to developing countries to assist them in transitioning their economies away from fossil fuels, building resilient infrastructure to climate shocks, and gaining access to technologies that will enable widespread use of renewable energy.
- **Long-Term Low-Emissions Development Strategy**
 - The 2015 Paris Agreement requires all parties to develop long-term low greenhouse gas emissions development strategies (LT-LEDS) based on their respective responsibilities and capabilities in light of the various national-level circumstances.
 - The COP26, held in Glasgow in November 2021, required parties who had not yet communicated their LT-LEDS to do so by COP27.
 - India's LT-LEDS was developed following extensive consultations with various government entities, state governments, research institutes, and civil society organizations.
 - The Union Minister for Environment, Forests, and Climate Change, Shri Bhupender Yadav, who led the Indian delegation to COP 27 in Sharm-el-Sheikh, Egypt, launched the Long-Term Low-Emission Development Strategy.
- **Challenges faced by Education Sector**
 - The education sector and children are facing a number of challenges. First, school closures during the pandemic have resulted in a learning deficit, which is reflected in lower test scores. Long-term productivity and per capita income levels are likely to suffer as a result.
 - According to a paper published by the Organization for Economic Cooperation and Development, one year of school closures could reduce GDP by 1.1 to 4.7 percent by mid-century. The long-term effects of Covid-19 could impede economic mobility for a generation of Indians and change the math for public finance.
 - Global climate change is already interfering with children's learning and well-being. For example, extreme heat reduces students' learning levels and causes physiological harm. Schools are temporarily closed, and children's health suffers as a result of Delhi's persistently poor air quality.
 - Debilitating floods are permanently displacing families, often leading to children (disproportionately girls) dropping out of school and being trafficked or subjected to child labor due to low household incomes.
 - As these disasters become more frequent and severe, we must prepare the infrastructure, content, and delivery of the public education system to protect the most vulnerable citizens, many of whom will become climate refugees.
 - Young people are feeling despair and dread as a result of their lived experiences with climate-related disasters and anxiety about the future. This is exacerbated by digital platforms and news cycles that don't linger long enough to make sense of challenges or build widespread understanding of breakthroughs like significant reductions in renewable energy costs.
- **Climate-resilient Education System for India**
 - The educational system should be used to both prevent crises and shape opportunities. A strong enabling framework for a climate-resilient education system at the national level could cover topics ranging from curricula to nutrition to school building codes in a climate-changed world.
 - With its size and reach, the public school system provides not only education but also shelter, clothing, food, and community for millions of people.
 - Building on a recent UNICEF paper, India should develop this framework through a consultative process with educators, students, humanities and science experts, and relevant ministries and departments.
 - Design and implementation in states and districts should be guided by existing local needs and anticipated climate risks.
 - This could include infrastructure investments so that school buildings can double as emergency shelters in cyclone-prone areas, as well as capacity additions so that government schools in megacities that are destinations for climate migrants can integrate and empower children.

- Children everywhere should have access to clean water and nutritious food.
- Students' mental health needs should be met through empathic expansion and an emphasis on social and emotional learning.
- **Innovative Initiatives Underway**
- Curricula can be infused with scientific and technological know-how, as well as indigenous and local knowledge. There are already innovative initiatives underway in some areas where non-governmental organizations are adding tremendous value through contextualization and close collaboration with communities.
 - ✓ These efforts range from the buffer zone of Kanha National Park, where Baiga and Gond students are learning about the potential of integrating biodiversity conservation with regenerative agriculture,
 - ✓ to the by-lanes of Bengaluru, where youth are taking civic and climate actions ranging from waste management to lake restoration to make their city more liveable.
- **Way ahead**
- Climate education should be provided throughout society rather than just at the primary and secondary levels. The importance of retraining workers in industries with a limited future in a green economy has recently been emphasized.
- Instead of replicating a broken development paradigm based on an extractive relationship with nature, India can lead with a more sustainable approach that benefits both people and the planet.
- A climate-resilient education system will be required to capitalize on this opportunity. This will allow Indians to transition from vulnerability to agency, for forest-dwelling youth to become entrepreneurs in a nature-based economy, and for children displaced by climate-related disasters to receive transformative education and be on paths to green jobs.
- The overarching imperative should be to foster critical thinking rather than rote learning so that the next generation can embrace complexity and make informed decisions. While we must strive for abundance and equity, societies and individuals will almost certainly have to deal with scarcity and trade-offs.
- Every aspect of a green economy, from consumer choices to innovation to policy to finance, will be supported by a strong, climate-resilient education system. This could be the most important enabler of a uniquely Indian lifestyle for the environment that taps into our civilisational richness and becomes a model and movement to be emulated by the rest of the world.

PRELIMS

1. Tribal Development Report 2022

❖ **CONTEXT: The Tribal Development Report 2022, published by the Bharat Rural Livelihood Foundation (BRLF)**

- According to the 2011 Census, tribal communities in India account for 8.6 percent of the country's population.
- According to a new report released, even after 75 years of independence, they remain at the bottom of the country's development pyramid.
- The Tribal Development Report 2022, published in two volumes by the Bharat Rural Livelihood Foundation (BRLF), claims to be the first of its kind since 1947.

➤ **The report**

- The Bharat Rural Livelihoods Foundation published the first Tribal Development Report 2022, which was written by prominent academics, thematic experts, and practitioners and published by Routledge and CRC Press.
- The first-of-its-kind Tribal Development Report is published in two volumes. It focuses on the status of tribal communities in India and Central India in terms of livelihoods, agriculture, natural resources, economy, migration, governance, human development, gender, health, education, art, and culture. Central India is home to 80 percent of the country's tribal communities.
- This report combines data from government sources, case studies, archival research, and interviews on critical aspects of tribal lives and livelihoods. The goal is to educate stakeholders, including key policymakers, practitioners, activists, and academics, about the scope of tribal issues.
- The Tribal Development Report focuses on the overarching theme of Livelihoods for tribal communities in central India and provides a status report on the overall macroeconomic situation, agriculture, land, energy, and water use, particularly groundwater management.

➤ **Findings**

- It is critical to understand the unique characteristics of tribal communities in order to develop policies for them.
- Many tribal communities prefer isolation and silence. They are shy and will not reach out to the outside world on their own. Policymakers and leaders in the country must understand this trait and then work for the welfare of Adivasis in order to better connect with them.
- Tribal areas have also seen a lot of disruption and conflict. This is one of the reasons why many government welfare schemes and policies fail to take off in these areas. The area's distress affects both sides.
- According to the report, indigenous communities in India have been pushed further away from alluvial plains and fertile river basins, into the country's harshest ecological regions, such as hills, forests, and drylands.

- Of the 257 Scheduled Tribe districts, 230 (90%) are forested, hilly, or dry. However, they constitute 80% of India's tribal population.
- **Adivasi Sub-Districts**
- Adivasi sub-districts are part of a larger contiguous backward region or Adivasi belt that extends beyond the state, district, and sub-district administrative categories.
- Mapping of predominantly Adivasi-concentrated sub-districts "indicates a continuum of pockets of underdevelopment that are linked to one another and to the larger development processes around them."
- During British colonial rule, the bond between Adivasis and their symbiotic relationship with their immediate environment was severed.
- After the Forest Conservation Act was passed in 1980, the conflict was framed as one between environmental protection and the needs of local Adivasi communities, creating a schism between people and forests.
- Domestic needs of local people were explicitly recognized for the first time in the National Forest Policy of 1988.
- The Policy emphasized the importance of preserving their customary rights and involving Adivasis in forest protection. However, the shift toward a people-centered perspective has not been matched by reality on the ground.
- 2. **Supreme Court floats idea of 'Project GIB'**
- ❖ **CONTEXT:** Hearing a plea to protect the endangered bird Great Indian Bustard (GIB), the Supreme Court asked if a 'Project GIB', on the lines of 'Project Tiger', could be launched. "We had that Project Tiger, is it not possible to have some mechanism to bring focus on GIB like having 'Project Great Indian Bustard'?" the bench said.
- **What is the Great Indian Bustard?**
- This large bird, found mainly in Rajasthan and Gujarat, has been categorised as critically endangered by the International Union for Conservation of Nature (IUCN).
- While the GIBs' historic range included much of the Indian sub-continent, it has now shrunk to just 10 per cent of that. Among the heaviest birds with flight, GIBs prefer grasslands as their habitats. The terrestrial birds spend most of their time on the ground, feeding on insects, lizards, grass seeds, etc. GIBs are considered the flagship bird species of grassland and hence barometers of the health of grassland ecosystems.
- **Why is the Great Indian Bustard endangered?**
- Among the biggest threats to the GIBs are overhead power transmission lines. Due to their poor frontal vision, the birds can't spot the power lines from a distance, and are too heavy to change course when close. Thus, they collide with the cables and die.
- According to the Wildlife Institute of India (WII), in Rajasthan, 18 GIBs die every year after colliding with overhead power lines.
- **Great Indian Bustard: Conservation efforts**
- The Supreme Court in April 2021 ordered that all overhead power transmission lines in core and potential GIB habitats in Rajasthan and Gujarat should be made underground.
- During recent hearing, the court sought reports from the chief secretaries of Rajasthan and Gujarat in six weeks on installation of bird diverters (reflector-like structures strung on power cables) in priority areas. It also asked them to assess the total length of transmission lines that need to go underground in the two states.
- Also, in 2015, the Centre had launched the GIB species recovery programme. Under this, the WII and Rajasthan forest department jointly set up breeding centres where GIB eggs harvested from the wild were incubated artificially.
- 3. **World Bank report on heat waves in India**
- ❖ **CONTEXT:** The World Bank has said in a report from 2030, 160 million to 200 million people can be exposed to lethal heat waves in India every year, and nearly 34 million Indians will face job losses due to heat stress-related productivity decline. By 2037, the demand for cooling is likely to be eight times more than the current level.
- According to the report, "Climate investment opportunities in India's cooling sector", this could open an investment opportunity of \$1.6 trillion by 2040, besides reducing greenhouse gas emissions significantly and creating 3.7 million jobs.
- With the demand for cooling shooting up, there will be a demand for a new air-conditioner every 15 seconds, leading to an expected rise of 435% in annual greenhouse gas emissions over the next two decades. Thus, there is a need to shift to a more energy-efficient pathway which could lead to a reduction in expected CO2 levels.
- The report proposes a road map to support India's India Cooling Action Plan (ICAP), 2019, through new investments in three major sectors: building construction, cold chains and refrigerants.
- Adopting climate-responsive cooling techniques as a norm in both private and government-funded constructions can ensure that those at the bottom of the economic ladder are not disproportionately affected by rising temperatures. The report suggests that India's affordable housing programme for the poor, the Pradhan Mantri Awas Yojana (PMAY), can adopt such changes on scale.
- It proposed enacting a policy for "district cooling", which could lead to the consumption of 20-30% less power than the most efficient conventional cooling solutions.

- ✓ District cooling technologies generate chilled water in a central plant which is then distributed to buildings via underground insulated pipes. This brings down the cost for providing cooling to individual buildings.
- Apart from this, guidelines for implementation of local and city-wide urban cooling measures such as cool-roofs should also be considered. "India's cooling strategy can help save lives and livelihoods and reduce carbon emissions.
- **India Cooling Action Plan**
- The India Cooling Action Plan (ICAP) provides an integrated vision towards cooling across sectors encompassing, reduction of cooling demand, refrigerant transition, enhancing energy efficiency and better technology options by 2037-38 through forging synergies with on-going programmes/ schemes of the Government.
- Steps have been taken to implement the recommendation of various thematic areas of the ICAP:
 - With regard to reduction of cooling and energy demand in Space Cooling in building sector, a list of action points have been finalised after mapping of the recommendations of the India Cooling Action Plan with the ongoing government programmes/ schemes of the various Ministries.
 - Towards promoting passive cooling in buildings, Bureau of Energy Efficiency (BEE) has brought out the Energy Conservation Building Code (ECBC) for all large commercial (non-residential) buildings and Eco-Niwas Samhita (ECBC-R) for the residential buildings.
 - Studies on promoting non-Ozone Depleting Substances (ODSs) and low Global Warming Potential based technologies in Cold Chain, Building sector and Public Procurement have been undertaken and reports have been published.
 - To promote indigenous development of low global warming potential refrigerants, the Department of Science and Technology, Government of India has funded a research project to the Council of Scientific and Industrial Research (CSIR)- Indian Institute of Chemical Technology, Hyderabad.
 - Indian Institute of Technology, Delhi, in collaboration with Bureau of Indian Standards has undertaken a simulation study for developing safety standards for flammable refrigerants in the Refrigeration and Air-conditioning sector.
 - Up-skilling and certification of 43,450 Refrigeration and Air-conditioning (RAC) service technicians has been undertaken under the national skill qualification framework (NSQF) of the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) of the Ministry of Skill Development and Entrepreneurship (MSDE). In addition, 29,000 RAC service technicians are being trained as part of implementation of Hydrochlorofluorocarbons (HCFCs) phase out Management Plans under the Montreal Protocol.
- 4. **Maternal Mortality Ratio (MMR)**
- ❖ **CONTEXT: There has been a significant decline in the Maternal Mortality Ratio (MMR) in the country.**
 - As per the Special Bulletin on MMR released by the Registrar General of India (RGI), the Maternal Mortality Ratio (MMR) of India has improved further by a 6 points and now stands at 97/ lakh live births.
 - ✓ The Maternal Mortality Ratio (MMR) is defined as the number of maternal deaths during a given time period per 100,000 live births.
 - As per the statistics derived from Sample Registration System (SRS), the country has witnessed a progressive reduction in MMR from 130 in 2014-2016, 122 in 2015-17, 113 in 2016-18, 103 in 2017-19 and to 97 in 2018-20.
 - Upon achieving this, India has accomplished the National Health Policy (NHP) target for MMR of less than 100/lakh live births and is on the right track to achieve the SDG target of MMR less than 70/ lakh live births by 2030.
 - The progress made in terms of the number of states which have achieved Sustainable Development Goal (SDG) target, the number has now risen from six to eight leading with Kerala (19), followed by Maharashtra (33), then Telangana (43) and Andhra Pradesh (45), subsequently Tamil Nadu (54), Jharkhand (56), Gujarat (57) and lastly Karnataka (69).
 - Since 2014, under the National Health Mission (NHM), India has made a concerted effort to provide accessible quality maternal and newborn health services and minimize preventable maternal deaths.
 - The National Health Mission has made significant investments to ensure provision of healthcare services, particularly for effective implementation of the maternal health programs to accomplish the specified MMR targets.
 - Government schemes such as "Janani Shishu Suraksha Karyakram" and "Janani Suraksha Yojana" have been modified and upgraded to more assured and respectful service delivery initiatives like Surakshit Matritva Aashwasan' (SUMAN).
 - Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) is particularly lauded for its focus on identifying high-risk pregnancies and facilitating their appropriate management. This had a significant impact on mitigating preventable mortality.
 - LaQshya and Midwifery initiatives concentrate on promoting quality care in a respectful and dignified manner ensuring choice of birthing to all pregnant women.

- India's efforts in successfully lowering the MMR ratio provides an optimistic outlook on attaining SDG target of MMR less than 70 much before the stipulated time of 2030 and becoming known as a nation that provides respectful maternal care.

ANSWER WRITTING

Q. Given the diversities among tribal communities in India, in which specific contexts should they be considered as a single category?

- Government of India Act 1935 included members of the community living or dependent on the forest, in a single category called Scheduled Tribe (STs).
- The tribals in India have a very broad diversity ranging from matriarchal khasis of the Meghalaya and patriarchal tribes of the Rajasthan and Gujrat. They also differ on the basis of the origin like African origin Siddis of Gujarat and indigenous tribes of Andaman and Nicobar like sentinels.
- Apart from the constitutional and legal provisions to include STs in a single category, there are several socio-economic grounds which binds them in a single category. Like:
 - They are usually geographically isolated.
 - They follow similar religious practices like tattoo, amulets, and Jewlery and belief in magic.
 - Usually, they worship their common ancestors and nature worship is common among them.
 - They are mostly dependent on the forest for their livelihood and have unanimity with nature for a well-balanced environment.
 - Their social structure is less stratified compared to caste and have egalitarian structure.
 - They have an animistic belief system.
 - Most of them are territorial groups and dedicated to their own tribe and culture.
 - Most of them are practicing primitive occupations like shifting cultivation, etc.
 - They have most indigenous political organization i.e., the council of the elders like sabhas and samitis of the vedic period.
 - Their society is usually self-reliant and self-sufficient.
 - Most of them are different from mainstream society.
- Dr. Ambedkar had also advocated their distinct socio-religious and cultural practice and demanded to include them in a separate, single and distinct category.

MCQs

- Which of the following best describes/ describe the aim of the 'Green India Mission' of the Government of India?
 - Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing green accounting.
 - Launching the second green revolution to enhance agricultural output so as to ensure food security for one and all in the future.
 - Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

Select the correct answer using the code given below:

- 1 only
 - 2 and 3 only
 - 3 only**
 - 1, 2, and 3
- With reference to National Cooling Action Plan consider the following
 - It seeks to recognize "cooling and related areas" as a thrust area of research under National S&T Programme.
 - It also seeks to reduce cooling energy requirements by 25% to 40% by 2037-38.
 - Training and certification of servicing sector technicians, in synergy with Skill India Mission.
 - In line with Montreal Protocol, the plan emphasis on cutting those elements that deplete ozone layer.
- Which of the above statement/s is /are correct?
- 1 and 2 only
 - 2 and 3 only
 - 2 and 4 only
 - 1,2,3 and 4**
- India is a signatory to major global environmental conventions and treaties including how many of the following?
 - Stockholm Convention on Persistent Organic Pollutants.
 - Minamata Convention on Mercury.
 - Convention on International Trade in Endangered Species of Wild Fauna and Flora.
 - Convention on the Conservation of Migratory Species of Wild Animals.

Choose the correct answer using the codes given below

- Only one
- Only two
- Only three
- All the four**

4. With reference to the Long-Term Low Emission Development Strategy, consider the following statements:
1. India recently submitted its Long-Term Low Emission Development Strategy to the United Nations Framework Convention on Climate Change (UNFCCC), during the 27th Conference of Parties (COP27).
 2. The focus will be on the rational utilization of national resources with due regard to energy security.

Which of the statements given above is/are not correct?

- a) 1 only
 - b) 2 only
 - c) Both 1 and 2
 - d) **Neither 1 nor 2**
5. Recently a report called Tribal Development Report 2022 has been released by which of the following?
- a) **Bharat Rural Livelihood Foundation (BRLF)**
 - b) NITI Ayog
 - c) Ministry of Tribal Affairs
 - d) Ministry of Rural development

6. Consider the following statements regarding Great Indian Bustard.
1. Great Indian Bustard is considered the flagship grassland species, representing the health of the grassland ecology.
 2. It is one of the heaviest flying birds.
 3. In India, Rajasthan is home to a greater number of Great Indian Bustard.
 4. It is critically endangered according to IUCN.

Which of the above statements is/are correct?

- a) 1, 2 and 3 only
 - b) 1 and 2 and 4 only
 - c) 2 and 3 only
 - d) **1, 2, 3 and 4**
7. Kirit Parikh panel recently seen in news is related to which of the following?
- a) **Gas price review**
 - b) Industry growth
 - c) Special economic zone
 - d) Climate change impact on agriculture

8. Consider the following statements about Manthan platform recently seen in news
1. It is a joint initiative of NITI Aayog and Ministry of Science and Technology.
 2. It is an India's exclusive platform for driving R&D collaboration at scale and achieving India's scientific missions and UN SDGs.
 3. Recently it has been awarded as best tech initiative of the year.

Choose the incorrect statements:

- a) **1 and 3 only**
- b) 2 and 3 only
- c) 2 only
- d) 1, 2 and 3

9. Consider the following statements regarding Maternal Mortality in India.
1. Maternal mortality ratio is measured as the number of maternal deaths per lakh live births.
 2. Kerala is the only state in India to achieve the sustainable development goals target of 70 per 100,000 MMR.
 3. India has witnessed a progressive reduction in MMR in last five years.

Which of the above statements is/are correct?

- a) 1 and 2 only
 - b) 2 and 3 only
 - c) 1 and 3 only
 - d) **1, 2 and 3**
10. Which Ministry has launched LaQshya Initiative?
- a) Ministry of Women and Child Development
 - b) Ministry of Education
 - c) **Ministry of Health and Family Welfare**
 - d) Ministry of Youth Affair and Sports