

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION No. 1021  
TO BE ANSWERED ON WEDNESDAY, FEBRUARY 08, 2017**

**MODERNIZATION OF WEATHER PREDICTION TECHNOLOGY**

**1021. SHRI PINAKI MISRA:  
SHRI JUGAL KISHORE:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether outdated technology, old equipments and shortage of skilled staff are causing hurdles for the India Meteorological Department (IMD) in weather prediction;**
- (b) if so, the details thereof and the reasons therefor;**
- (c) whether IMD failed to predict torrential rains and the devastating floods in Tamil Nadu and if so, the reasons therefor;**
- (d) whether the Government proposes to purchase latest equipments, increase staff, upgrade/modernise the technology and weather centres and if so, the details thereof;**
- (e) the details of funds required and made available for the purpose; and**
- (f) the other steps taken/being taken to enhance the capability and improve functioning of IMD?**

**ANSWER**

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND  
MINISTRY OF EARTH SCIENCES  
(SHRI Y. S. CHOWDARY)**

- (a) No Madam.**
- (b) Does not arise.**
- (c) No Madam. Forecasting of flood is the mandate of Central Water Commission (CWC). India Meteorological Department (IMD) provide only meteorological support to the Flood Forecasting Service rendered by the CWC of Ministry of Water Resources (MOWR). IMD issued warnings 3-days in advance for occurrence of heavy (7-12 cm per day) to very heavy (13- 25 cm per day) rainfall that occurred in Chennai and other parts of Tamilnadu during 09<sup>th</sup>, 16<sup>th</sup>, 21<sup>st</sup> ,30<sup>th</sup> November and 02<sup>nd</sup> December 2015. Regional Meteorological Centre Chennai had further issued more area specific warnings, in which areas that were likely to receive extremely heavy rainfall (> 25cm per day) were also indicated to the state level disaster management authorities.The details is given in Annexure - I.**

- (d-e) Augmentation of the observing system networks for the upgradation of IMD and recruitment of staff is a continuing process that shall be taken up as per the emerging needs from time to time.**

**To upgrade the infrastructure and modernization of technology of IMD year wise allocation of funds during XII<sup>th</sup> Five Year Plan are indicated below:**

| <b>Financial year</b> | <b>Fund allocated (Rs. in Crores)</b> |
|-----------------------|---------------------------------------|
| <b>2012-13</b>        | <b>206.00</b>                         |
| <b>2013-14</b>        | <b>200.00</b>                         |
| <b>2014-15</b>        | <b>190.00</b>                         |
| <b>2015-16</b>        | <b>174.18</b>                         |
| <b>2016-17</b>        | <b>241.60</b>                         |

- (f) Starting from the XI five year plan, Government has initiated a comprehensive upgradation of (i) observation systems (ii) advanced data assimilation tools (iii) advanced communication and IT infrastructure (iv) high performance computing systems and (v) intensive/sophisticated training of IMD personnel to facilitate the implementation of advanced prediction models for improving the accuracy of weather forecasts.**

**During the XII<sup>th</sup> plan, the High Performance Computing (HPC) systems have been up-scaled to 1.2 petaflops so far to support the ongoing efforts on modelling. Operational implementation of improved suite of prediction models has enhanced the weather forecasting capability through assimilation of all available global satellite radiance data for the production of forecast products at 12 km grid globally and 3 km grid over India/regional/mega city domains.**

**Annexure-I****Heavy rainfall warning issued by IMD for Tamil Nadu and Puducherry during 5<sup>th</sup> November to 03<sup>rd</sup> December, 2015.**

| <b>Spells of Heavy rainfall commencing from</b> | <b>Date of Warnings issued</b>   |
|---|--|
| <b>09-11-2015</b>                               | <b>05 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>06 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>07 Nov. Heavy to very heavy rain at a few places with isolated extremely heavy</b>                          |
|   | <b>08 Nov. Heavy to very heavy rain at a few places with isolated extremely heavy</b>                          |
| <b>16-11-2015</b>                               | <b>13 Nov. Heavy to very heavy rain at a few places with isolated extremely heavy</b>                          |
|   | <b>14 Nov. Heavy to very heavy rain at a few places with isolated extremely heavy</b>                          |
|   | <b>15 Nov. Heavy to very heavy rain at a few places with isolated extremely heavy</b>                          |
| <b>21-11-2015</b>                               | <b>18 Nov. Heavy rain at isolated places</b>   |
|   | <b>19 Nov. Heavy rain at isolated places</b>   |
|   | <b>20 Nov. Heavy rain at isolated places</b>   |
| <b>30-11-2015</b>                               | <b>25 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>26 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>27 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>28 Nov. Heavy to very heavy rain at isolated places</b>   |
|   | <b>29, 30 Nov &amp; 1 Dec. Heavy to very heavy rain at a few places with isolated extremely heavy rainfall</b> |
|   | <b>02, 03 Dec. Heavy to very heavy rain at a few places with isolated extremely heavy rainfall</b>             |