

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 643
TO BE ANSWERED ON WEDNESDAY, JULY 20, 2016**

FLOOD WARNING CENTRES

643. KUNWAR SARVESH KUMAR:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether early flood warning centres have been established and if so, the details thereof and the names of the rivers included;**
- (b) whether remote sensing technology and Geological Information System (GIS) is being used for the purpose of flood management including early flood warning system and if so, the details thereof and the names of the rivers where such technology/system is being used;**
- (c) whether the real time data is received from the satellite regarding flood-prone areas and if so, the details thereof; and**
- (d) whether the Government propose to get the help of United States of American Flood Monitoring Organisations for availability of real time data of floods through satellite and if so, the details thereof?**

ANSWER

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

- (a) Yes Madam. The list of flood warning centers and the rivers are included in Annexure-I.**
- (b) Yes Madam. In a pilot mode mathematical models for rainfall runoff estimation (like MIKE-11 FF) are used for some of the sites in Damodar Basin, Godavari Basin, Mahanadi Basin & Chambal Basin.**
- (c) Satellite only provides real time Quantitative Precipitation Estimation (QPE) and no advanced information on flood inundation is possible to derive. However, after the flooding is reported, it is possible to demarcate areas of inundation using satellite remote sensing data.**

In order to meet specific requirements of flood forecasting, which is provided by central water commission, India Meteorological Department (IMD) operates Flood Meteorological Offices (FMOs) at thirteen locations viz., Agra, Ahmedabad, Asansol, Bhubaneshwar, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Patna, Srinagar, Bangaluru and Chennai. Apart from this, IMD also supports Damodar Valley

Corporation (DVC) by providing QPF for Damodar river basin areas for their flood forecasting activities. During the flood season, FMOs provide valuable meteorological support to the Central Water Commission (CWC) for issuing flood warnings in respect of the 43 rivers of India covering 146 river basins. CWC is working in close association with IMD and State Governments for timely flood forecast whenever the river water level rises above warning level.

To meet the requirement of State Governments, IMD Officers invariably attend all the meetings called by the State Governments for reviewing the preparedness on floods by various agencies.

(d) No Madam.

Annexure-I

List of Flood Forecasting Stations of CWC			
Sl. No.	Name of the rivers	Name of Flood Forecast site	Name of state
1	2	3	4
Ganga Basin			
1.	Alaknanda	Srinagar	Uttaranchal
2.	Ganga	Rishikesh	Uttaranchal
3.	Ganga	Haridwar	Uttaranchal
4.	Ganga	Narora Barrage	Uttar Pradesh
5.	Ganga	Kannaouj	Uttar Pradesh
6.	Ganga	Ankinghat	Uttar Pradesh
7.	Ganga	Kanpur	Uttar Pradesh
8.	Ganga	Dalmau	Uttar Pradesh
9.	Ganga	Phaphamau	Uttar Pradesh
10.	Ganga	Allahabad Chhatnag	Uttar Pradesh
11.	Ganga	Mirzapur	Uttar Pradesh
12.	Ganga	Varanasi	Uttar Pradesh
13.	Ganga	Ghazipur	Uttar Pradesh
14.	Ganga	Buxar	Bihar
15.	Ganga	Ballia	Uttar Pradesh
16.	Ganga	Patna Dighaghat	Bihar
17.	Ganga	Patna Gandhighat	Bihar
18.	Ganga	Hathidah	Bihar
19.	Ganga	Munger	Bihar
20.	Ganga	Bhagalpur	Bihar
21.	Ganga	Kahalgaoon	Bihar
22.	Ganga	Sahibgunj	Jharkhand
23.	Ganga	Farakka	West Bengal
24.	Ramganga	Moradabad	Uttar Pradesh
25.	Ramganga	Bareilly	Uttar Pradesh
26.	Yamuna	Tajewala Weir	Haryana
27.	Yamuna	Mawi	Uttar Pradesh
28.	Yamuna	Delhi Rly Bridge	NCT Delhi
29.	Yamuna	Mathura	Uttar Pradesh
30.	Yamuna	Agra	Uttar Pradesh
31.	Yamuna	Etawa	Uttar Pradesh
32.	Yamuna	Auraya	Uttar Pradesh
33.	Yamuna	Kalpi	Uttar Pradesh
34.	Yamuna	Hamirpur	Uttar Pradesh
35.	Yamuna	Chilaghat	Uttar Pradesh
36.	Yamuna	Naini	Uttar Pradesh
37.	Sahibi	Dhansa	NCT Delhi
38.	Chambal	Gandhisagar Dam	Madhya Pradesh
39.	Betwa	Mohara	Uttar Pradesh
40.	Betwa	Sahjina	Uttar Pradesh
41.	Ken	Banda	Uttar Pradesh
42.	Gomati	Lucknow Hanuman Setu	Uttar Pradesh
43.	Gomati	Jaunpur	Uttar Pradesh

44.	SAI	Raibareli	Uttar Pradesh
45.	Ghaghra	Elgin Bridge	Uttar Pradesh
46.	Ghaghra	Ayodhya	Uttar Pradesh
47.	Ghaghra	Turtipar	Uttar Pradesh
48.	Ghaghra	Darauli	Bihar
49.	Ghaghra	Gangpur Siswan	Bihar
50.	Ghaghra	Chhapra	Bihar
51.	Rapti	Balrampur	Uttar Pradesh
52.	Rapti	Bansi	Uttar Pradesh
53.	Rapti	Gorakpur Bridghat	Uttar Pradesh
54.	Sone	Inderpuri	Bihar
55.	Sone	Koelwar	Bihar
56.	Sone	Maner	Bihar
57.	PunPun	Sripalpur	Bihar
58.	Gandak	Khadda	Uttar Pradesh
59.	Gandak	Chatia	Bihar
60.	Gandak	Rewaghat	Bihar
61.	Gandak	Hazipur	Bihar
62.	Burhi Gandak	Lalbeghiaghat	Bihar
63.	Burhi Gandak	Muzaffarpur Sikandarpur	Bihar
64.	Burhi Gandak	Samastipur	Bihar
65.	Burhi Gandak	Rosera	Bihar
66.	Burhi Gandak	Khagaria	Bihar
67.	Bagmati	Benibad	Bihar
68.	Bagmati	Hayaghat	Bihar
69.	Adhwara Group	Kamtaul	Bihar
70.	Adhwara Group	Ekmighat	Bihar
71.	Kamla Balan	Jhanjharpur	Bihar
72.	Kosi	Basura	Bihar
73.	Kosi	Baltara	Bihar
74.	Kosi	Kursela	Bihar
75.	Mahnanda	Dhengraghat	Bihar
76.	Mahnanda	Jhawa	Bihar
77.	Mayurakshi	Massanjore Dam	Jharkhand
78.	Mayurakshi	Tilpara Barrage	West Bengal
79.	Mayurakshi	Narayanpur	West Bengal
80.	Ajoy	Gheropara	West Bengal
81.	Damodar	Tenughat Dam	Jharkhand
82.	Damodar	Panchet Dam	Jharkhand
83.	Damodar	Durgapur Barrage	West Bengal
84.	Barakar	Maithon Dam	Jharkhand
85.	Mundeshwari	Kangsabati Dam	West Bengal
86.	Kangsabati	Kangsabati Dam	West Bengal
87.	Kangsabati	Mohanpur	West Bengal
Brahmaputra Basin			
88.	Brahmaputra	Dibrugrah	Assam

89.	Brahmaputra	Neamatighat	Assam
90.	Brahmaputra	Tezpur	Assam
91.	Brahmaputra	Guwahati	Assam
92.	Brahmaputra	Goalpara	Assam
93.	Brahmaputra	Dhubri	Assam
94.	Burhidihing	Naharkatia	Assam
95.	Burhidihing	Khowang	Assam
96.	Desang	Naglamoraghat	Assam
97.	Dikhow	Shivsagar	Assam
98.	Subansiri	Badatighat	Assam
99.	Dhansiri (S)	Golaghat	Assam
100.	Dhansiri (S)	Numaligarh	Assam
101.	Jaibharali	Jiabharali_NTX	Assam
102.	Kopilli	Kampur	Assam
103.	Kopilli	Dharmatul	Assam
104.	Puthimari	Puthimari_NHX	Assam
105.	Pagladiya	Pagladia_NTX	Assam
106.	Beki	Beki NHX	Assam
107.	Manas	Manas NHX	Assam
108.	Sankosh	Golakganj	Assam
109.	Raidak-I	Tufanganj	West Bengal
110.	Torsa	Ghughumari	West Bengal
111.	Jaldhaka	NH-31	West Bengal
112.	Jaldhaka	Mathabhanga	West Bengal
113.	Tista	Domohani	West Bengal
114.	Tista	Mekhliganj	West Bengal
Barak & Meghna Basins			
115.	Barak	APGhat	Assam
116.	Katakhal	Matizuri	Assam
117.	Kushiyara	Karimganj	Assam
118.	Manu	Kailashar	Tripura
119.	Gumti	Sonamura	Tripura
Eastern Rivers (Excluding Mahanadi)			
120.	Subernarekna	Rajghat	Orissa
121.	Burhabalang	NH_5_Road Bridge	Orissa
122.	Baitarni	Anandpur	Orissa
123.	Baitarni	Akhuapada	Orissa
124.	Brahmani	Jenapur	Orissa
125.	Rushikuluya	Purushottampur	Orissa
126.	Vamsadhara	Gunupur	Orissa
127.	Vamsadhara	Kashinagar	Orissa
128.	Vamsadhara	Gotta Barrage	Andhra Pradesh
Mahanadi Basin			
129.	Mahanadi	Hirakud Dam	Orissa
130.	Mahanadi	Naraj	Orissa

131.	Mahanadi	Alipingal Devi	Orissa
132.	Mahanadi	Nimapara	Orissa
Godavari Basin			
133.	Godavari	Kopergaon	Maharashtra
134.	Godavari	Jaikwadi dam	Maharashtra
135.	Godavari	Gangakhed	Maharashtra
136.	Godavari	Nanded	Maharashtra
137.	Godavari	Sriram sagar	Telangana
138.	Godavari	Kaleswaram	Telangana
139.	Godavari	Eturunagaram	Telangana
140.	Godavari	Dummagudam	Telangana
141.	Godavari	Bhadrachalam	Telangana
142.	Godavari	Kunavaram	Andhra Pradesh
143.	Godavari	Rajamundry	Andhra Pradesh
144.	Godavari	Dowalaoswaram	Andhra Pradesh
145.	Wardha	Balharsha	Maharashtra
146.	Wainganga	Bhandra	Maharashtra
147.	Wainganga	Pauni	Maharashtra
148.	Manjira	Singur Dam	Telangana
149.	Manjira	Nizamsagar Dam	Telangana
150.	Indravati	Jagdapur	Chattisgarh
Krishna Basin			
151.	Krishna	Arjunward	Maharashtra
152.	Krishna	Alamati Dam	Karnataka
153.	Krishna	Narayanpur Dam	Karnataka
154.	Krishna	Priyadarshini	Telangana
155.	Krishna	Srisailam Dam	Andhra Pradesh
156.	Krishna	Prakasham Barrage	Andhra Pradesh
157.	Bhima	Deongaon	Karnataka
158.	Tungabhadra	Tungabhadra Dam	Karnataka
159.	Tungabhadra	Mantralayam	Andhra Pradesh
Southern River System:			
160.	Pennar	Nellore	Andhra Pradesh
Western River systems:			
161.	Banas	Dantiwada dam	Gujarat
162.	Sabarmati	Dharoi Dam	Gujarat
163.	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat
164.	Mahi	Kadana dam	Gujarat
165.	Mahi	Wanakbori	Gujarat
166.	Naramada	Mandala	Madhya Pradesh
167.	Narmada	Hoshangabad	Madhya Pradesh
168.	Narmada	Garudeswar	Gujarat
169.	Narmada	Bharuch	Gujarat
170.	Tapi	Hatnur Dam	Maharashtra
171.	Tapi	Ukai dam	Gujarat
172.	Tapi	Surat	Gujarat
173.	Damanganga	Madhuban Dam	Gujarat
174.	Damanganga	Vapi Town	Gujarat
175.	Damanganga	Daman	Dadra & Nagar haveli.