

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UNSTARRED QUESTION NO. 2366**  
TO BE ANSWERED ON 15.12.2025

**Impact of Climate Change**

2366. THIRU D M KATHIR ANAND:

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

- (a) whether the melting of Himalayan glaciers, shifting of tectonic forces is intensifying vulnerability to earthquake and heightened seismic risk;
- (b) if so, the details and effective measures taken by the Government to mitigate the impact of climate change;
- (c) whether the cumulative effect of greenhouse gases disrupts climate systems leading to more frequent and severe weather events, rising sea levels and widespread ecological impacts;
- (d) if so, the action taken by the Government in this regard; and
- (e) whether the rural population especially women bear the heavy burden of the ill-effects of the climate change and if so, the steps taken by the Government in this regard?

**ANSWER**

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

(a) & (b) According to information provided by the Ministry of Earth Sciences (MoES), scientific studies indicate that the Himalayan region is inherently one of the most seismically active zones in the world due to the ongoing convergence between the Indian and Eurasian tectonic plates. While the melting of Himalayan glaciers is primarily a consequence of climate change, it does not directly trigger earthquakes. Climate-related factors such as changes in hydrological loading, glacial retreat, and increased sediment movement may influence local stress conditions in specific areas. However, the principal driver of seismicity in the Himalaya remains the active tectonic deformation and accumulation of strain along major fault systems, which intensify seismic vulnerability in the region.

The Government has undertaken several measures to monitor and mitigate the impacts of climate change and to enhance preparedness for natural hazards, including earthquakes. Key initiatives include expansion and upgradation of seismic and strong-motion observation networks by National Centre for Seismology (NCS), Ministry of Earth Sciences (MoES) for improved seismic hazard assessment.

To mitigate the impact of earthquake disasters, National Disaster Management Authority (NDMA) has undertaken several initiatives, like demonstration of retrofitting technologies across various states to promote earthquake-resilient construction practices and issuance of technical guidelines on earthquake-resistant construction and retrofitting. These efforts aim to enhance the understanding of seismic risk among stakeholders and encourage adoption of

preventive measures at both institutional and community levels. NDMA has undertaken earthquake risk assessment for various cities, particularly those in earthquake-prone areas. The guidelines developed by NDMA serve as critical references for stakeholders, including engineers, architects, urban planners, policymakers, and the general public, to mitigate seismic risks. NDMA also conducts regular public awareness programmes and mock exercises to prepare all stakeholders to deal with earthquake events.

(c) & (d) As per information provided by the Ministry of Earth Sciences (MoES), the cumulative effect of greenhouse gases disrupts climate systems leading to more frequent and severe weather events such as increased frequency of extreme weather events, shifts in monsoon and climatic patterns, rising sea levels and widespread ecological impacts. India's Third National Communication submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2023 states that the impacts of climate change are observed in various sectors: biodiversity and forests; agriculture; water resources; coastal and marine ecosystems; human health; gender; urban and infrastructure. The report also states that extreme precipitation and flooding have affected several parts of India in recent years and these floods were caused by heavy precipitation as well as events such as glacier breaks and flash floods, and avalanches.

The Government stands committed to combating climate change through its several programmes and schemes, including the National Action Plan on Climate Change (NAPCC), which comprises missions in specific areas of solar energy, energy efficiency, water, sustainable agriculture, health, Himalayan ecosystem, sustainable habitat, green India, and strategic knowledge for climate change. The NAPCC provides an overarching framework for all climate actions. Thirty-four States/Union Territories have prepared their State Action Plan on Climate Change (SAPCC) in line with the NAPCC, taking into account State-specific climate change issues.

(e) According to India's Third National Communication submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2023, climatic extremes and climate change further confound the scenario by magnifying manifold the workload of women and enhancing their vulnerability. Recurring incidences of erratic rainfall and increasing possibilities of extreme events can result in the loss of agricultural produce. Women are exposed to harvest losses, which are often their sole source of food and income. Second, climate variability usually impacts sectors that are traditionally associated with rural womenfolk, such as paddy cultivation, cotton and tea plantations, and fishing. In India, about 65 per cent of the total female workers are engaged in one of the most climate sensitive sectors – agriculture, thereby constituting 30 per cent of the total cultivators and about 43 per cent of the total agricultural labourers in the country.

The Government of India has launched several schemes/ programmes that can directly or indirectly reduce the risk of women to climate change. Few such schemes/ programmes are National Programme on Climate Change and Human Health (NPCCHH), Pradhan Mantri Ujjwala Yojana, Nal Se Jal under Jal Jeevan Mission, Swaccha Bharat Mission, Pradhan Mantri Awas Yojana, Janani Shishu Suraksha Karyakram, and Mother and Child tracking System of National Health Mission. These schemes strengthen the capacity of women by reducing their exposure and sensitivity to climate-related risks, while simultaneously enhancing their adaptive abilities.

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