

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION NO. 4386  
TO BE ANSWERED ON WEDNESDAY, 20<sup>TH</sup> AUGUST, 2025**

**ABOVE-NORMAL MONSOON**

4386. SHRI BAIJAYANT PANDA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has taken note of the Indian Meteorological Department's (IMD's) April 2025 forecast indicating an above-normal southwest monsoon and an increasing frequency of extreme rainfall events across the country and if so, the details thereof;
- (b) the details of steps taken to ensure urban infrastructure resilience and flood preparedness in light of this forecast;
- (c) whether the Union Government has identified high-risk zones and initiated coordination with States for climate-resilient planning and drainage reform and if so, the details thereof; and
- (d) the specific measures taken to support monsoon preparedness and early warning systems in Odisha which remains highly vulnerable to seasonal flooding?

**ANSWER**  
**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR**  
**MINISTRY OF SCIENCE AND TECHNOLOGY**  
**AND EARTH SCIENCES**  
**(DR. JITENDRA SINGH)**

- (a)-(b) Yes. The Government is aware of the India Meteorological Department's (IMD) long-range forecast issued for the 2025 SW monsoon season. Every year, IMD issues the long-range forecast (LRF) for the monsoon season (June to September) in two stages; In April and in May. Both these forecasts issued for 2025 indicated above-normal rainfall during the Southwest Monsoon season 2025. Along with these forecasts, the expected spatial distribution of rainfall was also provided. Both forecasts are publicly available on the IMD's website ([https://internal.imd.gov.in/press\\_release/20250527\\_pr\\_4008.pdf](https://internal.imd.gov.in/press_release/20250527_pr_4008.pdf)) and YouTube channel (<https://www.youtube.com/live/RezdeSjnYBw>). The India Meteorological Department has also issued seasonal rainfall forecasts for all 36 meteorological subdivisions of the country, providing the probability of rainfall over each region for the June–September 2025 monsoon period. In addition to the seasonal forecast, monthly outlooks for June, July, and August 2025 have also been released, covering both rainfall and temperature patterns, along with their likely spatial distribution across the country. In addition to the seasonal and monthly forecasts, IMD also regularly issues weekly forecasts at weekly and daily scales, along with nowcasts and impact-based forecasts for extreme rainfall events. The Central Water Commission (CWC) is mandated to issue short-range flood forecasts with a lead time of up to 24 hours to concerned State Governments at identified locations. Timely flood forecasts are being issued when a certain threshold limit is reached.

(c) The Government has taken several initiatives to protect the country from the adverse effects of climate change. The multi-faceted approach is aimed at addressing the potential impacts of climate change on the country's weather patterns, focusing on adaptation, mitigation, and climate resilience-building. Key initiatives include:

- **National Action Plan on Climate Change (NAPCC):** Launched in 2008, it outlines eight national missions that focus on promoting sustainable development while addressing climate change. These include solar energy, energy efficiency, sustainable agriculture, and water conservation missions. The NAPCC, prepared under the guidance of the Prime Minister's Council on Climate Change, also includes measures to assess and manage the impact of sea level rise on coastal areas. The National Adaptation Fund for Climate Change (NAFCC) is aimed at climate adaptation, including coastal areas. The NAFCC finances the measures to protect vulnerable coastal communities and improve their resilience to sea level rise. Besides, the Coastal Regulation Zone (CRZ) notifications also aim to manage and regulate development in coastal areas. The CRZ regulations help protect coastal ecosystems and manage the impact of human activities, thus reducing vulnerability to rising sea levels.
- **State Action Plans:** States have also developed their own climate action plan in line with the NAPCC, addressing region-specific vulnerabilities such as extreme weather events (floods, droughts), drainage reform, and shifting monsoon patterns.
- **Disaster Management and Early Warning Systems:** India has strengthened disaster preparedness through its National Disaster Management Authority (NDMA), which works closely with the India Meteorological Department to minimize the impacts of extreme weather events (e.g., cyclones, heatwaves, floods).
- **Climate-Resilient Agriculture:** The Government has promoted climate-resilient agricultural practices, such as drought-resistant crops, improved water management, and changes in cropping patterns to adapt to shifting rainfall and temperature patterns.
- **Renewable Energy Development:** India is aggressively expanding renewable energy sources, particularly solar and wind, to reduce greenhouse gas emissions and transition to a low-carbon economy. The country aims to achieve 500 GW of non-fossil fuel-based energy capacity by 2030.
- **Water Conservation:** With increasing concerns over water scarcity, the Government has initiated various programs like the Jal Jeevan Mission and National Water Mission to improve water management and ensure sustainable water use, especially in drought-prone regions.
- **Policy and Financial Frameworks:** The Government has also integrated climate change considerations into national policies and budgets, aligning with international climate agreements (e.g., the Paris Agreement). This includes setting emission reduction targets and focusing on climate financing for vulnerable sectors.

These efforts aim to reduce vulnerabilities and prepare the country to combat the diverse impacts of climate change, from altered monsoon patterns to more frequent extreme weather events and their cascading effects.

- (d) A systematic coordination is in place between IMD, CWC, State Disaster Management Authority (SDMA), and the State Irrigation Department. Regular monsoon preparedness meetings are held between these agencies for Odisha, which is highly vulnerable to heavy rainfall and floods in the season. IMD, CWC and other stakeholders have jointly implemented an interoperable environment for generating real-time forecast and warning information related to heavy rainfall-induced floods. The Flood Meteorological Office (FMO) located at Bhubneshwar provides all flood-related precipitation data and forecasts for all river catchments in the State. In this regard, IMD supports CWC, SDMA, and the State Irrigation Department by providing observed and forecasted rainfall data and warnings using state-of-the-art NWP-based forecasts and radar-based nowcast systems. Though floods are mainly managed by the CWC, but for all rain-induced Flash Floods-related warnings are currently provided by IMD using a Flash Floods Guidance System (FFGS) operational in IMD. The FFGS bulletins are issued for the flash floods operationally considering the observed and forecasted rainfall, soil moisture, and river conditions. The FFGS bulletin helps in providing early advisories of flash floods. The flash flood guidance is a robust system designed to provide the necessary products in real-time to support the development of warnings for flash floods about 6-24 hours in advance.

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