



Biodiversity & Environment

Climate Change Performance Index 2024

Tags:

- **GS Paper - 3**
- **Conservation**
- **Environmental Pollution & Degradation**

For Prelims: Climate Change Performance Index 2024, Greenhouse gas emissions, Renewable Energy, G20, National Action Plan on Climate Change, National Solar Mission, Nationally Determined Contributions (NDC), Panchamrit, National Adaptation Fund on Climate Change, Performance Metrics of Climate Change Performance Index.

For Mains: Major Takeaways From CCPI 2024, Major Challenges Related to Climate Change in India.

Why in News?

India's secured **7th position** in recently released Climate Change Performance Index (CCPI) 2024 underscoring its notable role and contribution in the ongoing global efforts aimed at mitigating climate change.

What are the Major Takeaways From CCPI 2024?

- **About:** CCPI, published annually since 2005, is an independent monitoring tool for tracking countries' climate protection performance. It increases **transparency in national and international climate policy** and enables comparison of individual countries' climate protection efforts and progress.

- It is published by **Germanwatch, the NewClimate Institute, and Climate Action Network International.**
- It indicates the **climate mitigation efforts of 63 countries and the EU**, which collectively account for over **90% of global greenhouse gas (GHG) emissions.**
- **Performance Metrics:** The CCPI evaluates countries across four key categories: **Greenhouse Gas (GHG) Emissions (40%), Renewable Energy (20%), Energy Use (20%), and Climate Policy (20%).**
- **CCPI 2024:** No country performed well enough in all index categories to achieve an overall very high rating. The **first three overall positions therefore remain empty.**
 - **Denmark** claimed the 4th spot, **Estonia** followed in 5th place, and the **Philippines** secured the 6th position among the top ranks.
- **India's Ranking in CCPI 2024:** India secured the 7th position in the **CCPI 2024**, exhibiting a stride forward from 8th spot in **CCPI 2023**. Interestingly, due to the **absence of countries in the first three spots**, India effectively stands 4th in global climate performance.
 - **India's Score and Rankings in Key Categories:**
 - **GHG Emissions & Energy Use:** India ranked 9th in **GHG Emissions** and 10th in **Energy Use** among assessed countries, largely attributed to its lower per

capita energy use, a factor bolstering its climate standing.

- Also, in the per capita GHG category, the country is on track to meet a benchmark of well below 2°C.
- **Climate Policy:** India secured the **10th spot in Climate Policy**, showcasing moderate progress compared to its performance in previous assessments.
- **Renewable Energy:** India's performance showed a more moderate rank, standing at 37th, barely remaining within the 'high' performance category.
 - This position marks a decline from the **24th spot in CCPI 2023**.
- **Global Context and Comparative Analysis:**
 - **Global Trends:** The CCPI report highlighted a concerning trend, despite the urgency to decarbonize, **global GHG emissions have increased in 2022, with atmospheric CO2 levels soaring 50% higher** than pre-industrial levels.
 - **G20-performance:** With **India (7th)**, **Germany (14th)**, and the **EU (16th)**, only three G20 countries/regions are among the high performers in CCPI 2024.
 - The G20 members account for **more than 75% of the world's greenhouse gas emissions**.
 - **Developed Countries:** Notably, many developed countries including the **United Kingdom, the United States, Italy, and others**

showcased poorer performances compared to the CCPI 2023, reflecting a lack of substantial progress in countering climate change.

Note

The report also emphasizes **oil, and gas to meet its energy needs**, despite efforts to promote renewable energy. This reliance contributes significantly to GHG emissions and severe air pollution in cities.

What are the Major Challenges Related to Climate Change in India?

- **Water Scarcity: Changing rainfall patterns and melting glaciers** threaten India's water security. According to NITI Aayog, best estimates indicate that India's water demand will exceed supply by a factor of two by 2030.
- **Agricultural Vulnerability:** Climate change affects crop patterns, **leading to reduced yields** and affecting food security. Increased temperatures and extreme weather events like floods and droughts disrupt farming.
 - According to a **2019** study, extreme weather events cause annual crop losses of about **0.25% of India's GDP**.
- **Rising Sea Levels:** Coastal regions, including major cities like **Mumbai and Kolkata**, face threats from rising sea levels. This endangers infrastructure, habitats, and the livelihoods of millions.
 - It is estimated that India could **lose about 1,500 square kilometers of land by 2050** due to erosion caused by rising seas.
- **Air Pollution:** India struggles with severe air quality issues, primarily due to vehicular emissions, industrial pollution, **and crop burning**. Climate change exacerbates this problem, impacting public health and ecosystems.

- According to a **2022 report**, India's average **PM2.5 concentration** was **53.3 micrograms** per cubic meter ($\mu\text{g}/\text{m}^3$). This is more than **10 times the World Health Organization's (WHO) recommended annual guideline level of $5 \mu\text{g}/\text{m}^3$** .
- **Urban Heat Island Effect:** It exacerbates temperatures in cities, leading to an increased frequency and intensity of heatwaves. This **elevates the risk of heat-related illnesses and fatalities**, especially among vulnerable populations living in densely populated urban areas.
 - In 2021, the following four Indian cities were among the top 10 cities for heat exposure: **New Delhi, Kolkata, Mumbai, Chennai**.
 - National Action Plan on Climate Change (NAPCC)
 - National Solar Mission
 - National Mission for Enhanced Energy Efficiency
 - National Mission on Sustainable Habitat
 - National Water Mission
 - National Mission for Sustaining the Himalayan Ecosystem
 - National Mission for A Green India
 - National Mission for Sustainable Agriculture
 - National Mission on Strategic Knowledge for Climate Change
 - Nationally Determined Contributions (NDC)
 - National Adaptation Fund on Climate Change (NAFCC)

- o State Action Plan on Climate Change (SAPCC)

- National Adaptation Fund on Climate Change (NAFCC)

- Panchamrit Goal

Way Forward

- Climate-Resilient Crop Varieties: Investing in research and development of genetically modified or selectively bred climate-resilient crop varieties tailored to withstand extreme weather conditions, ensuring food security despite changing climate patterns.

- Vertical Forests in Urban Areas: Constructing vertical forests within urban spaces to enhance green cover and biodiversity while mitigating the urban heat island effect. These structures consist of multiple levels of vegetation on building exteriors, offering ecological benefits and improving air quality.

- Floating Solar Farms: Creating floating solar farms on water bodies like lakes and reservoirs to generate renewable energy. This innovative approach optimizes land use, reduces evaporation from water surfaces, and produces clean energy.

- Community-Based Climate Insurance: Implementing community-driven climate insurance schemes that involve local communities in risk-sharing and climate adaptation strategies. This helps vulnerable populations recover from climate-related disasters.

- Blockchain for Carbon Credits: Utilizing blockchain technology to create transparent and efficient carbon credit systems. This

would enable accurate tracking and trading of carbon credits, encouraging businesses and individuals to invest in emission reduction projects.

□ Seaweed Farming for Carbon Capture: Encouraging seaweed farming as a method of carbon sequestration. Seaweed absorbs carbon dioxide during growth and can be harvested for various purposes while helping mitigate climate change.

□ Incentivizing Climate-Smart Transportation: Implementing incentive-based programs to promote climate-smart transportation, such as offering tax benefits or subsidies for electric vehicles, cycling infrastructure, or carpooling initiatives.

**UPSC Civil Services Examination,
Previous Year Question (PYQ)**

Prelims

Q.1 In the context of India's preparation for Climate-Smart Agriculture, consider the following statements: (2021)

1. The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
2. The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
3. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

Which of the statements given above are correct?

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

Ans: (d)

Q.2 Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India? (2016)

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'.
2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future.
3. 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.

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

Ans: (c)

Q.3 With reference to 'Global Climate Change Alliance', which of the following statements is/are correct? (2017)

1. It is an initiative of the European Union.

2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.

3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Select the correct answer using the code given below:

(a) 1 and 2 only

(b) 3 only

(c) 2 and 3 only

(d) 1, 2 and 3

Ans: (a)

Mains

Q.1 Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? (2021)

Q.2 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India be affected by climate change? (2017)