

GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO.2765

ANSWERED ON 08.08.2024

IMPACT OF GLACIAL LAKE OUTBURST FLOODS

2765. SHRI SHAFI PARAMBIL

SHRI SUKHDEO BHAGAT

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Will the Minister of **JAL SHAKTI** be pleased to state:

- (a) whether any studies have been commissioned to assess the impact of Glacial Lake Outburst Floods (GLOFs) on existing and proposed Himalayan infrastructure, particularly in light of the Teesta-III hydroelectric dam collapse in North Sikkim in October 2023, if so, the details thereof;
- (b) the details of policy changes being considered to strengthen and mitigate the risks of GLOFs on infrastructure in vulnerable regions like Sikkim;
- (c) whether there are plans to enhance monitoring and early warning systems for GLOFs in the Himalayan region and if so, the timeline for their implementation;
- (d) whether the Ministry proposes to allocate funds for study and mitigation of risk posed by glacial lakes and if so, the details along with the current status of the National GLOF Mission; and
- (e) the details of projects on study of glacial lakes and the risk posed by them supported by the Ministry till date?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY)

(a) & (b) Subsequent to Teesta-III Hydroelectric dam collapse in October, 2023, Central Water Commission has decided to review the design flood of all the existing and under construction dams vulnerable to Glacial Lake Outburst Floods (GLOFs) to ensure their adequate spillway capacity for a combination of Probable Maximum Flood/Standard Probable Flood and GLOF. Further, GLOF Studies has been made mandatory for all new dams planned having Glacial Lakes in their catchments.

(c) & (d) CWC monitors 902 Glacial Lakes and Water Bodies (including 477 Glacial Lakes & Water Bodies, having water spread area greater than 50 ha and 425 Glacial Lakes having size 10 ha to 50 ha) during the period from June to October every year. This enables the detection of relative change in water spread area of Glacial Lakes & Water Bodies, as well as identifying the one's which have expanded substantially during the monitoring month, from disaster perspective. The monthly monitoring reports can be accessed at <https://cwc.gov.in/glacial-lakeswater-bodies-himalayan-region>.

A Committee on Disaster Risk Reduction (CoDRR) under NDMA involving representatives from six Himalayan States/UTs and other stakeholders, has identified a set of high risk glacial lakes for sending expeditions to directly assess these lakes and prepare comprehensive mitigation strategies in terms of setting up early warning system/other structural and non-structural measures.

A High Level Committee Chaired by Union Home Minister has approved a GLOF risk mitigation project for Rs 150 crores for the States of Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh to support the efforts of State Governments to take up various mitigation measures related to GLOF.

(e) As per the information compiled by NDSA, 47 dams (38 Commissioned and 9 under construction dams) have been identified by Central Electricity Authority under Ministry of Power, which are likely to be affected by Glacial Lake Outburst Flood (GLOF) from the Glacial lakes in the Indian territory. GLOF studies have been completed for 31 projects.

The Ministry of Earth Science through its autonomous institute, the National Centre of Polar and Ocean Research (NCPOR), has been monitoring and carrying out scientific research on two pro-glacial lakes in the Chandra Basin, since 2013.

In a National Mission on Himalayan Studies (NMHS) sponsored study entitled "Snow and Glacier Contribution and Impact of Climate Change in Teesta River Basin, Eastern Himalaya", status of glacial lakes in Sikkim Himalayas has been prepared by National Institute of Hydrology, Roorkee.
