GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI,
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION
LOK SABHA
UNSTARRED QUESTION NO. 2913
ANSWERED ON 05.08.2021

INCREASED RISK OF FLOOD

2913. SHRI RAJIV PRATAP RUDY

Will the Minister of JAL SHAKTI be pleased to state:

(a) whether it is true that the country has been facing an increased risk of flood during the last three years;
(b) if so, the details of the States that suffered the maximum loss due to flood;
(c) whether the Government has plans to construct, enhance and upgrade stormwater drain systems to increase flood resilience; and
(d) if so, the details thereof along with the details of plans for mitigation of flood on Ganga, Gandak and Kosi rivers in Bihar?

ANSWER

MINISTER OF STATE FOR JAL SHAKTI & FOOD PROCESSING INDUSTRIES

(SHRI PRAHLAD SINGH PATEL)

(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 330 forecasting stations (198 river level forecast stations & 132 dam/ barrage inflow forecast stations). These stations cover 20 major river basins in 23 States & 2 Union Territories. As per flood forecasting network of CWC, during the last 3 years, in addition to existing flood prone states of Assam, Bihar and Uttar Pradesh, extreme floods (water level above previous Highest Flood Level) were witnessed in the states of Kerala, Karnataka, Tamilnadu, Andhra Pradesh, Telangana, Odisha, Maharashtra, Chhattisgarh, Madhya Pradesh and Rajasthan due to excess to large excess rainfall in these states combined with extremely heavy rainfall in short duration.

(b) Central Water Commission (CWC) maintains the flood damage data of the country and as per the flood damage data compiled by CWC, maximum damages due to floods during the years 2017 to 2019 are in the states of Assam, Arunachal Pradesh, West Bengal, Rajasthan, Gujarat, Andhra Pradesh, Uttar Pradesh, Kerala and Karnataka.

(c) Urban planning being a State subject, management of urban flooding and maintenance of drainage systems falls under the purview of the respective State/ UT governments, Urban Local Bodies (ULBs) and Urban Development Authorities. For the guidance of the State/ UT Governments, Ministry of Housing and Urban Affairs has issued Urban and Regional Development Plans Formulation and

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Implementation (URDPFI) Guidelines, 2014 by integrating the guidelines on mitigation, prevention and preparedness for urban flooding issued by the National Disaster Management Authority. Ministry of Housing and Urban Affairs has also issued Standard Operating Procedure (SOP) for Urban Flooding in 2017. The SOP lays down, in a comprehensive manner, the specific actions required to be undertaken by the ULBs, District Administration and the State Government. Further, the Ministry has published a Manual on Storm Water Drainage Systems, 2019 to provide guidance on sustainable design, planning& management of storm water drainage systems and emergency plan for flood response in urban areas. Above documents are in public domain and available on website of Ministry of Housing and Urban Affairs.

(d) Flood management and anti-erosion schemes are planned, investigated and implemented by State Governments with their own resources as per their priority. The Union Government supplements the efforts of the States by providing technical guidance and promotional financial assistance for management of floods in critical areas. The Government of India has been making continuous efforts to assist the State Governments in effective flood management. As a part of structural measures, during XI Plan Government of India had launched Flood Management Programme (FMP) for providing Central Assistance to States for works related to river management, flood control, anti-erosion, drainage development, anti-sea erosion, etc. which continued during XII Plan and thereafter as a component of "Flood Management and Border Areas Programme" (FMBAP) for the period from 2017-18 to 2020-21.

A total of 522 flood management projects with an estimated cost of Rs.13238.36 crore were approved and included under FMP during XI and XII Plan. Since start of XI Plan, total Central Assistance released to States under FMP up till March, 2021 is Rs.6447.76 crores. Out of these 522 schemes, 415 schemes have been completed which have given protection to an area of around 4.994 mha and protected a population of about 52.21 million. Main reason for floods in the State of Bihar is on account of increased discharge in rivers of North Bihar like Gandak, Burhi Gandak and Bagmati, Kamla, Kosi and Mahananda due to heavy rainfall in the upper catchment areas which mainly lie in Nepal. The management of floods due to these rivers has been a concern. The related issues are discussed in the existing Indo-Nepal bilateral mechanisms comprising of (i) Joint Ministerial Level Commission on Water Resources (JMCWR) (ii) Joint Committee on Water Resources (JCWR) (iii) Joint Standing Technical Committee (JSTC), (iv) Joint Committee on Gandak & Kosi Projects (JCKGP) and (v) Joint Committee on Inundation and Flood management (JCIFM). Government of India is having regular dialogue with the Government of Nepal for construction of dams on border Rivers for mutual benefit of the two countries which includes flood control.

Flood forecasting is considered as one of the most cost effective non-structural measure for flood management. The role played by CWC in this regard has already been elucidated under part (a).

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CWC is formulating 5 day advisories for flood using real time rainfall estimates and 5 day rainfall forecast through Numerical Weather Prediction models being shared by IMD on a seamless fashion. Mathematical model has been used for formulation of advisories and these advisories are shared with stake holders using dedicated website. At present, CWC has 40 level forecasting stations (for villages/towns on the bank of the rivers) and 3 inflow forecasting stations (for Dams/ Barrages) in the State of Bihar. During monsoon season of year 2020 ending 31st December 2020, a total of 3223 forecasts have been issued for Bihar State out of which 3192 have been found to be within the accuracy limit which works out to 99.04%.

In Bihar, the details of level and inflow forecasting stations on Rivers Ganga, Gandak and Kosi are as below:

River	**Level forecast stations**	**Inflow forecast stations**
Ganga	1. Buxar 2. Dighaghat 3. Gandhighat 4. Hathidah 5. Munger 6. Bhagalpur 7. Kahalgaon	Nil
Gandak	1. Chatia 2. Rewaghat 3. Hazipur 4. Dumariaghat	Gandak Barrage
Kosi	1. Basua 2. Baltara 3. Kursela	Kosi Barrage

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