

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 4390**  
TO BE ANSWERED ON 02.04.2026

**Vulnerability to GLOF**

4390. SHRI CHOWDRY MOHAMMAD RAMZAN:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether any survey or assessment has been carried out to study vulnerability to glacial lake outburst floods (GLOFs) and climate change impacts in Jammu & Kashmir mountainous regions; and
- (b) the details of climate mitigation measures and any dedicated climate budget allocation for the UT?

**ANSWER**

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
(SHRI KIRTI VARDHAN SINGH)

(a) & (b) The Central Water Commission (CWC) under Ministry of Jal Shakti monitors Glacial Lakes and Water Bodies (GLs&WBs) of size greater than 10 Ha in the Himalayan region of Indian River Basins, for the period June to October every year, using remote sensing techniques. CWC had been monitoring 902 GLs & WBs having size greater than 10 Ha till 2024 as per NRSC inventory 2011. From June 2025, CWC has expanded monitoring of GLs&WBs greater than 10Ha, from 902 to 2843 as per Glacial Lake Atlas of NRSC, 2023. This includes 76 Glacial Lakes and 16 Water Bodies in Jammu and Kashmir.

The monthly monitoring report so generated enables detection of relative change in water spread area of GLs&WBs as well as identification of those which have expanded substantially during the monitoring month, from a disaster perspective. The monitoring reports are shared with all stakeholders and e-published on CWC website for any time access by the concerned.

CWC has also finalized the Criteria for Risk Indexing of Glacial Lakes offering a structured approach for identifying and ranking Glacial Lakes based on their likelihood of failure and the potential damage they could cause in the event of a Glacial Lake Outburst Flood (GLOF). This is done by evaluating key factors such as the Glacial Lake's size, change in size over time, stability of side slope, proximity to other Glacial Lakes as well as considering downstream vulnerabilities like habitation, infrastructures like dams, bridges, etc. This criteria is applied to 100 Glacial lakes located in India. Out of the 15 Glacial Lakes located in Jammu & Kashmir, 8 fall under "Category 3" and 7 under "Category 4". In general, Category 1 lakes are considered to be the most risky and Category 4 is the least risky.

Further, as per the Third National Communication submitted to the United Nations Framework Convention on Climate Change (UNFCCC), an assessment of the vulnerability of India's districts was carried out in 2020 under the aegis of the Department of Science and Technology (DST). The report titled "Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework" emphasises that all regions in India are vulnerable to the impacts of climatic events.

The Government is implementing the National Action Plan on Climate Change (NAPCC), which is the overarching policy framework and comprises of national missions in specific areas of solar energy, enhanced energy efficiency, water, agriculture, Himalayan ecosystem, sustainable habitat, green India, health and strategic knowledge on climate change. Further, 34 States/Union Territories, including the UT of Jammu & Kashmir have prepared State Action Plans on Climate Change (SAPCCs) consistent with the objectives of NAPCC. The SAPCC for J&K State, inter-alia, provides for the vulnerability analysis and mentions about the potential impacts of the GLOF. In addition, the Government has launched many schemes and programs to scale up India's action on both, adaptation and mitigation. Appropriate measures are being taken under these schemes and programs across many sectors including water, agriculture, forest, energy and enterprise, sustainability mobility and housing, waste management, circular economy and resource efficiency, etc.

Apart from resolutely addressing climate change domestically, for the world, India has created and nurtures International Solar Alliance (ISA), Global Fuel Alliance and Coalition for Disaster Resilient Infrastructure.

As a result of the aforesaid measures, India has progressively continued decoupling of economic growth from greenhouse gas emissions. India's emission intensity of gross domestic product (GDP) has reduced by 36 per cent between 2005 and 2020. India's current share of non-fossil based energy sources in installed electric power capacity is more than 52% resulting in the achievement of one of the goals under India's extant Nationally Determined Contribution (NDC) five years ahead of the committed timeline. As compared to the base year of 2005, India has already created 2.29 billion tonnes of additional carbon sink as against the target of 2.5 to 3.0 billion tonnes by 2030.

The Ministry of Environment, Forest and Climate Change, provides one-time financial support for the preparation and revision of the State Action Plan on Climate Change (SAPCC). A financial assistance of Rs. 12.00 lakh has been sanctioned for the revision of SAPCC for J&K State. India's climate actions cut across various sectors and are anchored through various programmes and schemes implemented on pan-India basis. The State Governments are to provide the resources for implementing the SAPCC in their plan outlay for the respective sectors in convergence with relevant schemes and programmes of the respective States, as well as of Government of India.

Further, under the National Adaptation Fund for Climate Change (NAFCC), established to support adaptation initiatives in India's States and Union Territories (UTs) that are vulnerable to the adverse impacts of climate change, one project titled "Climate Resilient Sustainable Agriculture in Rain – Fed Farming (Kandi) Areas of Jammu & Kashmir" was implemented with a sanctioned cost of Rs 22.51 Crore in Jammu and Budgam Districts.

\*\*\*\*\*