

GOVERNMENT OF INDIA  
MINISTRY OF WATER RESOURCES,  
RIVER DEVELOPMENT & GANGA REJUVENATION  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 597**  
ANSWERED ON 13.12.2018

**MANAGEMENT OF DAMS DURING FLOODS**

597. SHRI ANTO ANTONY

Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION be pleased to state:

- (a) whether the Government has noticed that the recent flood has caused huge damage in Kerala and if so, the details thereof;
- (b) whether the Government has assessed the cause of such flood and if so, the details thereof and the steps taken by the Government in this regard;
- (c) whether the Government has issued any guidelines to the States for management of various dams in the country and if so, the details thereof;
- (d) whether Kerala has followed the guidelines while opening the shutters of various dams during floods in the State and if so, the details thereof;
- (e) whether climate changes have caused heavy rains in Kerala and if so, the details thereof; and
- (f) whether the Government has failed to give early warning and taking security measures while releasing waters from the dams and if so, the reasons therefor along with the steps taken/to be taken to tackle the situation?

**ANSWER**

THE MINISTER OF STATE FOR WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION & PARLIAMENTARY AFFAIRS

(SHRI ARJUN RAM MEGHWAL)

(a) The recent floods of August, 2018 has caused huge damage in Kerala. Based on the memorandum submitted by the State Government of Kerala to Ministry of Home Affairs (MHA) seeking Central Assistance for floods & landslides in August 2018, an Inter-Ministerial Central Team (IMCT) from Government of India visited the State. IMCT assessed the damages in conformity with the norms of State Disaster Response Fund (SDRF)/ National Disaster Response Fund (NDRF). As per the assessment made by IMCT, 339 human lives and 75,857 cattles were lost, 6.42 lakh houses damaged and 82660.29 ha. cropped area have been reported to be affected due to flood/ landslides during August 2018.

(b) A Study on this flood has been carried out by Central Water Commission (CWC). As per the study, Kerala experienced an abnormally high rainfall from 1 June, 2018 to 19 August, 2018. As per IMD data, Kerala received 2346.6 mm of rainfall from 1 June, 2018 to 19 August, 2018 in contrast to

an expected 1649.5 mm of rainfall. This rainfall was about 42% above the normal. Further, the rainfall over Kerala during 1<sup>st</sup> to 19<sup>th</sup> of August was 164% above normal. Due to heavy rainfall, the first onset of flooding occurred towards the end of July. A severe spell of rainfall was experienced at several places on the 8<sup>th</sup> and 9<sup>th</sup> of August, 2018. Another severe spell of rainfall started from the 14<sup>th</sup> of August and continued till the 19<sup>th</sup> of August, resulting in disastrous flooding in 13 out of 14 districts.

(c) Central Water Commission (CWC) had issued following guidelines on dam safety:

- Guidelines for safety Inspection of Dams.
- Guidelines for Instrumentation of large Dams
- Guidelines for preparation of Operation and Maintenance Manuals of Dams.
- Guidelines for Mapping Flood Risk Associated with Dams
- Guidelines for Developing Emergency Action Plans for Dams

The State Governments/ Dam owners have been informed about the availability of these guidelines which are already available on dam safety portal of CWC. Further, State Government, Water Resource Departments/Dam Owners are regularly advised to prepare the O&M manual for safe operation of Dams.

(d) The State Government of Kerala has informed that they have followed the existing guidelines for opening of shutters during the floods. The water levels in the reservoirs had been observed continuously and warnings were issued in time. Shutters of the dams were opened by issuing prior warning at different stages depending upon the magnitude of precautions to be taken by the local inhabitants and other people residing downstream of the river course. These alerts were issued with the consent of District Administration, Kerala State Disaster Management Authority, Media and Police along with frequent public announcement at places wherever felt necessary.

(e) The main causative factors for the occurrence of heavy rainfall over Kerala were the strong westerly/south westerly winds over the Arabian Sea along and off Kerala coast, associated with formation of a weather system (depression) over northwest Bay of Bengal. Exceptionally high intensity rainfall (above 5 cm per day) frequency has increased over Peninsular India and in particularly over highland westward flowing river catchments of Kerala during the period of 1950-2016.

(f) According to State Government of Kerala, commensurate early warnings corresponding to the quantitative rainfall levels predicted by India Meteorological Department as per the Standard Operating Procedures were issued. Consequent to floods, response, relief and rehabilitation measures were also taken up by Government of Kerala.