



Global Glacier Change in the 21st Century

For Prelims: Paris Climate Agreement, Global Glacier Change, Climate Change

For Mains: Global Glacier Change in the 21st century, Climate Change, Natural Disasters

Why in News?

Recently, a report titled “Global glacier change in the 21st century: Every increase in temperature matters”, which states half the Earth’s glaciers may disappear by 2100.

- The researchers used **two decades of satellite data to map the planet’s glaciers with greater precision than ever before.**
- The [United Nation’s \(UN\) Intergovernmental Panel on Climate Change’s sixth assessment report](#) released in 2022 also warned that we are running out of time to attain the 1.5°C target.

What are the Findings?

- **Glaciers Melting at Unprecedented Rate:**
 - [Glaciers](#) are receding at unprecedented rates due to [climate change](#) and rising temperatures.
 - The amount of ice lost by glaciers between **1994 and 2017 was around 30 trillion tones** and they are now melting at a pace of 1.2 trillion tonnes each year.
 - The glaciers in the Alps, Iceland and Alaska are some of those that are melting at the quickest rates.
 - Half the Earth’s glaciers are destined to vanish by 2100, even if we adhere to the [Paris Climate Agreement](#) goal of limiting global temperature rise to 1.5 degrees Celsius above pre-industrial levels.
 - A minimum of 50 % of the loss will **occur within the next 30 years.** 68% of glaciers will vanish if **global warming continues at the current rate of 2.7°C.**
 - If this happens, by the end of the following century, **there would be practically no glaciers left in central Europe,** western Canada and the United States.
 - Some of these glaciers can be saved from extinction by reducing global warming, the researchers noted.
 - **Glaciers, which hold 70 % of the Earth’s freshwater,** currently encompass around 10 % of the planet’s land area.
- **Increasing Risk of Disaster:**
 - Melting glaciers raise sea levels dramatically, jeopardizing up to **two billion people’s access to water and increasing the risk of [natural disasters](#) and [extreme weather events](#)** like floods.
 - Global sea level rose by 21 % between 2000 and 2019. This was solely due to meltwater from melting glaciers and ice sheets.
- **Recommendations:**
 - The rapidly increasing glacier mass losses as global temperature increases beyond 1.5C

stresses the **urgency of establishing more ambitious climate pledges to preserve the glaciers** in these mountainous regions.

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 will be affected by climate change? **(2017)**

Source: DTE

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