

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 1175**  
TO BE ANSWERED ON 01.08.2024

**Environmental hazards in the North-Eastern States**

1175: SMT. PHULO DEVI NETAM:

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

- (a) whether Government is aware that climate-related factors have increased the occurrence of environmental hazards in the North-Eastern States.
- (b) the impact of flash floods on the displaced population with regard to shelter, livelihood(income), access to healthcare and other services and general mobility in Manipur; and
- (c) the steps being taken by Government to mitigate these climate-related issues in the North-East as well as rest of the country?

**ANSWER**

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

(a) As per India's Third National Communication submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2023, various parts of the country have experienced extreme events along with the climatic variations and long-term trends in precipitation and temperature. These events include cyclonic storms, droughts, floods, lightning, thunderstorms, snowfall, cold waves, and heat waves.

India Meteorological Department has analysed trends for precipitation and drought like conditions over India using 'Standardised Precipitation Index' (SPI). As per the analysis, extremely dry and severely dry conditions over parts of Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Sub Himalayan West Bengal, Sikkim, eastern Uttar Pradesh, Himachal Pradesh and Jammu & Kashmir were observed in 2021. Further, as per a study by the National Remote Sensing Centre, the number of States affected by major floods increased from 08 States in 2017 to 15 in 2021. Analysis of trends in heavy rainfall and flooding indicate that their frequency is increasing in some parts of India, including the peninsular, east, northeast, and some parts of central India.

(b) As per the State Action Plan on Climate Change (SAPCC) of Manipur, the State is vulnerable to the water-induced disasters because of its location in the eastern Himalayan periphery, fragile geo-environmental setting and economic under-development. The valley areas witnessed frequent floods even after short spell of storm due to various reasons like manmade ecological changes in the catchment areas, the high intensity rainfall during the rainy

season in the hilly areas. The flash floods affect agricultural lands and habitats, the urban settlement areas during rainy season. The damages due to flood comprise of breach of bunds, overflowing, landslides, erosion and depression of riverbanks at the vulnerable areas. State specific studies on the impacts of climate change indicate that crop yields would decrease, decreased income from poor crop production, related food security and nutritional issues, increase in vector borne diseases and migration of population from rural to urban areas.

(c) The Government is implementing the National Action Plan on Climate Change (NAPCC) which provides the overarching framework for climate actions, through national missions in specific areas of solar energy, enhanced energy efficiency, water, agriculture, Himalayan eco-system, sustainable habitat, green India, human health and strategic knowledge on climate change. These Missions are institutionalized and implemented by respective nodal Ministries and Departments.

In line with the NAPCC, various States/Union Territories (UTs) have prepared respective SAPCC to address state-specific issues related to climate change. All SAPCCs call for mitigating disaster risk due to changes in extreme weather patterns, which include the development of Hazard Risk Vulnerability Assessment reports (HRVA), State Disaster Management Plans (SDMPs) and State Disaster Management Force (SDRF).

Developing knowledge and capacities to monitor and forecast extreme events to inform disaster risk management and its reduction is a broad goal. Some examples are:

- i. The development of spatial flood early warning models using very high-resolution Digital Terrain Models now provide alarms for spatial flooding in flood-prone regions of India. A web-enabled semi-automated spatial early warning system runs in operational mode in real-time with data support from Central Water Commission (CWC) and India Meteorological Department (IMD), and results are disseminated through Geo-portals.
- ii. For assessing floods and other extreme events, the Rapid Response and Emergency Services/Decision Support Centre (RRES/DSC) has been established under Indian Space Research Organisation (ISRO) - Disaster Management Support (DMS) programme.
- iii. The IMD provides regular assessments of the seasonal outlook for the hot weather season and daily temperature forecasts over India at different temporal and spatial scales. They are used as a prompt early warning of extreme heat.

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