

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO. 60

ANSWERED ON 20.07.2023

FLASH FLOODS

60. SHRI N. REDDEPPA
SHRI KURUVA GORANTLA MADHAV

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

- (a) the details of flash floods occurred in the country during the last three years;
- (b) whether the Government has undertaken any comprehensive study for understanding the reasons of increasing flash floods in the country;
- (c) if so, the details thereof and if not, the reasons therefor;
- (d) whether the Government has taken any steps towards prevention and mitigation of flash floods in the country; and
- (e) if so, the details thereof and if not, the reasons therefor?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI BISHWESWAR TUDU)

(a) Central Water Commission (CWC) is the nodal Organisation entrusted with the task of flood forecasting & early flood warnings in the country. Presently, CWC issues flood forecasts for 338 forecasting stations (200 river level forecast stations & 138 dam/ barrage inflow forecast stations). These stations cover 20 major river basins in 23 States & 2 Union Territories. In order to provide more lead time to the local authorities to plan evacuation of people & take other remedial measures, Central Water Commission (CWC) has developed basin wise flood forecasting model based on rainfall-runoff mathematical modelling for 5 days advance flood forecast advisory at its forecasting stations. The extreme and severe flooding situation which has occurred during last three years (State-wise) is at **Annexure**.

(b) & (c) There has been a significant increase in extreme weather events including intense rainfall activity due to global warming. The frequency of localised heavy rainfall activity has also increased significantly, due to which occurrence of landslide, flash flood etc. have also increased especially over hilly region. Warmer temperature leads to increased evaporation, which in turn leads to more moisture in the atmosphere. This extra moisture leads to intense convection and intense rainfall. A Report of the Intergovernmental Panel on Climate Change (IPCC) indicates that these trends will continue in future.

(d) & (e) Indian Meteorological Department (IMD) has informed that IMD in joint collaboration with the US National Weather Service, the US Hydrologic Research Center (HRC) and USAID/OFDA has developed a Flash Flood Guidance System (FFGS) for South Asian region. The FFGS has been in operational mode since October 2020. FFGS provides warnings for flash floods about 6-24 hours in advance at the watershed level with resolution of 4kmx4km for the Flash Flood prone South Asian countries viz. India, Nepal, Bhutan, Bangladesh and Sri Lanka, covering most of the Himalayan region. The flash flood guidance value is a diagnostic value that estimates the amount of rainfall of a given duration within a watershed that is required to produce flooding at the outlet of the catchment/watershed. Guidance for flash floods in the form of Threats (6 hours in advance) and Risks (24 hours in advance) is provided by Regional Centre to National Meteorological & Hydrological Services, National and State Disaster Management Authorities and all other stake holders for taking necessary mitigation measures to reduce the loss of life and property in the Himalayan Region countries and Sri-Lanka. This enables all the member countries for issuing impact-based flash flood forecasting at watershed and also city level.

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 60 TO BE ANSWERED IN LOK SABHA ON 20.07.2023 REGARDING “FLASH FLOODS”.

Detail of Flood Forecasting Stations of Central Water Commission stations flowed in Extreme and Severe Flood during last 3 years (Statewise)

SI No.	State	2020		2021		2022	
		Extreme Flood	Severe Flood	Extreme Flood	Severe Flood	Extreme Flood	Severe Flood
1	Andhra Pradesh	3	2	5	2	2	4
2	Arunachal Pradesh		1		1	1	
3	Assam	2	23		11	4	20
4	Bihar	9	28	4	33	4	21
5	Chhattisgarh	4	1			3	1
6	Gujarat		2	1			1
7	Haryana						
8	Himachal Pradesh						
9	Jammu & Kashmir						3
10	Jharkhand		1		1		2
11	Karnataka	6		3		8	
12	Kerala		2	3	1		
13	MadhyaPradesh	5	2	2		22	2
14	Maharashtra	4	2	9	1	4	2
15	Odisha	4	7	1	3	7	7
16	Rajasthan		1	2	3	7	1
17	Sikkim						
18	Tamil Nadu	4		15		4	2
19	Telangana	2	2	2	1	4	3
20	Tripura						
21	Uttar Pradesh	4	8	5	21	17	20
22	Uttarakhand	1	1	3	3	2	1
23	West Bengal		5	1	5		4
24	Daman & Diu						
25	NCT of Delhi				1		1
26	Goa			1			
27	Puducherry			1			
	Total	48	88	58	87	89	95
