GOVERNMENT OF INDIA
CENTRAL WATER COMMISSION
FLOOD FORECAST MONITORING DIRECTORATE

Flood Situation of river Narmada in Hoshangabad and Mandla

Flood Situation of river Musi in Hyderabad and River Mahanadi in Odisha

FLOOD FORECASTING AND WARNING NETWORK
PERFORMANCE APPRAISAL REPORT 2020

NEW DELHI - 110066 **AUGUST, 2021**

Member(RM)
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PREFACE

Central Water Commission had started Flood Forecasting & Warning services in India in November, 1958 by setting up one forecasting station at Old Delhi Bridge, for the national capital, on the river Yamuna. Its network of Flood Forecasting and Warning Stations gradually extended throughout the country covering almost all the major inter-state flood prone river basins.

During 2020, the flood forecasting services are expanded to 328 stations which comprised of 198 level and 130 inflow forecast stations in 20 major river basins. It covered 22 States besides Union Territories of NCT Delhi, Jammu & Kashmir and Daman & Diu. The flood forecasting activities of the Commission are being performed every year from May to December through its 29 field Divisions which issue flood forecasts and warnings to the civil authorities of the states as well as to other organizations of the Central & State Governments, as and when the river water level touches or is expected to cross the warning level at the level flood forecasting stations. During Flood Season 2020, level forecasts were issued for 129 stations out of 198 stations and inflow forecasts were issued for 88 reservoir/ dam/barrages out of 130 inflow stations. The inflow forecasts are formulated whenever the inflow into the reservoirs exceeds the threshold value fixed by the respective project authorities for reservoir regulation as well as flood moderation.

During the year 2020 flood season,7 Flood Forecast stations flowed in Extreme Flood situation. Severe Flood situation was witnessed in 88 Flood Forecasting Stations and 34 Flood forecast stations witnessed Above Normal Flood Situation. The major flood events this year was the Extreme Floods witnessed in Assam ,Bihar, Chattisgarh, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Maharashtra, Odisha, Andhra Pradesh, Tamilnadu, Telangana and Karnataka state.

During the year 2020, 11721 forecasts were issued out of which 11198 forecasts (95.54%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2020 were 8243 out of which 8133 (98.67%) was within the limit of accuracy of ± 0.15 m. The number of inflow forecasts issued were 3478 out of which 3065 (88.13%) was within limits of accuracy of ±20%. Daily Flood Situation Reports cum Advisories (DFSITREPcA) based on 5-day rainfall warning of IMD were issued on daily basis. Advisories about Extreme floods in Assam, Bihar, Chattisgarh, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Maharashtra, Odisha, Andhra Pradesh, Tamilnadu, Telangana and Karnataka were issued in DFSITREPcA for taking up relief and rescue operations in advance which were well appreciated by the beneficiaries at both National and State Levels.

Rainfall-Runoff advisories based on the satellite estimates of rainfall, AWS/ARG data of IMD/CWC as well as the rainfall forecast products of Weather Research and Forecast (WRF) model at a resolution of 0.25mx0.25m was continued in 2020 flood season and was put in Uniform Resource Locator(URL)http://120.57.32.251/. CWC wishes to place its acknowledgements for the services provided by IMD through its Hydromel & Numerical Weather Prediction and AWS Lab units in the Headquarters, Pune as well as various FMOs of IMD.

The level of performance achieved, has been possible as a result of the dedicated team work of the officers and staff manning the various activities of hydro-meteorological observations & flood forecasting and monitoring of the field offices.

Flood Forecast Monitoring (FFM) Directorate plays an important role in compiling the information received from various field offices at Headquarters and issues daily bulletins which are sent to all stakeholders. I wish to place on record my deep appreciations of the efforts put in by the officers and staff of FFM, FCA - 1 and FCA - 2 Directorates in carrying out the flood forecasting work with utmost devotion & dedication. The staff of FFM Directorate, along with other supporting staff from other Directorates/Wings during flood duties in the flood season of 2020 also deserves all appreciation in keeping the control room fully functional on all the weekdays, including holidays, Saturdays & Sundays. The control room was kept operational round the clock throughout the flood season.

It is hoped that the momentum gained in expanding the flood forecasting network, improving performance of the forecast and adopting various modernization including in the field of dissemination techniques will be further accelerated to achieve greater effectiveness of each and every forecast with the help of mathematical modelling supported by real-time data from telemetry.

Suggestions/ comments of the users of this report with a view to further enhance its usefulness are welcomed and will be in corporate in the next edition.

New Delhi
August,2021

(Ranjan Kumar Sinha)
Member (RM)

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EXECUTIVE SUMMARY

0.1 METEOROLOGICAL SITUATION

During 2020, the southwest monsoon performance was as given below.

The seasonal (June - September) rainfall over the country as a whole was 109% of its Long Period Average (LPA) in 2020. It was the third highest after 112% of LPA in 1994 and 110 % of LPA in 2019.

- Seasonal rainfalls over Northwest India, Central India, South Peninsula and East & Northeast (E & NE) India were 86%, 115%, 129% and 107% of their respective LPA.
- Out of 36 meteorological subdivisions, 2 subdivisions (5% of the total area of the country) received large excess rainfall, 13 subdivisions (35% of the total area of the country) received excess rainfall, 16 subdivisions (45% of the total area of the country) received normal seasonal rainfall and 5 subdivisions (15% of the total area of the country) received deficient season rainfall during the season.
- Monthly rainfall over the country as a whole was 117% of LPA in June, 90% of LPA in July, 127% of LPA in August, and 105% of LPA in September.
- Southwest monsoon current reached south Andaman Sea and Nicobar Islands on 17th May, 2020 (5 days ahead of its normal date), but further advance was sluggish. It set in over Kerala on 1st June coinciding with its normal date for onset over Kerala; Monsoon covered the entire country on 26th June, 2020; 12 days before its normal date (8th July).
- Monsoon started withdrawing from western parts of northwest India on 28th September, 2020 against the normal date of 17th September, 2020 with a delay of around 11 days. The Southwest Monsoon withdrew from the entire country on 28th October, 2020.
- During the season, one Severe Cyclonic Storm "NISARGA" formed during 1st to 4th June. This year also witnessed absence of monsoon depression during the season.
- The forecast for monsoon onset over Kerala for this year was correct, which is the fifteenth consecutive correct forecast for the event (except for the year 2015) since issuing of forecast for the onset over Kerala started in 2005. The Forecasted date of onset of monsoon over Kerala was 5th June with a model error of ±4 days and realized date of onset of monsoon over Kerala was 1st June in this year.
- The forecasts for the rainfall over the country as a whole during the season, forecasts for the seasonal rainfall over three broad homogeneous geographical regions (Central India, Northeast India and South Peninsula) and forecast for August rainfall and for rainfall of second half of the monsoon season for the country as a whole were found to be underestimated with respect to the actual rainfall whereas the forecasts for the rainfall for the country as a whole during July and forecast for the seasonal rainfall for Northwest India were found to be overestimated as compared to the actual rainfall.

0.2 FLOOD SITUATION

Extreme flood situation was witnessed in 7 Flood Forecasting stations, Severe Flood situation was witnessed in 88 Flood Forecasting Stations and 34 Flood forecast stations witnessed Above Normal Flood Situation. No flood forecast were issued for 111 flood forecasting stations which include 69 level forecasting stations and 42 inflow forecasting stations. Out of the 130 reservoirs in the network, inflow forecasts were issued at 88 reservoirs and in 42 reservoirs the inflows did not exceed the criteria for issuing inflow forecasts. The highlight of this year flood was the Extreme Floods witnessed in Assam, Bihar, Chattisgarh, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Maharashtra, Odisha, Andhra Pradesh, Tamilnadu, Telangana and Karnataka state.

0.3 FLOOD FORECASTING PERFORMANCE

During the year 2020, 11721 forecasts were issued out of which 11198 forecasts (95.54%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2020 were 8243 out of which 8133 (98.67%) was within the limit of accuracy of ±0.15 m. The number of inflow forecasts issued was 3478 out of which 3065 (88.13%) were within limits of accuracy of ±20%. CWC issued Daily Flood Situation Report cum Advisories (DFSITREPcA) during the monsoon season. This contains the usual daily rainfall situation, rainfall forecast for the next 5 days, daily flood bulletin for the day and the flood situation and advisories for the next few days, GIS based Map indicating the districts alerted/affected by flood and reservoirs having inflow forecasts. Further, the report was sent to all beneficiaries including State Governments through e-mail on a daily basis.

SALIENT FEATURES OF FLOOD FORECASTING SYSTEM

The "Salient Features" of Flood Forecasting and Warning System of the Central Water Commission are given in the table shown below:

1.	Establishment of 'First Scientific Flood Forecasting Unit' (F.F.U.) at Delhi in India	November, 1958
2.	Date of issue of first scientific flood forecast	25th July, 1959
3.	Name of first forecasting site and river	Delhi Railway Bridge (old) on River Yamuna
4.	Year of commencement of flood forecasting system on the inter-state rivers i.e. first national level expansion	1969
5.	No. of Chief Engineer's offices including one CE (Flood Management) at CWC' headquarters	15
6.	No. of Superintending Engineer's offices including one Flood Forecast Monitoring Directorate at CWC headquarter	16
7.	No. of present Flood Forecasting Divisions	29
8.	No. of states including union territories covered under Flood Forecasting Programme	25
9.	No. of forecasting sites	328
10.	No. of gauge and gauge & discharge sites	1569
11.	No. of Telemetry Stations installed	934
13.	No. of forecasts issued in flood season 2011	5991
14.	No. of forecasts issued in flood season 2012	5031
15.	No. of forecasts issued in flood season 2013	7060
16.	No. of forecasts issued in flood season 2014	4772
17.	No. of forecasts issued in flood season 2015	4072
18.	No. of forecasts issued in flood season 2016	6239
19.	No. of forecasts issued in flood season 2017	6297
20.	No. of forecasts issued in flood season 2018	6851
21.	No. of forecasts issued in flood season 2019	9754
22.	No. of forecasts issued in flood season 2020	11721

CHAPTER - 1

NATIONAL FLOOD FORECASTING NETWORK

1.1 FLOOD FORECASTING SERVICES

Flood causes considerable damage to human lives and property almost every year. About one third of total flood prone area (40 mHa assessed by the Rashtriya Barh Ayog) of the country has been provided with reasonable protection against flood of a low magnitude due to techno-economic constraints; but there is no protection from floods of higher magnitude. Since adoption of National Flood Policy by Government of India in 1954, it was realized that a total protection against flood by structural means alone is not possible and that optimum solution would consist of a mixture of structural and non-structural measures. Therefore, stress has been laid on non-structural measures like flood forecasting and warning, which is most important among such means to minimize the damage potential from floods. Accurate and timely flood forecasts and advance warning have, therefore, to be aimed for providing valuable time to the people and to civil authorities in taking preventive measures like evacuation, relief and rehabilitation measures, preparedness for flood fighting by engineering authorities, etc. and thus mitigating such loses from floods.

1.2 FLOOD FORECASTING NETWORK IN THE COUNTRY

Flood Forecasting has been recognized as the most important and cost effective non-structural measure for flood management. Recognizing the great importance of this measure, flood forecasting of river Yamuna at Delhi was suggested by Reddy Committee set up by the then Hon'ble Prime Minister, Govt. of India to manage flooding of Delhi. Accordingly in the year 1958, CWC commenced the flood forecasting services in a small way by establishing flood forecasting unit for issuing water level forecasts of the Yamuna for the National Capital, Delhi. On the recommendation of various committees/ panels, a "Flood Forecast & Warning Organisation" was set up in CWC in 1969 to establish forecasting sites on inter-state rivers at various flood prone places in the country. 41 forecasting sites were added in 1969, making total number of forecasting sites to 43. Extension of the services followed from time to time. The year-wise positions of the number of flood forecasting sites till the flood season 2020 in the network of Central Water Commission are shown in the **Table - 1.1.**

Table - 1.1: Year-wise expansion of forecasting sites in CWC

Year	Cumulative No. of Flood Forecasting Sites	Year	Cumulative No. of Flood Forecasting Sites
1958	01	2003	166
1965	02	2004	172
1969	43	2005	173
1977	77	2006	175
1980	84	2015	176
1985	145	2016	199
1987	147	2017	226

1990	157	2018	249
2001	159	2019	325
2002	161	2020	328

The 'National Flood Forecasting and Warning Network' of Central Water Commission, which comprised of 328 flood forecasting sites including 130 inflow forecasting sites in flood season 2020 is shown in **Map - 1.** The number of flood forecasting sites on each of the major inter-state river systems is in the **Table - 1.2**.

Table - 1.2: Number of flood forecasting sites in inter-state river systems

Sr. No.	Major Interstate River Systems	No. of FF stations		
		Level	Inflow	Total
1	Indus and its tributaries	3	0	**3**
2	Ganga & its tributaries	95	39	**134**
3	Brahmaputra & its tributaries	39	5	**44**
4	Barak System	6	0	**6**
5	Subarnarekha (i/c Burhabalang)	4	3	**7**
6	Brahmani & Baitarni	3	2	**5**
7	East Flowing (Mahanadi to Pennar)	4	4	**8**
8	Narmada	4	6	**10**
9	Tapi	1	2	**3**
10	Mahi	1	4	**5**
11	Sabarmati	1	1	**2**
12	Mahanadi	3	3	**6**
13	Godavari	18	24	**42**
14	Krishna	5	17	**22**
15	West Flowing Rivers (Kutch & Saurashtra)	1	1	**2**
16	West Flowing Rivers (Tapi to Tadri)	2	1	**3**
17	Cauvery and its tributaries	3	9	**12**
18	Pennar	1	1	**2**
19	East Flowing Rivers (Pennar to Kanyakumari)	1	6	**7**
20	West Flowing River (Tadri to Kanyakumari)	3	2	5
Total		**198**	**130**	**328**

The above flood forecasting network covers the following 22 states & 3 Union Territories (UTs). State/ UT wise distribution of flood forecasting stations is shown in **Table - 1.3.**

Table - 1.3: State/ UT wise Flood Forecasting Network in CWC

Sl. No.	Name of State/UT	Number of flood Forecasting Stations		
		Level	Inflow	Total
1	Andhra Pradesh	10	10	20
2	Arunachal Pradesh	3	0	3
3	Assam	30	0	30
4	Bihar	40	3	43
5	Chhattisgarh	1	2	3
6	Gujarat	6	7	13
7	Haryana	1	1	2
8	Himachal Pradesh	1	0	1
9	Jharkhand	2	15	17
10	Karnataka	1	14	15
11	Kerela	3	2	5
12	Madhya Pradesh	2	10	12
13	Maharashtra	8	13	21
14	Odisha	12	7	19
15	Rajasthan	3	11	14
16	Sikkim	3	5	8
17	Tamil Nadu	4	11	15
18	Telangana	5	8	13
19	Tripura	2	0	2
20	Uttar Pradesh	39	5	44
21	Uttarakhand	4	2	6
22	West Bengal	12	4	16
23	Daman & Diu	1	0	1
24	NCT of Delhi	2	0	2
25	Jammu & Kashmir	3	0	3
Total		**198**	**130**	**328**

Central Water Commission through its twenty nine flood forecasting divisions issued forecasts to the various user agencies, which includes various civil/ engineering agencies of the States/ Central Governments such as Irrigation/ Revenue/ Railways/ public undertakings and Dam/ Barrage Authorities/ District Magistrates/ Sub Divisional Officers besides the Defence Authorities involved in the flood loss mitigation work. During the flood season, the Hon'ble Minister of Jal Shakti, Government of India, the Chairman and the Member (River Management) of Central Water Commission were also being apprised of the latest flood situations in the above river basins in the country.

1.3 CLASSIFICATIONS OF VARIOUS FLOOD SITUATIONS

The Central Water Commission has categorized various flood situations, for monitoring the floods in the country through its level flood forecasting network, into the following three different categories, depending upon the severity of floods i.e. based on floods magnitudes.

(i) ABOVE NORMAL FLOOD

The river is said to be in **'ABOVE NORMAL'** situation at any water level stations when the water level of the river touches or crosses the warning level, but remains below the danger level of the forecasting site.

(ii) SEVERE FLOOD

If the water level of the river touches or crosses its danger level, but remains below the Highest Flood Level of the site (commonly known as 'HFL') then the flood situation is called the '**SEVERE FLOOD'** situation.

(iii) EXTREME FLOOD

The flood situation is said to be **'EXTREME FLOOD'** when the water level of the river touches or crosses the '**HIGHEST FLOOD LEVEL'** recorded at any water level station so far.

1.4 STANDARD OPERATING PROCEDURE (SOP) FOR FLOOD FORECASTING & WARNING

The basic activity of data collection, its transmission and dissemination of flood forecasts to the local administration is carried out by the field divisions of CWC. The modelling centres and Divisional Flood Control Rooms (DFCR) are located in the premises of the field divisions. The field divisions perform these activities as per existing Manual on Flood Forecasting which contains the following critical activities as the general SOPs:

1. Nomination of Nodal Officers of CWC for interaction with the Nodal Officers of concerned State Governments before monsoon every year.
2. Gearing up of flood forecasting network before monsoon every year.
3. Operation of Divisional Flood Control Room (DFCR) during monsoon every year.
4. Operation of Central Flood Control Room (CFCR) during monsoon every year.
5. Issue of flood forecasts to designated officers of concerned State and transmission thereof through FAX/ Telephone/ E-mail/ Special Messengers during monsoon every year.
6. Sending flood alerts through SMS on Mobile Phones to the concerned officers of State/ Central Government during severe (3 hourly updates) and extreme (1 hourly updates) flood situations and uploading of Flood Forecasts and hourly water level data in CWC's Flood Forecasting Website as per Standard Operating procedure (SOP) for issuing alerts and electronic messaging in the event of disaster situations issued by Ministry of Home Affairs from time to time.

For the purpose of dissemination of alerts to PMO/ Cabinet Secretariat, a uniform system has been devised by categorizing each type of alert in stages- Yellow, Orange and Red.

Categories of alerts for flood in respect of level forecasts is as indicated below.

Category	Description	Stage
III	Above Normal Flood (Water level between Warning level and Danger level)	Yellow
II	Severe Flood (Water level below HFL and above Danger Level)	Orange
I	Extreme Flood (Water Level equal and above Highest Flood Level - HFL)	Red

1.5 INFLOW FORECAST

Inflow Forecasts are issued for dams/ reservoirs/ barrages in various river basins in the country. The project authorities have identified the threshold inflow limits for issue of forecast considering various factors such as safety of the dam, status of reservoir, downstream channel/ canal requirements. The inflow in volume during the given duration indirectly indicates the possibility of accommodating the given volume or otherwise in the reservoir. The outflow pattern is decided keeping in view of the safety measures at the reservoir and the likely impact of the outflow from the reservoir to cause damages/ difficulties in the downstream areas giving due attention to the Emergency Action Plan (EAP) of the project. There is need for EAP for all reservoirs covering normal operational releases and high releases during floods.

The salient features of all Flood Forecasting Sites, the details of all the sites basin-wise as well as State-wise during the flood season 2020, is shown at **Annex - I, Annex – II(A&B)** and **Annex – III(A&B)** respectively.

1.6 DATA COMMUNICATION SYSTEM

Central Water Commission maintains Wireless Stations for near real–time data communication. These wireless sets work on pre-fixed schedules for receiving the vital hydro-meteorological data immediately after its observation. In addition, telephone/ mobile phone, fax and internet are also used for dissemination of flood forecasts to user agencies.

Now under modernization program, satellite based Telemetry System has been installed at various stations for sensor based automatic data collection and satellite based communication.

The installation of Telemetry System for automatic sensor based data collection and satellite based data communication was initiated during IX Plan. At present, 934 telemetry stations have been installed.

In order to receive and analyses data collected by the telemetry stations, Earth Receiving Stations and Modelling Centres have been installed in various parts of the country during different Plan periods. There were 3 Earth Receiving Stations (ERS) in the country at New Delhi, Jaipur and Burla. A total of 27 Modelling centres have been installed in the country. The data reception is being monitored from Central Flood Control Room at CWC Headquarter, New Delhi also.

The data received was used mainly by the divisions issuing forecast by MIKE-11. Also, it is planned to transfer data observed through telemetry to WIMS software for flood forecasting activities.

1.7 DAMAGE DUE TO FLOODS/ HEAVY RAINS BETWEEN 1953 TO 2020

The damage due to floods for the entire country was Rs. 15863.526 Crore during the flood season 2019. The average annual damages to crops, houses and public utilities from the year 1953 to 2019 as reported by the States/ UTs are of the order of Rs. 6208.366 Crore. The maximum annual damage reported is Rs. 57291.098 Crore during 2018.

A comparative details showing the details of damages occurred during the flood season 2018 to 2020 on different accounts, based on the reports (tentative), received from the revenue authorities of the State Governments is given in the **Table - 1.4**.

Table 1.4: Damages occurred during flood season 2018 to 2020

Sl. No.	Items	Flood Damages				Flood Damages (1953 - 2020)	
		2018	2019	2020*	Average (1953-2019)	Maximum	
						Year	Damage
1	Area affected (mha)	7.72	4.49	-	7.14	1978	17.5
2	Population affected (millions)	37.40	46.35	22.05	32.41	1978	70.450
3	Damage to Crops (mha)	2.52	10.69	2.04	4.02	2005	12.299
4	Damaged to crops (Rs. Crore)	3708.19	10902.35	148.87	1878.15	2015	17043.948
5	Damage to houses (numbers)	913414	656595	243977	1228179	2015	3959191
6	Damage to houses (Rs. Crore)	2508.66	462.79	99.50	846.95	2009	10809.795
7	Cattle lost (number)	60279	25852	41683	91574	1979	618248
8	Human lives lost (numbers)	1839	2754	2107	1674	1977	11316
9	Damage to public	12132.92	4498.39	2541.36	3413.30	2013	38937.843

	Utilities (Rs. Crores)						
10	Total damages to crops, houses & public utilities (Rs. crores)	21849.97	15863.53	2807.41	6208.37	2018	57291.098

***** Tentative

1.8 ANALYSIS OF PERFORMANCE OF FLOOD FORECASTING NETWORK

CWC carried out analysis and appraisal of the forecasting work, at the end of monsoon season. Based on this, measures for improvements, if necessary, are identified. A summary of the performance of the work carried out by the field Divisions during the flood season 2020 has been presented in **Chapter - 4**. While the performance of the flood forecasting system is satisfactory, yet there is constant endeavor for improving the performance; especially for additional warning time as new technology and more data are becoming available.

1.9 ORGANISATIONAL SET-UP OF FLOOD FORECASTING NETWORK

The present organizational set up of Flood-forecasting & Warning Establishment of Central Water Commission under the Member (River Management) is spread over regional offices of CWC each headed by a Chief Engineer. Sixteen Circle Offices and twenty nine Divisions in its field formations carry out flood forecasting activities. Chief Engineer (Flood Management) and Flood Forecast Monitoring Directorate monitor the Flood Forecasting activities in the headquarters. It also issues flood bulletins at national level.

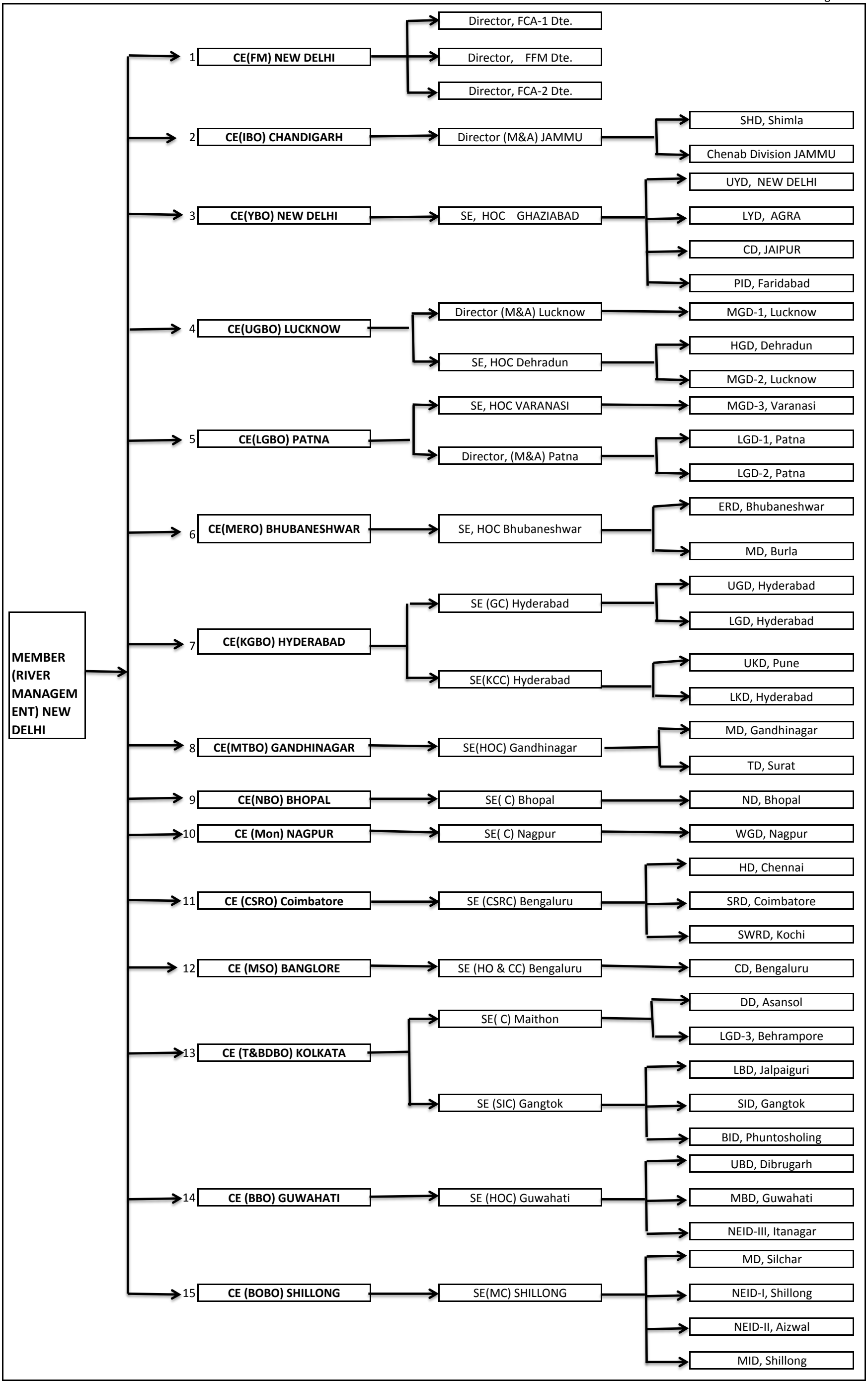
The organizational chart of Flood Forecasting and Warning set up of the Central Water Commission is given at **Figure - 1.0.**

Map - 1: Flood Forecasting Network in India

List of Flood Forecast Stations											
1	Sangam	56	Lucknow (Hanuman Setu)	111	Jainagar	166	Golokganj	221	Panam Dam	276	Rajahmundry (Rly Bridge)
2	Rammunshibagh	57	Rae Bareilly	112	Jhanjarpur	167	Tufanganj	222	Wanakbori Weir	277	Dowlaiswaram Barrage
3	Safapura	58	Jaunpur	113	Sonebarsa	168	NH 31 (Jaldhaka)	223	Mandla	278	Atreyapuram
4	Srinagar	59	Ghazipur	114	Baltara	169	Hasimara	224	Barna Dam	279	Koyna Dam
5	Ganganagar	60	Buxar	115	Kursela	170	Ghugumari	225	Bargi Dam	280	Warna Dam
6	Rishikesh	61	Ballia	116	Sahibganj	171	Mathabanga	226	Tawa Dam	281	Arjunwad
7	Haridwar	62	Banbasa Barrage	117	Taibpur	172	Teesta III HEP	227	Hoshangabad	282	Hippargi Barrage
8	Dharmanagari Barrage	63	Katarniaghat Barrage	118	Dhengraghat	173	Rangit-III HEP Dam	228	Indira Sagar Dam	283	Hidkal Dam
9	Garhmukhteshwar	64	Elginbridge	119	Jhawa	174	Teesta V HEP	229	Omkareswar Dam	284	Almatti Dam
10	Narora Barrage	65	Ayodhya	120	Araria	175	Singtam	230	Sardar Sarovar Dam	285	Malaprabha Dam
11	Kachlabridge	66	Kakardhari	121	Farakka	176	Rongpo Dam	231	Garudeswar	286	Narayanpur Dam
12	Fatehgarh	67	Balrampur	122	Massanjore Dam	177	Rongli Dam	232	Bharuch	287	Vir Dam
13	Kalagarh Dam	68	Bansi	123	Tilpara Barrage	178	Melli Bazar	233	Hathnur Dam	288	Ujni Dam
14	Moradabad	69	Birdghat (Gorakhpur)	124	Narayanpur	179	Jorethang	234	Ukai Dam	289	Deongaon Bridge
15	Bareilly	70	Turtipar	125	Sikatia Barrage	180	Domohani Bridge	235	Surat	290	PD Jurala Project
16	Dabri	71	Darauli	126	Gheropara	181	Mekhliganj	236	Madhuban Dam	291	Upper Tunga
17	Kannauj	72	Gangpur Siswan	127	Tenughat Dam	182	AP Ghat (Silchar)	237	Vapi	292	Bhadra Dam
18	Ankinghat	73	Chhappra	128	Tilaiya Dam	183	Matizuri	238	Daman	293	Tungabhadra Dam
19	Kanpur	74	Bansagar Dam	129	Konar Dam	184	Badarpurghat	239	Nasik	294	Singatlur Barrage
20	Dalmau	75	Rihand Dam	130	Panchet Dam	185	Karimganj	240	N M D Weir	295	Mantralayam
21	Phaphamau	76	Annaraj Dam	131	Maithon Dam	186	Kailashahar	241	Kopergaon	296	Sunkesula Barrage
22	Paonta Sahib	77	Bhirawa Dam	132	Durgapur Barrage	187	Sonamura	242	Mula Dam	297	Kurnool
23	Hathnikund Barrage	78	Inderpuri Barrage	133	Sundar Dam	188	Getlasud Dam	243	Jaikwadi Dam	298	Srisailam Dam
24	Karnal Bridge	79	Inderpuri	134	Harinkhola	189	Chandil Dam	244	Manjlegaon Dam	299	Musi Dam
25	Mawi	80	Koelwar	135	Hinglow Dam	190	Galudih Barrage	245	Gangakhed	300	Dr KLRS Pulichintala Dam
26	Dhansa	81	Maner	136	Kangsabati Dam	191	Jamshedpur	246	Yeldari Barrage	301	Prakasam Barrage
27	Delhi Railway Bridge	82	Patna (Dighaghat)	137	Mohanpur	192	Rajghat	247	Nanded	302	Avanigadda
28	Mathura	83	Gandak Barrage	138	Yingkiang	193	Mathani Rd Bridge	248	Karanja Dam	303	Somasila Dam
29	Agra	84	Khadda	139	Passighat	194	Govindpur (NH5 Road Bridge)	249	Singur Dam	304	Nellore
30	Etawah	85	Chatia	140	Dholla Bazar	195	Salandi Dam	250	Nizamsagar Dam	305	Poondi Reservoir
31	Gandhisagar Dam	86	Dumariaghat	141	Dibrugarh	196	Anandpur	251	Sriramsagar Dam	306	Chembarampakkam Lake
32	Rana Pratap Sagar Dam	87	Rewaghat	142	Namsai	197	Akhuapada	252	Kaddam Project	307	Sathanur Dam
33	Kota Barrage	88	Hajipur	143	Naharkatia	198	Rengali Dam	253	Sripada Yellampally Project	308	Gomukhi Dam

34	Kota City	89	Patna Gandhighat	144	Chenimari (Khowang)	199	Jenapur	254	U Wainganga Project	309	Wellington Dam
35	Bisalpur Dam	90	Amanat Dam	145	Nanglamoraghat	200	Ravi Shankar Dam	255	Totladoh Project	310	Harangi Dam
36	Kalisindh Dam	91	Batane Dam	146	Sibsagar	201	Bango Dam	256	Bhandara	311	Hemavathy Dam
37	Parwan Dam	92	Sripalpur	147	Neamatighat	202	Hirakud Dam	257	Gosikhurd Dam	312	Kabini Dam
38	Gambhiri Dam	93	Hathidah	148	Chouldhuaghat	203	Naraj	258	Pauni	313	K R Sagar Dam
39	Panchana Dam	94	Munger	149	NH Xing Ranganadi	204	Alipingal	259	U Wardha Prjoject	314	Mettur Dam
40	Gudha Dam	95	Lalbeghiaghat	150	Badatighat	205	Nimapara	260	Issapur/Upper Penganga	315	Bhavanisagar Dam
41	Parwati Dam	96	Ahirwalia	151	Golaghat	206	Purushottampur	261	Balharsha	316	Savandapur
42	Dholpur	97	Sikandarpur (Muzzafarpur)	152	Numaligarh	207	Gunupur	262	Sirpur Town	317	Kodumudi
43	Auraiya	98	Samastipur	153	Jiabharali NT Road Crossing	208	Kashinagar	263	Kaleswaram	318	Kodaganar Dam
44	Kalpi	99	Rosera	154	Tezpur	209	Gotta Barrage	264	Laxmi Barrage	319	Musiri
45	Hamirpur	100	Khagaria	155	Kampur	210	Thottapalli reservoir	265	U Indravati Project	320	Upper Anicut
46	Rajghat Dam	101	Bhagalpur	156	Dharamtul	211	Madduvalasa Rsvr	266	Jagdalpur	321	Grand Anicut
47	Matatila Dam	102	Kahalgaon	157	Guwahati	212	Narayanpuram Anicut	267	Eturunagaram	322	Vaigai Dam
48	Mohana	103	Kosi Barrage	158	Puthimari NH Crossing	213	Srikakulam	268	Dummagudem	323	Madurai
49	Shahjina	104	Basua	159	Pagladiya NT RdCrossing	214	Dantiwada Dam	269	Bhadrachalam	324	Kumbidi
50	Banda	105	Dheng Bridge	160	Mathanguri	215	Abu Road	270	Kolab Project	325	Idduki Dam
51	Chillaghat	106	Runisaidpur	161	Beki Road Bridge	216	Dharoi Dam	271	Machkund Project	326	Idamalayar Dam
52	Naini	107	Benibad	162	Manas NH Crossing	217	Shubhash Bridge (Ahmedabad)	272	Balimela Project	327	Neeleswaram
53	Chhatnag (Allahabad)	108	Kamtaul	163	Goalpara	218	Mahi Bajajsagar Dam	273	Chinturu	328	Malakkara
54	Mirzapur	109	Ekmighat	164	Kokrajhar	219	Som Kamla Amba Dam	274	Kunavaram		
55	Varanasi	110	Hayaghat	165	Dhubri	220	Kadana Dam	275	Indirasagar		

ORGANISATIONAL CHART OF FLOOD FORECASTING AND WARNING SET UP OF CENTRAL WATER COMMISSION Fig-1.0



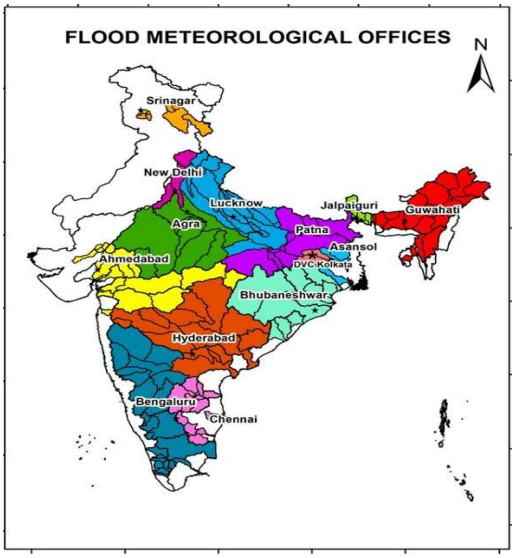
NOTE:- Chief Office-15, Directorate-3, Circle Office-18, Division Office-38(29 involved in Flood Forecasting)

CHAPTER – 2

ROLE OF IMD IN FLOOD FORECAST ACTIVITIES

2.0 ROLE OF IMD

CWC is the nodal agency for issuing Flood Forecast and IMD is the nodal agency for issuing Quantitative Precipitation Forecast (QPF). The meteorological support is provided in terms of 'Quantitative Precipitation Forecast (QPF)' through Hydro-met Bulletins. QPF bulletin is issued at 930hrs IST and Hydro-met Bulletin at 1230hrs IST with further modification by FMOs. Forecast for a lead time of 7-days (forecast for 3 days and outlook for subsequent 4 days) are issued daily during flood season. QPF bulletins are further modified in the evening, if situation demands. QPF Bulletins including heavy rainfall warning are also issued by concerned FMOs during cyclone period or when there is a chance of heavy rainfall which may lead to flood in non-flood season also.



Input comprises in terms of Hydro-met Bulletin which contains the following:

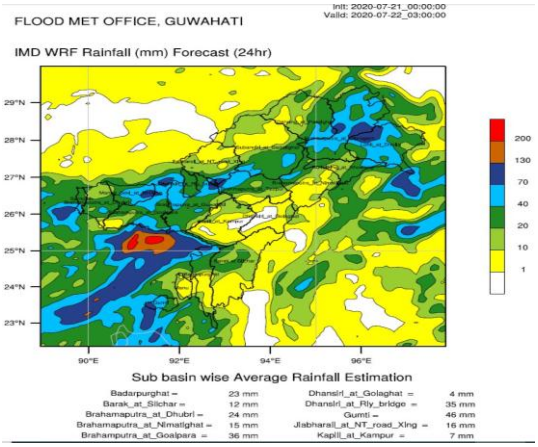
a. Synoptic situations
b. Spatial and temporal distribution of rainfall
c. Sub-basin wise categorical QPF for day-1, day-2 and day-3 as follows:
   i) 0mm (ii) 0.1-10mm (iii) 11-25mm (iv) 26-50mm (v) 51-100mm (vi) >100mm
d. Outlook for the subsequent four days
e. Station wise recorded significant rainfall
f. Heavy rainfall warnings
g. Sub-basin wise past 24hrs realized rainfall

IMD has established 14 Flood Meteorological Offices (FMOs) at different parts of flood prone areas of the country which are located at Agra, Ahmedabad, Asansol, Bhubaneswar, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Srinagar, Chennai, Bengaluru and

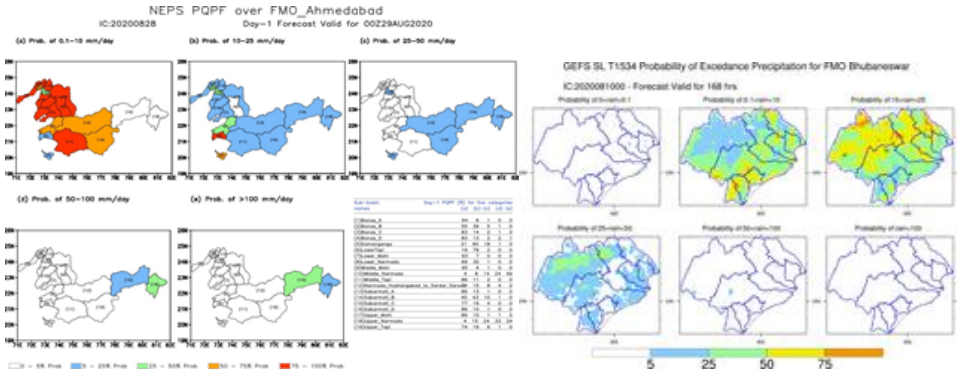
Patna which caters to the river catchments of Yamuna, Narmada, Tapi, Ajoy, Mayuraksi and Kangasbati, Mahanandi, Brahmani and Subernarekha, Brahmaputra, Dhansiri and Barak, Godavari and Krishna, Cauvery, Teesta, Ganga and Sharada, and Sahibi, Kosi, Baghmati, Gandak, etc. IMD also provides similar support to Damodar Valley Corporation (DVC) for the river basins Barakar and Damodar. Flood Meteorological Offices (FMOs, 14 in all over India) of India Meteorological Department provide Meteorological support to Flood Forecasting Divisions (FFDs) of Central Water Commission (CWC) to help them issue 'Flood warnings/Flood alerts'. The performance of QPF is verified for the monsoon season annually.

2.1 MODEL BASED QUANTITATIVE PRECIPITATION FORECAST

Sub-basin wise Quantitative Precipitation Forecast (QPF) using dynamical model WRF ARW (9Kmx9 Km) based on 00UTC and 12UTC for day-1 to day-3, GFS (12kmx12km) based on 00UTC for day-1 to day-7, NCUM (12kmx12km) for day-1 to day-7, Multi model Ensemble (25kmX25km) based on 00UTC for day-1 to day-5 are computed and uploaded on the IMD's websitehttp://hydro.imd.gov.in/hydrometweb/(S(kkxivq454zpfjnzmak3d4q55))/PRODUCTS/QPF /index.html for 153 flood prone river sub-basins. An example is shown in Fig. given below:



NWP Model based gridded daily rainfall forecast (WRF & GFS) are provided operationally to CWC for their flood forecasting model. A new initiative has been taken to improve accuracy of QPF. Sub basin wise dynamical models viz. GEFS and NEPS based Probabilistic QPF are being generated daily and uploaded on the IMD website, which has been found very useful for under heavy rainfall situations by the forecasters. An example is shown in Figs. given below.



2.2 SOUTHWEST MONSOON

India gets about 75% of its Annual rainfall during the Southwest monsoon season from June to September except over some portions of southeastern parts of Peninsular India where the main rains occur during the period of Northeast monsoon from October to December, which overlap with the receding stage of the Southwest monsoon in October. Occasionally, cyclonic storms develop in the South Bay and move into the Peninsula producing heavy rains during Northeast monsoon season.

Southwest monsoon onsets over Kerala in the beginning of June and then advances further. During the season, spells of heavy, very heavy and extremely heavy rainfall occur across the country especially along the west coast of the Peninsula and on the southern slopes of Khasi and Jaintia hills in Northeast India.

In association with Depressions which occasionally form in the North Bay of Bengal and move west-northwestwards, heavy rains occur in the central parts of the country, Orissa, Gangetic West Bengal, Bihar, East and West Madhya Pradesh, East Rajasthan and Gujarat region.

A very important characteristic of southwest monsoon is the occurrence of "break". The break situations arise when the monsoon trough shifts to the foothills of Himalayas and are very important as these cause floods in the rivers rising from the Eastern Himalayas. Sometimes, the phenomenon of break sets in immediately after a monsoon depression and occurrence of associated intense rainfall activity takes place. These two causes occurring in succession serve to intensify the floods.

The whole India has been divided into 36 meteorological subdivisions by India Meteorological Department (IMD) for the purpose of description of rainfall/monsoon activities and for forecasting purpose.

The performance of monsoon rainfall over the country is monitored by evaluating the departures of area weighted total rainfall from the normal rainfall in respect of meteorological districts, sub-divisions, State and Country as a whole. IMD has categorized the rainfall as Large excess, Excess, Normal, Deficient and Large deficient according to the following criteria.

Large Excess:	+60% or more of the normal
Excess:	+20% to +59% of the normal
Normal:	+19% to -19%of the normal
Deficient:	-20% to - 59% of the normal
Large Deficient:	-60% to -99% of the normal
No Rain (N.R.):	-100% of the normal

Normal monsoon seasonal rainfall is defined as the Long Period Average say of 50 years for the period from 1st June to 30th September. Presently, Long Period average for the

years 1961 to 2010 is being used to define normal. For the country as a whole the normal rainfall during the period from 1st June to 30th September is 88 cm.

2.3 HIGHLIGHTS OF SOUTH-WEST MONSOON 2020

- The seasonal (June-September) rainfall over the country as a whole was 109% of its Long Period Average (LPA) in 2020. It was the third highest after 112% of LPA in 1994 and 110 % of LPA in 2019.

- Seasonal rainfalls over Northwest India, Central India, South Peninsula and East & Northeast (E & NE) India were 86%, 115%, 129% and 107% of their respective LPA.

- Out of 36 meteorological subdivisions, 2 subdivisions (5% of the total area of the country) received large excess rainfall, 13 subdivisions (35% of the total area of the country) received excess rainfall, 16 subdivisions (45% of the total area of the country) received normal seasonal rainfall and 5 subdivisions (15% of the total area of the country) received deficient season rainfall during the season.

- Monthly rainfall over the country as a whole was 117% of LPA in June, 90% of LPA in July, 127% of LPA in August and 105% of LPA in September.

- Southwest monsoon current reached south Andaman Sea and Nicobar Islands on 17th May 2020 (5 days ahead of its normal date), but further advance was sluggish. It set in over Kerala on 1st June coinciding with its normal date for onset over Kerala; Monsoon covered the entire country on 26th June 2020; 12 days before its normal date (8th July).

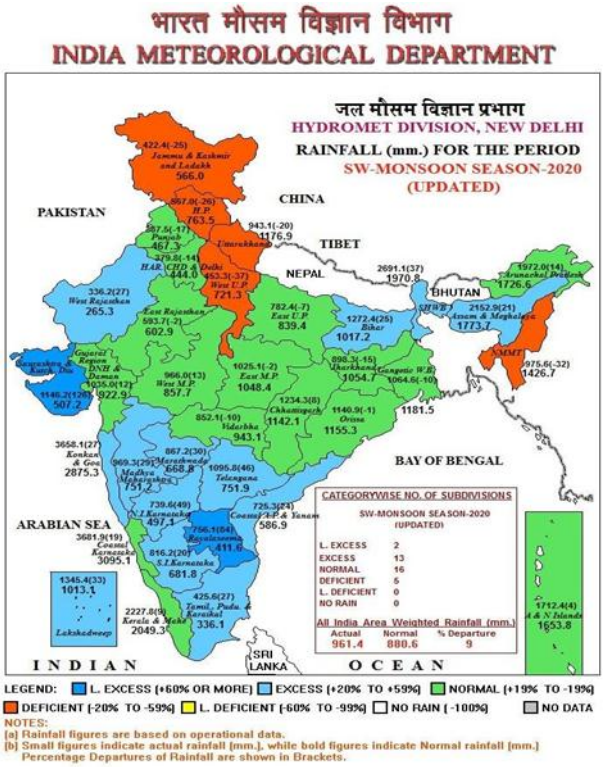
- Monsoon started withdrawing from western parts of northwest India on 28th September 2020 against the normal date of 17th September 2020 with a delay of around 11 days. The Southwest Monsoon withdrew from the entire country on 28th October 2020.

- During the season, one Severe Cyclonic Storm 'NISARGA' formed during 1st to 4th June. This year also witnessed absence of monsoon depression during the season.

- The forecast for monsoon onset over Kerala for this year was correct, which is the fifteenth consecutive correct forecast for the event (except for the year 2015) since issuing of forecast for the onset over Kerala started in 2005. The Forecasted date of onset of monsoon over Kerala was 5th June with a model error of ±4 days and realized date of onset of monsoon over Kerala was 1st June in this year.

- The forecasts for the rainfall over the country as a whole during the season, forecasts for the seasonal rainfall over three broad homogeneous geographical regions (Central India, Northeast India and South Peninsula) and forecast for August rainfall and for rainfall of second half of the monsoon season for the country as a whole were found to be underestimated with respect to the actual rainfall whereas the forecasts for the rainfall for the country as a whole

during July and forecast for the seasonal rainfall for Northwest India were found to be overestimated as compared to the actual rainfall.



2.4 ONSET AND ADVANCE OF SOUTHWEST MONSOON 2020

The South West Monsoon (SWM) arrived over Andaman Sea on 17th May 2020, 5 days before its normal date of arrival, however its further advancement was hindered by the formation and intensification of the Super Cyclonic Storm 'Amphan' over the Bay of Bengal. The SWM arrived over Kerala on its normal date i.e. on 1st June. Further advancement over the country is observed to be almost close to the normal date (with deviation of ±3-4 days) for most parts of the central India. Advancement of the SWM over northwest India has taken place about 5-10 days earlier than the normal date. Monsoon covered entire country on 26th June against the normal date of 08th July. Thus, monsoon set in over the entire country 12 days before its normal date. **Fig. 1** shows the isochrones of advance of monsoon 2020.

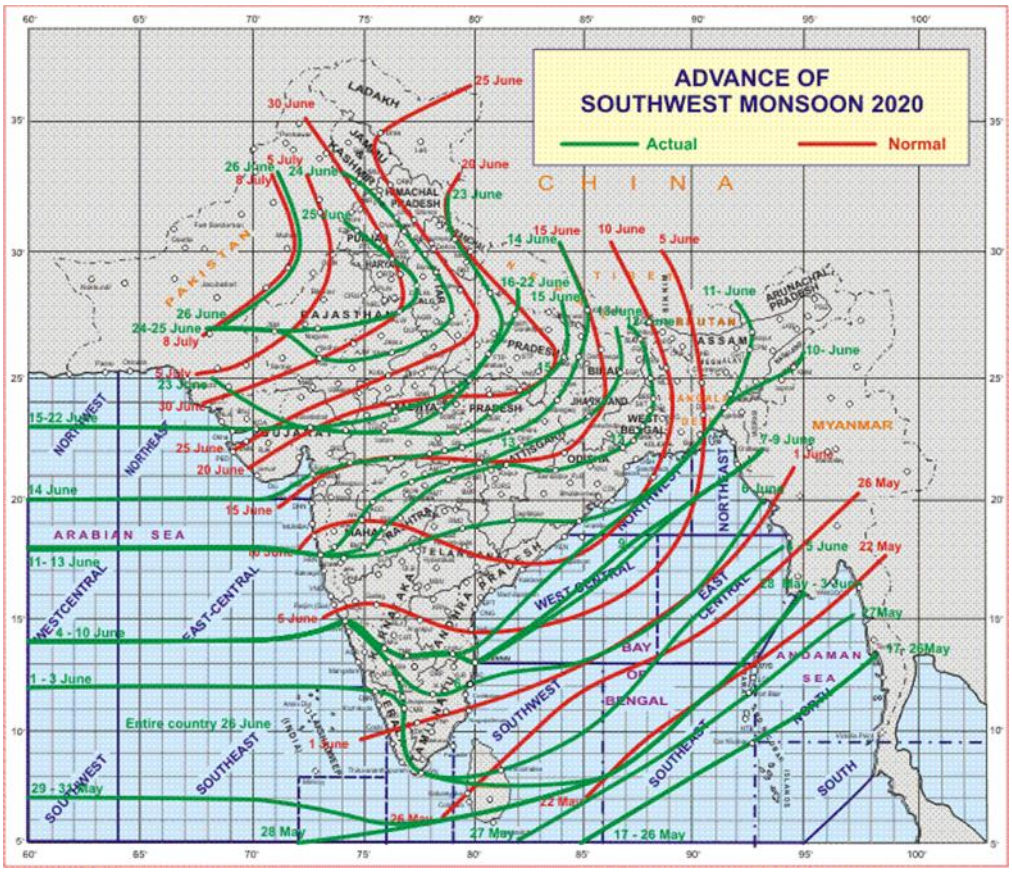


Fig. 1: Progress of Southwest Monsoon – 2020

2.5 CHIEF SYNOPTIC FEATURES

During the monsoon season 2020, a total number of 12 Low Pressure System formed. The first Low Pressure System formed over Arabian Sea on 31st May had intensified into Severe Cyclonic Storm 'NISARGA' on 2nd June. However, none of the other low pressure systems intensified into Monsoon Depression/Deep Depression categories during the monsoon season.

Month/System	SCS	Low Pressure Areas	Well-marked low-pressure areas
June	**1**	**01**	**0**
July	**0**	**01**	**01**
August	**0**	**01**	**04**
September	**0**	**02**	**01**

The first Low Pressure System of the season; the Severe Cyclonic Storm 'NISARGA' originated from a low pressure area which formed over Southeast and adjoining East Central Arabian Sea and Lakshadweep area in the early morning of 31st May 2020. It concentrated into a Depression over East central and adjoining Southeast Arabian Sea in the early morning of 1st June 2020. It intensified further into a Deep Depression over East central Arabian Sea in the early morning and

into a Cyclonic Storm 'NISARGA' in the noon of 2nd June. It moved northwards till evening of 2nd June and gradually recurved northeastwards and intensified into a Severe Cyclonic Storm in the early morning of 3rd June. Continuing to move northeastwards, it crossed Maharashtra coast close to south of Alibaug as a Severe Cyclonic Storm during the afternoon of 3rd June. Continuing to move northeastwards after landfall, it weakened into a Cyclonic Storm in the evening over north Madhya Maharashtra and into a Deep Depression in the midnight of 3rd June over the same region. It further weakened into a Depression over western parts of Vidarbha and neighbourhood in the early morning and into a Well-Marked Low pressure over central parts of Madhya Pradesh in the evening of 4th June. It weakened further into a Low pressure area over southeast Uttar Pradesh and adjoining Bihar in the afternoon of 5th June. Track of Severe Cyclonic Storm 'NISARGA' formed during SW Monsoon season is given in **Fig. 2**.

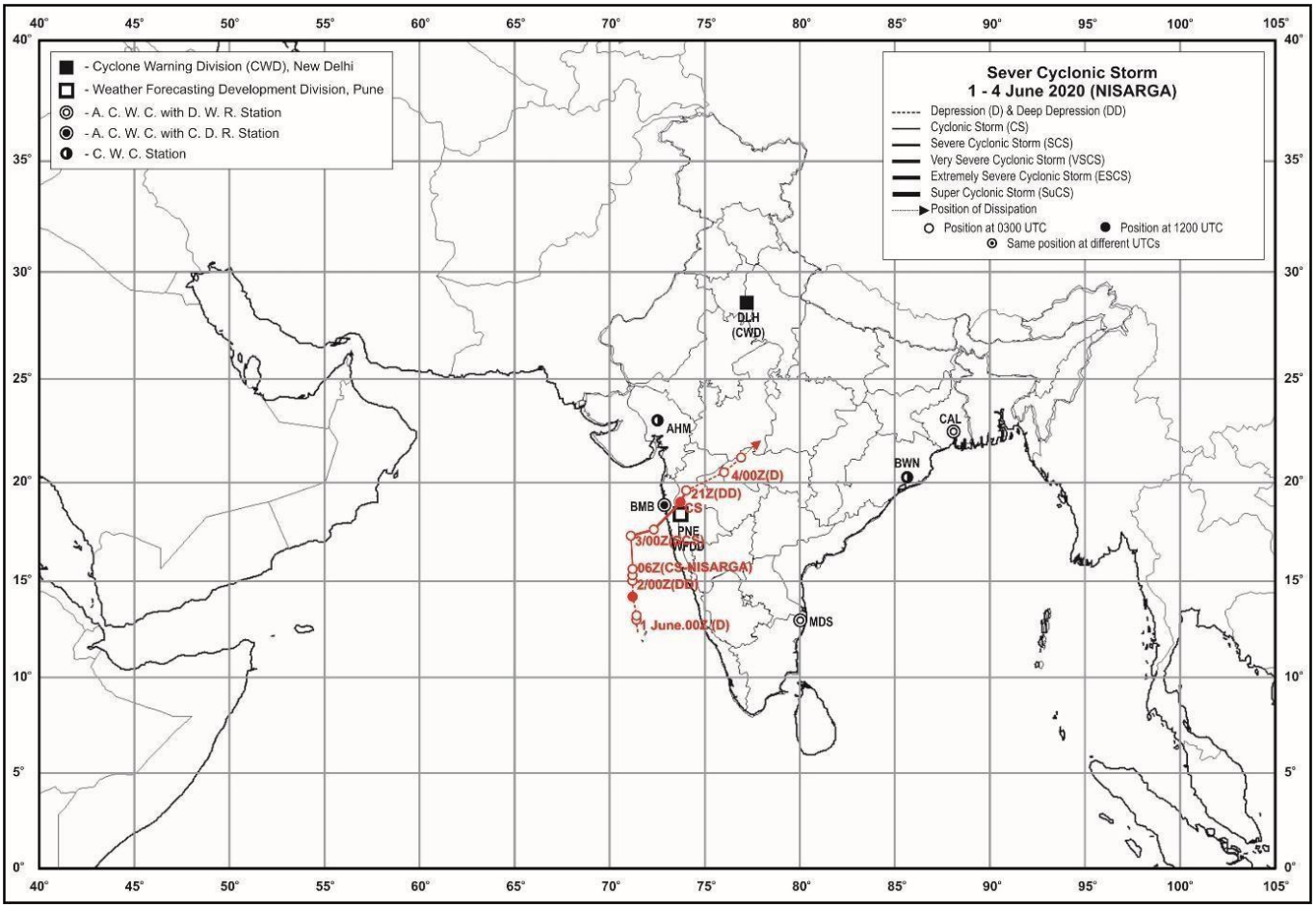


Fig. 2: Track of the Severe Cyclonic Storm 'NISARGA' formed during Monsoon Season

During the month of June, apart from the above system, a low pressure area which formed over West central Bay of Bengal (9-12 June) and its associated cyclonic circulation have strengthened the monsoon flow. Cyclonic vortices at upper levels off both the coasts, over central & north India, east-west shear zone across Peninsular India, an east-west trough at mean sea level extending upto lower tropospheric levels with cyclonic circulations embedded in it were also observed. All these systems caused fairly widespread to widespread rainfall activity over most parts of the country and thus supported the advance of monsoon over the country.

Towards the end of the month, the monsoon trough shifted northwards with its eastern part close to the foot hills of Himalayas (during 27 June-2 July).

During the month of July, many unfavorable features of monsoon appeared resulting in deficient rainfall for the country. The weak monsoon in July was mainly due to absence of any major monsoon disturbance over Bay of Bengal and due to the prevalence of a weak cross equatorial flow in general. Absence of any major systems caused the monsoon trough also weak. The monsoon trough lay to the north of the normal position or close to the foothills of the Himalayas on many days during the month. It resulted in frequent and prolonged floods over northeastern India, Bihar and adjoining areas of East Uttar Pradesh. At the same time, major parts of central and northwest India received deficient rainfall.

However, in the first week of July, with the formation of two low pressure areas; one over coastal Saurashtra and neighbourhood (5-12 July) and the other over Northwest Bay of Bengal off Odisha-Gangetic West Bengal coast (5-6 July) and their associated cyclonic circulations tilting southwards with height, monsoon trough was observed in its normal/south of its normal position during 3-8 July. The low pressure area which formed over coastal Saurashtra and neighbourhood, became well marked on 6^{th} over Kutch and neighbourhood. In addition to this low pressure area, an off- shore trough, a shear zone along 16° N and the monsoon trough to the south of its normal position resulted in widespread rainfall activity over Gujarat State and over coastal & interior parts of Maharashtra and the other low pressure area over Bay of Bengal caused widespread rainfall activity over eastern parts of India.

During the subsequent three weeks of July, an off-shore trough along south Maharashtra and Kerala coasts, cyclonic vortices over north Konkan coast and east-west shear zone across peninsular India caused widespread/fairly widespread rainfall with heavy to very heavy rainfall activity along the west coast and adjoining interior parts of peninsular India. In the same period, the interactions of the eastern end of monsoon trough (which lay north/close to foot hills of Himalayas) with the cyclonic circulations and convergence of strong south-westerly to southerly winds from Bay of Bengal over east and northeast India triggered monsoon activity over northeast and adjoining east India. The interaction of western end of monsoon trough with the systems in westerlies, circulations in the lower tropospheric levels and moisture incursions from the Arabian Sea caused widespread/fairly widespread rainfall with heavy rainfall over Western Himalayan Region, plains of northwest India & adjoining central & west India during third and fourth week of the month.

A coherent Madden Julian Oscillation (MJO) signal was not evident during June and on most days of July. Only towards the end of July upto mid of August, the signal became active and slight eastward propagation from Indian Ocean to the maritime continent was seen.

In association with absence of low pressure systems over the Bay of Bengal, shifting of monsoon trough to the foothills on many days and unfavourable conditions like MJO, the monsoon rainfall was deficient in July across central India. At the same time it caused flood over northeastern States, Bihar and East Uttar Pradesh on a few occasions.

As the MJO moved eastwards over the Indian seas, the Arabian Sea and Bay of Bengal became convectively active in August. The formation of five low pressure systems over the North Bay of Bengal in succession out of which four of them became well marked (4-10 , 9-11, 13-18, 19-26 and 24-31 August) and their west-northwestward movement across central India upto Gujarat and south Rajasthan, active MJO, active Monsoon trough mostly south of its normal position and stronger winds reaching up to 50-60 kmph in lower levels over Arabian Sea during a few days in the month led to active monsoon conditions over most parts of the country and caused significantly higher than normal rainfall over central and western parts of India during the month of August.

During the month, strengthening of the monsoon flow in the Arabian Sea, led to convergence of strong low level westerlies along the west coast. Also, the presence of cyclonic vortices, off-shore trough, east-west shear zone over peninsular India caused widespread rainfall/thundershowers along the west coast, over parts of Peninsular India, Gujarat state, Konkan & Goa and Madhya Maharashtra. System in westerlies and convergence of moist low level winds from Arabian Sea, cyclonic circulations over northwest India and presence of strong easterlies due to the presence of low pressure systems caused scattered to fairly widespread rainfall/thunderstorms over Western Himalayan Region and adjoining parts of northwest India during the month.

Due to active monsoon conditions, riverine floods occurred over Odisha, Telangana, Madhya Pradesh, Maharashtra, Gujarat and Rajasthan. The active monsoon conditions consecutively for 4 weeks led to excess rainfall activity over the country.

Fairly widespread to widespread rainfall/thunderstorms over parts of Northeast and adjoining parts of East India with heavy to very heavy rainfall was also observed during the first, second and the last week of August due to the convergence of moist south-westerlies to southerlies from the Bay of Bengal and presence of cyclonic vortices in the lower levels.

A weak MJO re-entered eastern Indian Ocean in late August and propagated eastwards into maritime continent with weak amplitude by the end of monsoon season.

From the last week of August till the formation of a low pressure area off north Andhra coast on 13 September, either the western or the eastern end of monsoon trough remained north of its normal position or close to foot hills of Himalayas. Heat Low also started weakening. The low pressure area which formed on 13th September subsequently became Well Marked Low and dissipated over Telangana and adjoining south Chhattisgarh. It triggered monsoon activity over Central and Peninsular India. After the dissipation of the low pressure area on 16th, the monsoon trough lay north of its normal position and regained it near-normal position with the formation of another low pressure system on 20th over Northeast Bay of Bengal and neighbourhood. This low pressure system dissipated over east Bihar and neighbourhood on 26th. East Uttar Pradesh, Bihar and Sub Himalayan West Bengal experienced widespread rainfall/thunderstorms due to this system. The monsoon trough became disorganized on 28th September. Apart from the above two low pressure systems in the month, another low-pressure system (6-8 September) formed over Southeast and adjoining East central Arabian Sea and in

conjunction with an east-west shear zone over south peninsula caused widespread rainfall activity over south Peninsular India, Lakshadweep area and coastal and interior parts of Maharashtra during the first week of the month. Circulation features favoring convergence of strong moist winds from the Bay of Bengal in the lower tropospheric levels and the alignment of monsoon trough over northeast India and adjoining east India continued to trigger the monsoon activity over the region during the month.

2.6 WITHDRAWAL OF SOUTHWEST MONSOON

The formation of two low pressure areas in the month of September led to an active monsoon trough which delayed the withdrawal of monsoon. The withdrawal of monsoon commenced on 28th September from some parts of west Rajasthan and Punjab, against its normal date of 17th September with the establishment of an anti- cyclonic circulation in the lower tropospheric levels over western parts of northwest India and substantial reduction in moisture content & rainfall. A further change in the low level wind pattern into north westerlies, reduction in moisture content and cessation of rainfall over northwest India, led to the withdrawal of southwest monsoon from some more parts of Rajasthan, remaining parts of Punjab, entire Western Himalayan region & Haryana, Chandigarh & Delhi and some parts of Uttar Pradesh on 30th September. It then withdrew from most parts of Rajasthan, some more parts of Uttar Pradesh and some parts of northwest Madhya Pradesh on 3rd October 2020 and from remaining parts of Rajasthan, some more parts of Uttar Pradesh and Madhya Pradesh, most parts of Gujarat state and some parts of North Arabian Sea on 6th October 2020. The Southwest Monsoon withdrew from the entire country on 28th October 2020. **Fig. 3** shows the isochrones of withdrawal of monsoon 2020.

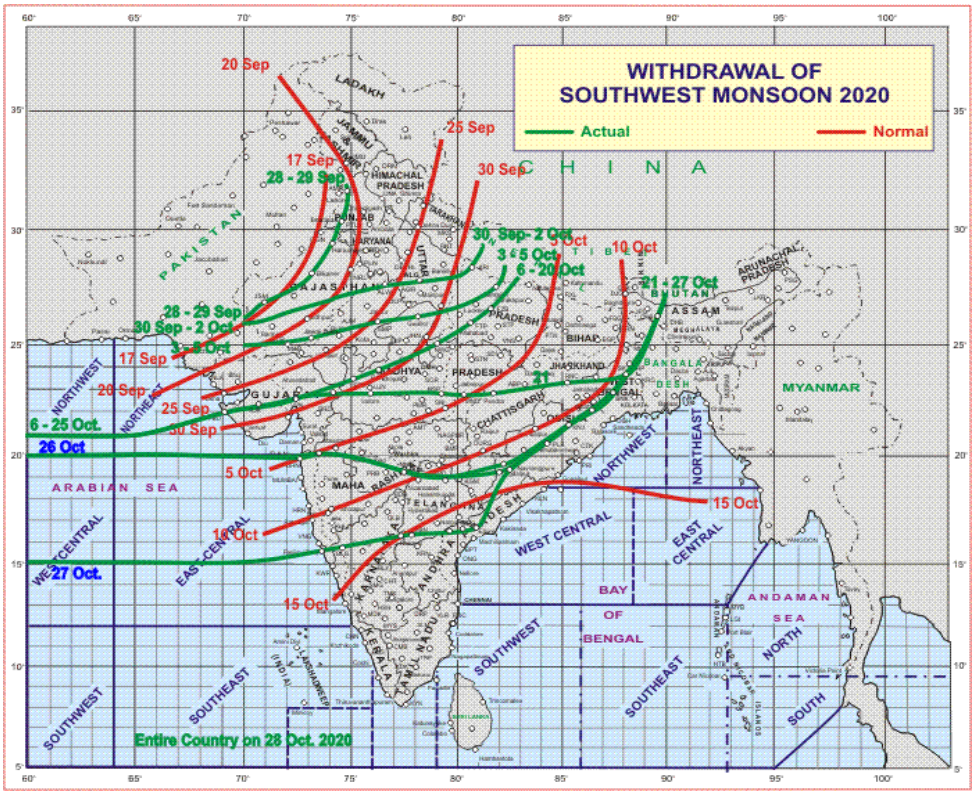


Fig. 3: Isochrones of withdrawal of southwest monsoon - 2020

2.7 HIGH IMPACT WEATHER EVENTS

Fig. 4 depicts the meteorological Sub-divisions or parts thereof, which experienced high impact weather events like floods, landslides and Heat waves during the Southwest Monsoon season (June - September) along with the dates. It also indicates areas that experienced isolated extremely heavy rainfall (Rainfall amount ≥25 cm reported during the 24 hours ending at 0830 hrs IST) events during the season without any reference to the dates of these occurrences.

Incessant rainfall associated with the formation and movement of the monsoon low pressure systems in the presence of strong cross equatorial flow often caused flood situations over various areas during different parts of the season.

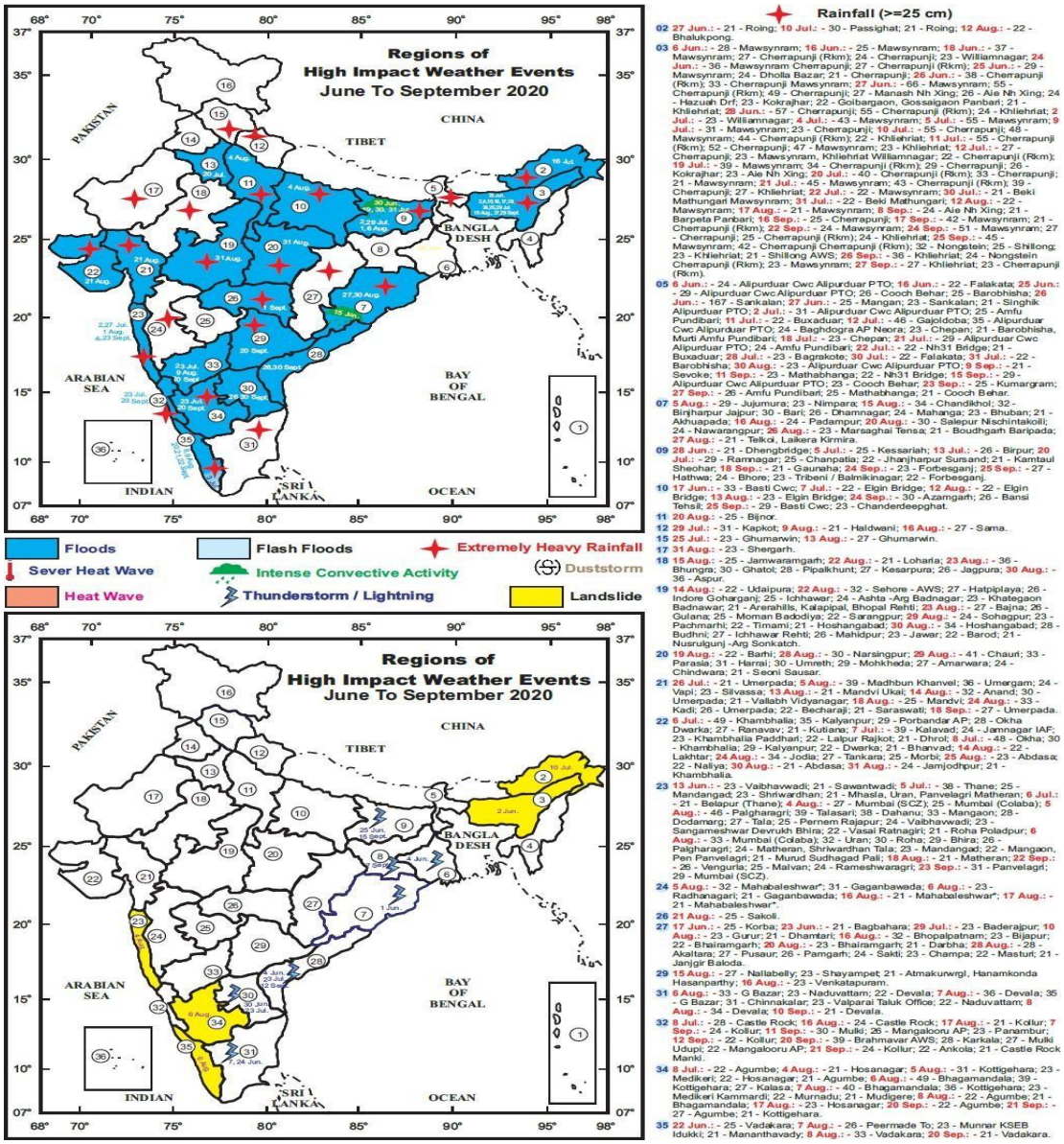


Fig. 4: Areas and dates of high impact weather events during the 2020 SW Monsoon

2.8 RAINFALL DISTRIBUTION

The realized 2020 southwest monsoon season (June to September) rainfall over the country as a whole and four broad geographical regions are given in the table below along with respective long period average (LPA) values. The rainfall during the 4 monsoon months and the second half of the monsoon season (August & September) over the country as a whole are also given.

Season (June to September) rainfall			
Region	**Long Period Average (LPA) (mm)**	**Actual Rainfall for 2020**	
		Rainfall (mm)	**Rainfall (% of LPA)**
All India	880.6	961.4	109
Northwest India	599.5	516.5	86
Central India	976.6	1122.4	115
East & Northeast India	1410.4	1509.0	107
South Peninsula	726.2	937.4	129
Monthly & second half of monsoon season rainfall (All India)			
Month	**LPA (mm)**	**Actual Rainfall for 2020**	
		Rainfall (mm)	**Rainfall (% of LPA)**
June	166.9	195.6	117
July	285.3	257.1	90
August	258.2	327.8	127
September	170.2	178.0	105
August +September	428.4	505.8	118

As seen in the table above, the 2020 season rainfall over the country as a whole (109% of LPA) was more than the long period average (LPA). The 2020 seasonal rainfalls over three of the four geographical regions of the country (except Northwest India) were also more than the respective LPAs. The highest rainfall (129% of LPA) was received by South Peninsula and lowest rainfall (86% of LPA) was received by Northwest India. Central India and East & Northeast India received season rainfalls of 115% of LPA and 107% of LPA respectively. The monthly rainfall over the country as a whole were more than LPA during three months of the season (117% of LPA in June, 127% of LPA in August and 105% in September) and were less than LPA during the months of the July (90% of LPA in July).

Country as a whole received rainfall of 109% of LPA during the first half (117% of LPA in June and 90% of LPA in July), which was less than that during the second half (118% of LPA) with 127% of LPA in August and 105% of LPA in September. Thus among the four months, rainfall deficiency was highest during July and rainfall was excess in August.

2.9 INDIAN NORTHEAST MONSOON

The Indian southwest monsoon (SWM) season of June to September is the chief rainy season for India and about 75% of the country's annual rainfall is realised during this season.

Subsequent to the withdrawal of SWM, the northeast monsoon (NEM), a small scale monsoon confined to parts of southern peninsular India comprising of the meteorological sub-divisions of Tamil Nadu, Puducherry & Karaikal (TN), Kerala & Mahe (KER), Coastal Andhra Pradesh & Yanam (CAP), Telangana, Rayalaseema (RYS) and South Interior Karnataka (SIK) occurs. For the subdivision of TN, the normal SWM seasonal rainfall realised is only about 36% (336.1 mm) of its annual rainfall (939.3 mm) as this subdivision comes under the rain-shadow region during the SWM. The northeast monsoon (NEM) season of October to December (OND) is the chief rainy season for this sub-division with approx 48% (449.7 mm) of its annual rainfall realised during this season and hence its performance is a key factor for this regional agricultural activities.

Further, the NEM season is also the primary cyclone season for the North Indian Ocean (NIO) basin comprising of the Bay of Bengal (BOB) and the Arabian Sea (AS). Cyclonic disturbances (CDs; low pressure systems (LPS) with maximum sustained surface wind speed (MSW) of 17 knots or more forming over BOB and moving west/northwest wards affect the coastal areas of southeastern peninsular India and also contributes significantly to NEM rainfall. As such, the NEM season assumes importance from the agricultural and Water Management as well as disaster management perspectives.

Prior to the commencement of NEM rains, after the withdrawal of SWM up to 15°N, reversal of low level winds from southwesterly to northeasterly occurs. The normal date of setting in of easterlies over the southeastern peninsular India is 14th October. The normal rainfall received over the five NEM sub-divisions during OND is TN- 449.7 mm, KER- 491.6 mm, CAP- 338.1 mm, RYS- 223.3 mm, Telangana- 123.3 mm and SIK- 204.1 mm. However, the NEM seasonal rainfall shows a high degree of variability with 27% co-efficient of variation.

The NEM rainfall is influenced by global climate parameters such as ENSO (El Nino/La Nina & Southern Oscillation Index), Indian Ocean Dipole (IOD) and Madden-Julian Oscillation (MJO). El Nino, positive IOD and MJO in phase 2-4 with amplitude greater than one are generally associated with good NEM rainfall.

2.10 ONSET PHASE

During October 2020, La Nina and positive SOI conditions prevailed over the equatorial Pacific region; IOD was neutral and MJO was generally in phase 5-8. As such La Nina & positive SOI, and MJO in the western hemisphere were not favourable for good NEM activity. Further, two low pressure systems over the BOB- (i) a Deep Depression (DD) during 11th -14th October 2020 that crossed north Andhra Pradesh coast near Kakinada and (ii) a Depression (D) during 22nd - 24th October 2020 that crossed West Bengal–Bangladesh coasts extended the southwest monsoon activity upto the last week of October 2020.

2.11 SYNOPTIC SCALE WEATHER SYSTEMS DURING THE NEM-2020 SEASON

Cyclones and Depressions over the Bay-of Bengal during October-December 2020, six major low pressure systems (LPS) formed over the NIO – four over the BOB and two over the

AS. Of these the four LPS that formed over the BOB influenced the NEM activity. Brief life history of these four LPS (based on the preliminary reports on these LPS of RSMC, IMD New Delhi) - (i) Deep Depression over the BOB during 11th – 14th October 2020 (ii) Depression over the BOB during 22nd – 24th October 2020 (iii) Very Severe Cyclonic Storm (VSCS) NIVAR over BOB during 22nd – 26th November 2020 and (iv) Cyclonic Storm (CS) BUREVI over the BOB during 30th November – 05th December 2020.

2.12 OTHER SYNOPTIC SCALE WEATHER SYSTEMS

Aside from the cyclones and depressions that affected the performance of NEM 2020, other major synoptic scale weather systems that influenced the NEM 2020 were the transient easterly wave troughs across the peninsular India. During the period October-December 2020, frequent easterly wave troughs that moved across peninsular India from east to west contributed significantly to the NEM rainfall during the season. Analysis of Hovmoller plots of 6-hrly meridional wind along 10°N latitude at 700 hPa for the period 1st October–31st December 2020 indicated four easterly wave troughs that moved across the peninsular India– (i) 8th - 12th November 2020, (ii) 12th - 16th November 2020, (iii) 12th - 16th December 2020 and (iv) 26th - 30th December 2020.

2.13 SUMMARY

The onset of NEM 2020 over the southeastern parts of peninsular India took place on 28th October [delay of 8 days from the normal date of onset (20th October)]. Despite a late onset, except Kerala, all other subdivisions benefited by the NEM (TN, CAP, RYS & SIK) received normal to excess rainfall during the season (Oct-Dec 2020). Under the influence of extended SWM, CAP, RYS & SIK received normal rainfall in October, but, TN & KER ended up deficient during the month. In November, except KER, which came under deficient category, all other subdivisions received normal/above normal rainfall with RYS recording +122% excess. In December all the five subdivisions received normal/above normal rainfall with RYS and TN recording +99% and +87% excess rainfall. Two cyclones– VSCS Nivar and CS Burevi as well as passage of easterly wave trough across peninsular India contributed significantly towards NEM activity during November and December. The NEM season extended into first half of January 2021 also and cessation of NEM rains over the peninsular India took place on 19th January 2021.

CHAPTER – 3

SIGNIFICANT FLOOD EVENTS

3.1 GENERAL

The Flood Forecasting Activity was expanded to 328 locations as explained in previous Chapter. All the 328 flood forecasting sites including 130 inflow forecasting sites are operational i.e. where desired hydro-meteorological data is observed/collected, during the flood season 2020. Extreme floods, exceeding previous highest flood levels (HFL), were observed in seven sites namely Sivasagar in Sivasagar district of Assam, Dumariaghat in Gopalganj district, Rewaghat in Muzzafarpur district and Rosera in Samastipur district of Bihar, Mathani Road Bridge in Balasore district of Odisha, Chinturu in East Godavari district of Andhra Pradesh and Deongaon Bridge in Gulbarga district of Karnataka during the year 2020.

3.2 AN OVERVIEW OF FLOOD EVENTS

3.2.1 EXTREME FLOOD SITUATION

Extreme flood situation were witnessed in 7 Flood Forecasting Stations in the State of Assam, Bihar Odisha, Andhra Pradesh and Karnataka.

41 Flood Monitoring Stations flowed in Extreme Flood Situation in Assam, Bihar, Chattisgarh, Odisha, Karnataka, Telangana, Tamilnadu, Andhra Pradesh, Maharashtra, Madhya Pradesh, Uttarakhand and Uttar Pradesh state.

Month wise number of flood forecast and monitoring stations witnessed Extreme Flood is shown in **Fig. 3.1**.

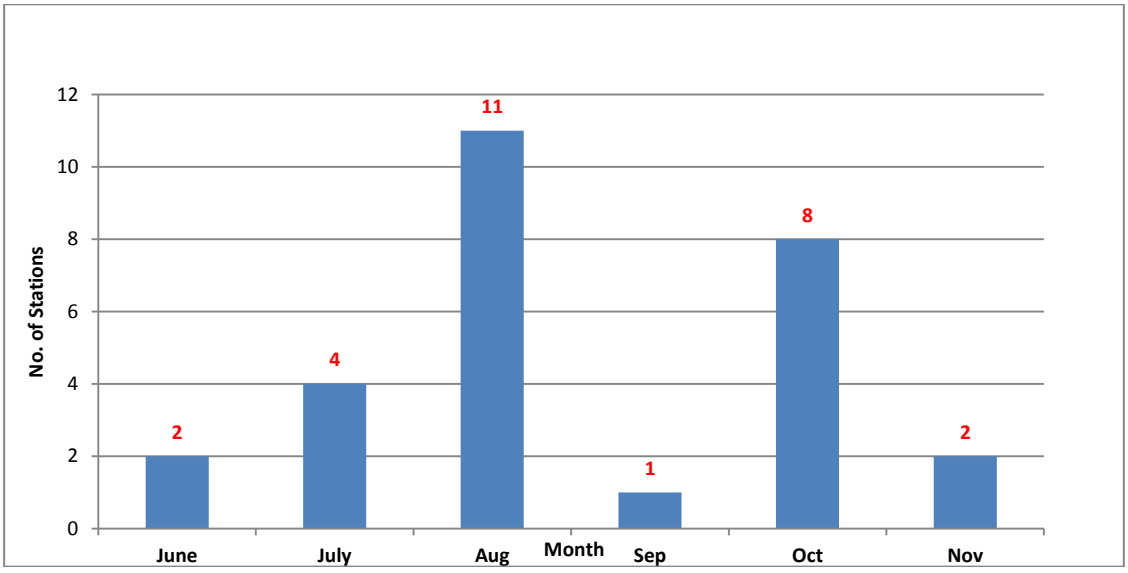


Fig. 3.1: Month wise number of flood forecasting/monitoring stations witnessed extreme floods during 2020

3.2.2 SEVERE AND ABOVE NORMAL FLOOD EVENTS AND INFLOW FORECASTS

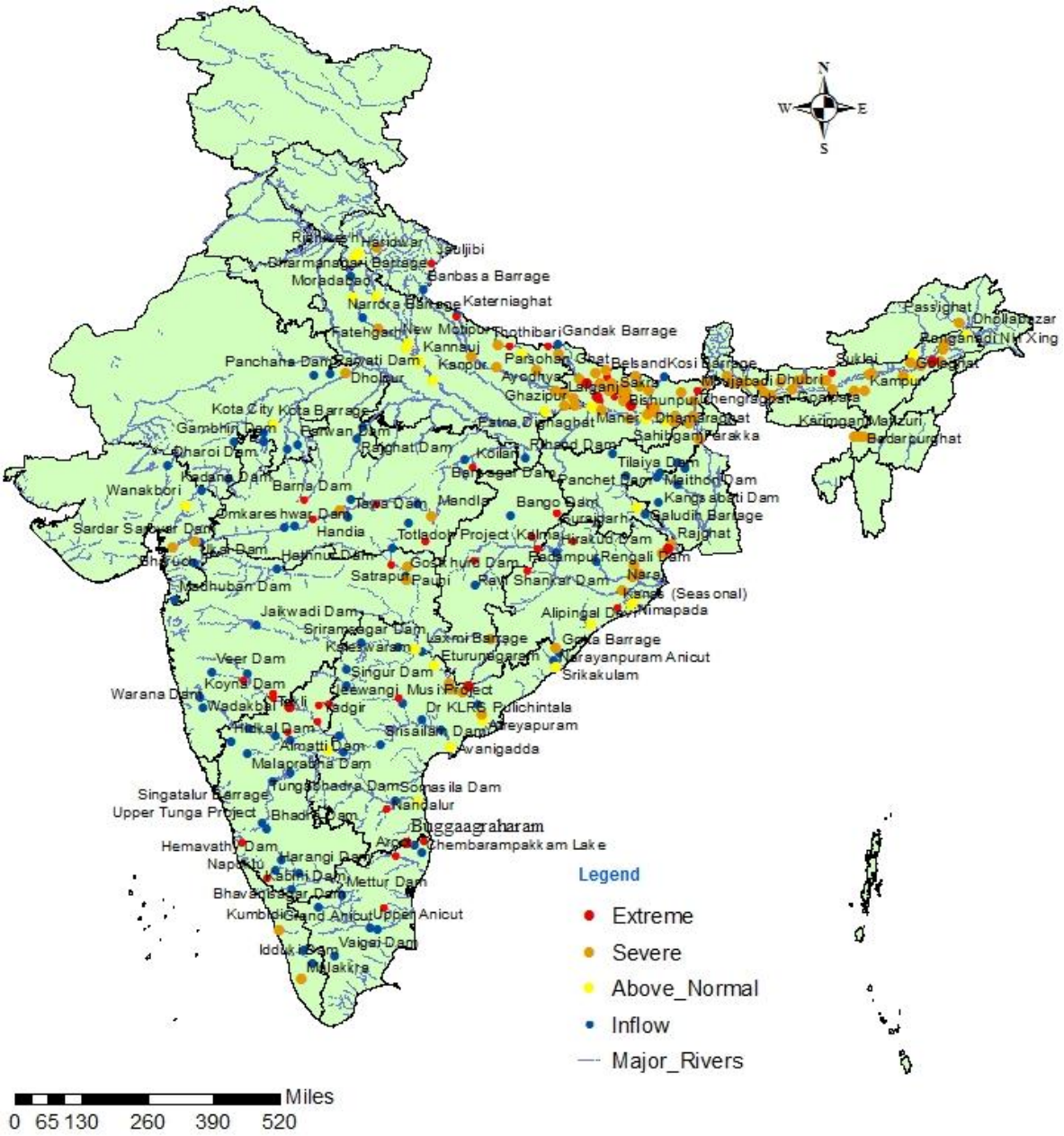
Severe flood events were witnessed in 88 stations and above normal floods were witnessed at 34 stations and inflow forecasts were issued in 88 Stations.

3.2.3 NO FORECASTS

No flood forecasts were issued at 111 flood forecast stations (69 level and 42 inflow) as they did not cross warning level or flows were not above threshold in case of inflow forecasts. Statement showing number of stations where level/inflow forecast were issued is as follows:

State	Level				Inflow	
	Warning Level exceeded	Danger Level exceeded	Highest Flood exceeded	Below Warning Level	Dams/ Barrages exceeded threshold limit	Dams/ Barrages not exceeded threshold limit
Andhra Pradesh	6	2	1	1	8	2
Arunachal Pradesh	0	1	0	2	0	0
Assam	3	23	1	3	0	0
Bihar	4	28	3	5	2	1
Chhattisgarh	0	1	0	0	2	0
Gujarat	1	2	0	3	5	2
Haryana	0	0	0	1	0	1
Himachal Pradesh	0	0	0	1	0	0
Jammu and Kashmir	0	0	0	3	0	0
Jharkhand	0	1	0	1	6	9
Kerala	0	2	0	1	2	0
Karnataka	0	0	1	0	13	1
Madhya Pradesh	0	2	0	0	10	0
Maharashtra	0	2	0	6	7	6
Odisha	4	7	1	0	2	5
Rajasthan	1	1	0	1	8	3
Sikkim	0	0	0	3	0	5
Tamilnadu	0	0	0	4	7	4
Telangana	2	2	0	1	7	1
Tripura	0	0	0	2	0	0
Uttar Pradesh	9	8	0	22	5	0
Uttarakhand	2	1	0	1	1	1
West Bengal	2	5	0	5	3	1
Daman & Diu	0	0	0	1	0	0
Delhi	0	0	0	2	0	0
Total	**34**	**88**	**7**	**69**	**88**	**42**

Map 2 below shows the flood situation in the country during the year 2020.



Map 2: Flood situation in India during 2020

3.3 EXTREME FLOOD SITUATION (2018-2020)

It is observed that during the last 3 years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Tamilnadu in addition to existing flood prone states like Assam, Bihar, Odisha and Uttar Pradesh. **Fig 3.2** shows graph showing state wise extreme flood situation during the year 2018 to 2020. From the graph it is seen that Karnataka witnessed extreme flood situation in 23 stations while Kerala in 20 stations, Maharashtra in 10 stations and Tamilnadu in 10 stations.

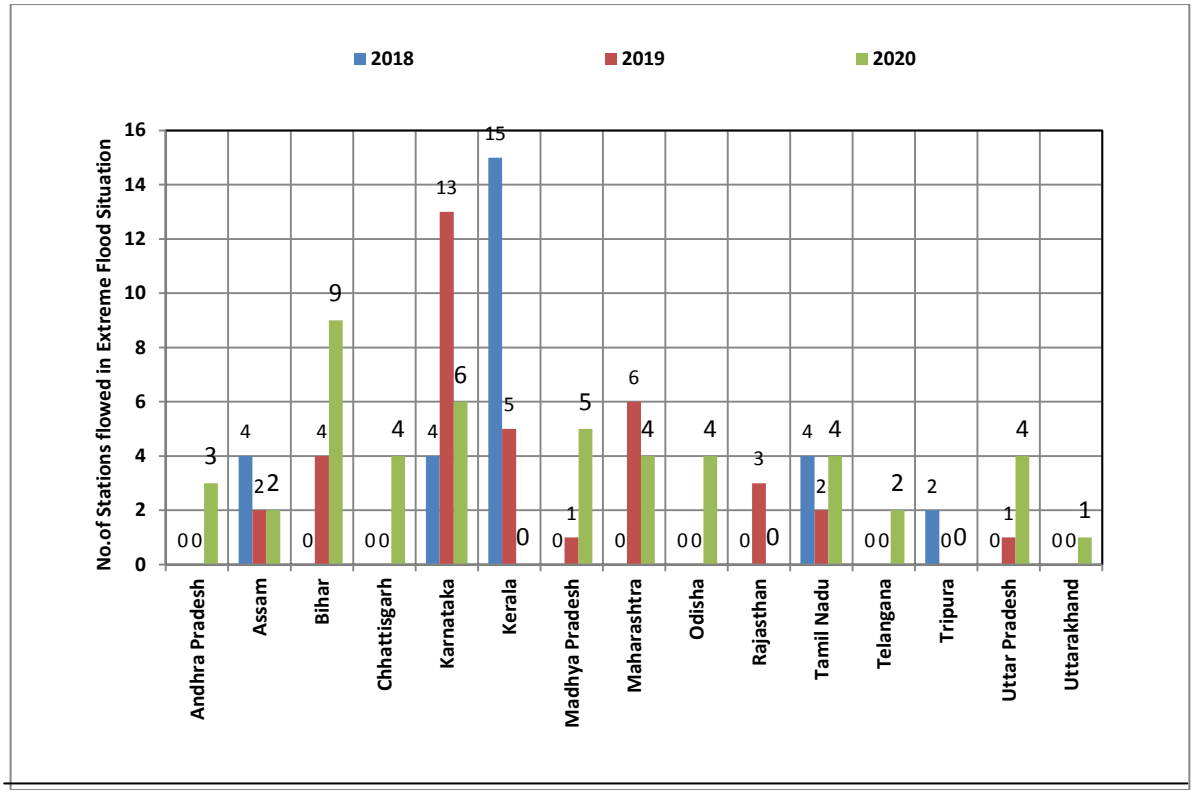


Fig. 3.2: State wise extreme flood situation during the years 2018 to 2020

CHAPTER - 4

FLOOD FORECAST PERFORMANCE

4.1 FLOOD FORECASTING EVALUATION - CRITERIA & PROCEDURE

A number of techniques are being utilised for formulation of river stage and inflow forecasts by Central Water Commission. While inflow forecast is being provided for assisting project authorities in reservoir regulation, the stage forecast is done for warning the civil and engineering authorities about the predicted water level well ahead of its occurrence. An accurate forecast is one where the forecast level and corresponding actual observed level exactly synchronize or have such a small difference that it can be taken as reasonably accurate. In an ideal situation, not only the forecast and the corresponding observed value of river stage/inflow should be the same but also the time of such occurrence should be the same as that predicted.

4.2 EVALUATION CRITERIA FOR STAGE/INFLOW FORECASTING

As per present practice, all the level and inflow forecasts are being judged by the single criteria of accuracy i.e. the actual level attained is within ±15cm of forecasted value for stage forecasts and the actual inflow/volume received in the dam/barrage is within ±20% of the forecasted value for inflow forecast.

The forecast of incoming flood gives the water level or inflow and 'time' of occurrences. It is also observed that in many cases the levels attained were found within permissible limit of accuracy but the time of occurrence was not the same.

4.3 FLOOD FORECASTING ACTIVITIES

The flood forecasting activities like data collection, forecast formulation and its dissemination during 2020 covered various river basins and States. A total of 11721 forecast were issued during 2020. The performance of flood forecasting Division wise, Major Basin wise, State wise and for the period 2000 to 2020 are given from **Annex - IV to VII.**

4.4 RIVER WISE DETAILS OF FLOOD FORECASTING ACTIVITES & ACCURACY OF FORECAST

4.4.1 INDUS BASIN

During the flood season 2020, no forecast was issued for Jhelum basin.

4.4.2 BRAHMAPUTRA BASIN

During the flood season 2020, analysis of the flood forecasts issued reveals that 3289 forecasts (28.06% of 11721 forecast) were issued for 30 sites (30 level Forecast Sites) located on the main Brahmaputra and tributaries. Out of these, 3249 forecasts (98.78%) were found within permissible limit of accuracy.

4.4.3 BARAK AND OTHER BASIN

During the flood season 2020, 200 forecasts (1.70% of 11721) were issued for 4 (4 level) Sites. All forecasts were found within permissible limit of accuracy.

4.4.4 GANGA BASIN

One new Level Forecasting site Dholpur was added during 2020 flood season. During the flood season 2020, 4897 forecasts (41.78 % of 11721) were issued for 85 sites (59 level and 26 inflow), out of total 134 sites (95 level and 39 inflow Forecast) located on the main Ganga and its tributaries. No forecast was issued for the remaining 49 sites. Out of these, 4757 forecasts (97.14%) were found within permissible limit of accuracy.

4.4.5 GODAVARI BASIN

Two new Inflow Forecasting sites namely Indirasagar (Polavaram) and Laxmi Barrage were added during 2020 flood season. During the flood season 2020, 352 forecasts (3% of 11721) were issued for 24 (12 level and 12 inflow) of the 42 sites (18 level and 24 inflow) on Godavari Basin and 303 (86.08%) forecasts were found within permissible limit of accuracy. No forecasts were issued for remaining 18 sites.

4.4.6 KRISHNA BASIN

During the flood season 2020, 1407 forecasts (12.00% of 11721) were issued for 20 forecasting sites out of 22 sites. Out of 1407 forecasts issued, 1295 forecasts were found to be within limit with an accuracy of 92.04%. No forecasts were issued for the remaining 2 sites.

4.4.7 CAUVERY BASIN

During the flood season 2020, 651 forecasts (5.55 % of 11721) were issued for 8 inflow forecasting sites and 562 forecasts (86.33%) were found within permissible limit of accuracy. No level forecast was issued during 2020.

4.4.8 SUBARNAREKHA BASIN INCLUDING BURHABALANG

During the flood season 2020, 150 forecasts (1.28% of 11721) were issued for 4 forecasting sites (3 level and 1 inflow). Out of 150 forecast, 121 forecasts were found to be within permissible limit of accuracy (80.67%). No forecasts were issued for remaining 3 sites.

4.4.9 BRAHMANI AND BAITARNI BASIN

During the flood season 2020, 31 forecasts (0.26% of 11721) were issued for 4 (3 level and 1 inflow) forecasting sites. Out of 31 forecast (22 level and 9 inflow) issued, 19

(15 level and 4 inflow) forecasts were found to be within permissible limit with 61.29% of accuracy.

4.4.10 MAHANADI BASIN

During the flood season 2020, 143 forecasts (1.22% of 11721) were issued for all the 6 forecasting sites (3 level and 3 inflow). Out of 143 (30 level forecast and 113 inflow forecast) forecast issued, 139 forecasts was found to be within limit with an accuracy of 97.20%.

4.4.11 EAST FLOWING BETWEEN MAHANADI AND PENNAR BASIN

During the flood season 2020, 42 forecasts (0.36% of 11721) were issued for 6 forecasting site (4 level and 2 inflow). Out of 42 (27 level and 15 inflow) forecast issued, 35 forecasts (23 level and 12 inflow) were found to be within limit with an accuracy of 83.33%.

4.4.12 PENNAR BASIN

During the flood season 2020, 66 forecasts (0.56% of 11721) were issued for both the forecasting sites (1 level and 1 inflow). Out of 66 (2 level and 64 inflow) forecast issued, 50 forecasts were found to be within limit with an accuracy of 75.76%.

4.4.13 EAST FLOWING BETWEEN PENNAR AND KANYAKUMARI BASIN

During the flood season 2020, 22 forecasts (0.18% of 11721) were issued for 3 forecasting sites (3 inflow) out of 6 (6 inflow) sites. Out of 22 inflow forecasts issued, 9 forecasts were found to be within limit with an accuracy of 40.91%. No forecasts were issued for the remaining site.

4.4.14 MAHI BASIN

During the flood season 2020, 25 (0.21% of 11721) forecast were issued for 3 (1 level and 2 inflow) forecasting site. All forecasts were within permissible limit with 100% accuracy. No forecasts were issued for the remaining sites.

4.4.15 SABARMATI BASIN

During the flood season 2020, 6 inflow forecast (0.05% of 11721) were issued with 100% accuracy. No level forecast was issued.

4.4.16 NARMADA BASIN

During the flood season 2020, 274 forecasts (2.33% of 11721) were issued for 4 level forecast site and 6 inflow forecast stations. Out of 274 forecast issued, 272 forecasts were found to be within limit with an accuracy of 99.27%.

4.4.17 TAPI BASIN

During the flood season 2020, 129 forecasts (1.10% of 11721) were issued for 2 forecasting site (2 inflow) out of 3 (1 level and 2 inflow) sites. Out of 129 forecast issued, 127 forecasts were found to be within limit with an accuracy of 98.45%. No level forecast was issued during season 2020 in the basin.

4.4.18 WEST FLOWING FROM TAPI TO TADRI BASIN

During the flood season 2020, 3 forecasts (0.02% of 11721) were issued for 1 forecasting site (1 inflow). All the 3 forecast were within permissible limit. No level forecast was issued during season 2020 in the basin.

4.4.19 WEST FLOWING RIVERS OF KUTCH AND SAURASHTRA INCLUDING LUNI

During the flood season 2020, no forecast was issued in this Basin.

4.4.20 WEST FLOWING RIVERS BETWEEN TADRI TO KANYAKUMARI BASIN

During the flood season 2020, 34 forecasts (0.29% of 11721) were issued for 4 forecasting site (2 level and 2 inflow). Out of 34 forecasts (15 level and 19 inflow), 26 (15 level and 11 inflow) forecast were within the limit of accuracy with an accuracy of 76.47%.

The Basin/River wise flood forecasting information in India during flood season 2020 is given in **Annex – II (A & B).**

4.5 STATEWISE FLOOD FORECASTING PERFORMANCE

There are 22 states and three Union Territories of the Daman and Diu, Jammu & Kashmir and National Capital Territory of Delhi so far covered under the Flood Forecast and Warning Network of the Central Water Commission. The State wise flood forecasting information in India during the flood season 2020, is given in **Annex –III (A & B).** Their salient features are as under:

4.5.1 ANDHRA PRADESH

One new Flood Forecasting site Indirasagar (Polavaram) was added in Andhra Pradesh during 2020 flood season**.** Now, there are total 20 (10 level and 10 inflow) forecasting sites. Forecasts were issued for 17 (9 Level and 8 Inflow) forecasting sites. It is revealed that 756 forecasts (97 level and 659 inflow) were issued out of which 689 forecasts (81 level and 608 inflow) were within limits (91.14%). No forecasts were issued for 3 stations.

River Godavari at Chinturu flowed in Extreme Flood Situation from 15th August to 24th August during this monsoon period. Flood Monitoring Station on river Nagri at Buggaagraharam flowed in Extreme Flood Situation on 26th November and river Cheyyeru at Nandalur flowed in Extreme Flood Situation on 27th November during this monsoon period.

Flood water of Sabari River at Kunavaram in East Godavari District on 21st August 2020

4.5.2 ARUNACHAL PRADESH

During 2020 flood season 130 level forecasts were issued for 1 level forecasting site and 129 forecasts are within permissible limit with 99.23% accuracy. No forecast was issued for remaining sites.

4.5.3 ASSAM

In Assam, there are 30 forecasting sites and all of them are level forecasting site. Forecasts were issued for 27 sites. It is seen that during 2020 season, 3094 forecasts were issued out of which 3081 forecasts (99.58%) were found within limit of accuracy.

River Dikhow at Sivasagar flowed in Extreme Flood Situation on 22nd June during this monsoon period. Flood Monitoring Station on river Suklai at Suklai flowed in Extreme flood situation on 25th June and 7th September during flood season 2020.

At Konwerpur Mouja in Sivasagr in Assam on 23rd June 2020

4.5.4 BIHAR

In Bihar, there are 40 level forecasting sites and 3 Inflow forecasting sites. Forecasts were issued for 37 sites during the year 2020. Out of 3223 (3213 level and 10 inflow) forecasts issued during the flood season 2020, 3192 forecasts (99.04%) were found within limit of accuracy. No forecast was issued for 6 (5 level and 1 inflow) sites.

River Gandak at Dumariaghat and Rewaghat flowed in Extreme Flood Situation from 23rd July to 25th July during this monsoon period. River Burhi Gandak at Rosera flowed in Extreme Flood Situation from 31st July to 5th August during this monsoon period. Flood Monitoring Station on river Mahananda at Moujabadi flowed in Extreme flood

situation from 27th to 28th June during flood season 2020. Flood Monitoring Station on river Bagmati at Belsand and river Kosi at Dharmaaraghat flowed in Extreme flood situation on 12th July during flood season 2020. Flood Monitoring Station on river Gandak at Lalganj flowed in Extreme flood situation from 24th to 25th July and on 28th September during flood season 2020. Flood Monitoring Station on river Adhwara at Bishunpur flowed in Extreme flood situation from 25th July to 31st August and from 5th to 6th August during flood season 2020. Flood Monitoring Station on river Burhi Gandak at Sakra flowed in Extreme flood situation from 28thJuly to 3rd August during flood season 2020.

River Burhi Gandak in Muzaffarpur district, Bihar Tuesday, July 21, 2020.

4.5.5 CHHATTISGARH

In Chattisgarh there are 3 (1 level and 2 inflow) forecasting sites. Forecasts were issued for all the sites. Out of 17 (6 level 11 inflow) forecast issued 14 (5 level 9 inflow) number is within permissible limit with 82.35% accuracy.

Flood Monitoring Station on river Mahanadi at Surajgarh, Kalma and Kurubhata flowed in Extreme flood situation from 28th August to 31st August during flood season 2020. Flood Monitoring Station on river Kharun at Patardihi flowed in Extreme flood situation from 28th August to 29th August during flood season 2020.

Flood situation in Jangir-Champa during 29th August 2020

4.5.6 GUJARAT

There are 13 (6 level and 7 inflow) forecasting sites in the state of Gujarat. However, forecasts were issued for only 8 (3 level and 5 inflow) sites. Out of 184 forecasts issued (29 level and 155 inflow), 180 (29 level & 151 inflow) forecasts were found within limits of accuracy (97.83%) during the flood season 2020. No forecasts were issued for 5 (3 level and 2 inflow) sites.

4.5.7 HARYANA

There are 2 (1 level and 1 inflow) forecasting sites in Haryana. No level forecast was issued during 2020. Data from Hathnikund Barrage were collected. However, no inflow forecasts were issued due to very little travel time available from base station.

4.5.8 HIMACHAL PRADESH

There is one level flood forecasting site Paonta Sahib in Himachal Pradesh. No forecast was issued for this site during 2020 flood season.

4.5.9 JAMMU AND KASHMIR

In Jammu and Kashmir, there are 3 level forecasting sites. No forecast was issued during 2020 flood season.

4.5.10 JHARKHAND

In the state of Jharkhand, there are 15 inflow and 2 level flood forecasting sites. Flood forecasts were issued for 7 sites (1 level and 6 inflow). During the flood season 2020, 364 (90 level and 274 inflow) forecasts were issued out of which 339 (90 level and 249 inflow) forecasts (93.13 %) were found within limit of accuracy.

4.5.11 KARNATAKA

There are 15 (1 Level and 14 Inflow) forecasting sites in the state of Karnataka. During the flood season 2020, forecasts were issued for 14 forecast (1 level and 13 inflow) sites. Out of 883 (13 level and 870 inflow) forecasts issued, 793 (10 level and 783 inflow) forecasts (89.81%) were found within limit of accuracy.

River Bhima at Deongaon Bridge flowed in Extreme Flood Situation from 17th to 19th October 2020. Flood monitoring station on river Cauvery at Napoklu flowed in Extreme Flood Situation from 7th to 8th August 2020. Flood monitoring station on river Swarna at Yennehole, flowed in Extreme Flood Situation on 20th September 2020. River Kagna at Malkhed, river Don at Talikot and river Bhima at Yadgirall flood monitoring stations flowed in Extreme Flood Situation from 14th to 16th October 2020.

Kadabur village in Kalaburagi district was completely flooded in Bhima river during 18th October 2020.

4.5.12 KERALA

There are 5 (3 level and 2 inflow) forecasting sites in the state of Kerala. Forecasts were issued for 4 (2 level and 2 inflow) sites during 2020. Out of 34 (15 level and 19 inflow) forecast issued 26 (15 level and 11 inflow) forecasts were within limit with 76.47% accuracy.

4.5.13 MADHYA PRADESH

In the state of Madhya Pradesh, there are two level forecasting sites on the river Narmada and 10 inflow forecast sites. During the flood season 2020, forecasts were issued for all 12 sites. Out of 235 (52 level 183 inflow) forecasts issued, 190 (52 level 138 inflow) forecasts were found within the limit of accuracy (80.85%).

River Wainganga at Keolari and Balaghat, river Shakkar at Gadarwara, river Parwati at Astha and river Narmada at Handia all flood monitoring stations flowed in Extreme Flood Situation from 29th to 30th August 2020.

Flooding in Madhya Pradesh, 30th August 2020

4.5.14 MAHARASHTRA

There are 21 (8 level and 13 inflow) forecasting site in the state of Maharashtra. During the flood season 2020, forecasts were issued for 2 level and 7 inflow forecast sites. Total 153 (25 level 128 inflow) forecasts were issued out of which 136 (25 level and 111 inflow) forecasts were within limit (88.89%). No forecasts were issued for remaining 12 (6 level and 6 inflow) stations.

Flood monitoring station on river Kanhan at Satrapur/K.R. Bridge flowed in Extreme Flood Situation on 29th August 2020. River Nira at Sarati, river Bhīma at Takli and Wadakbal, all flood monitoring stations flowed in Extreme Flood Situation during October 2020.

Flood situation in Bhandara district in Maharashtra during 31st August 2020.

4.5.15 ODISHA

In the state of Odisha, there are 19 (12 level and 7 inflow) forecasting site. During the flood season 2020, 266 (155 level and 111 inflow) forecasts were issued for 14 forecast sites (12 Level and 2 Inflow), out of which 239 (135 level and 104 inflow) (89.85 %) were found within limit of accuracy. No forecasts were issued for remaining 5 flood forecasting sites.

River Jalaka at Mathani Road Bridge flowed in Extreme Flood Situation from 26th to 27th August 2020. River Mahanadi at Mahulpali ,Padampur and Kanas all flood monitoring stations flowed in Extreme Flood Situation from 27th to 29th August 2020.

River Jalaka in Balasore district in Odisha during 17th August 2020

4.5.16 RAJASTHAN

Flood Forecasting activity was expanded to one additional level forecasting station named Dholpur during 2020. In the state of Rajasthan there are 3 level and 11 inflow forecast stations. During Flood Season 2020, 59 (10 level and 49 inflow) forecasts were issued out of which 32 (9 level and 32 inflow) forecast were within permissible limit with 54.24% accuracy.

4.5.17 SIKKIM

There are 8 (3 level and 5 inflow) forecasting site in Sikkim. During the flood season 2020 no Forecast was issued.

4.5.18 TAMILNADU

In the state of Tamilnadu there are 15 (4 level and 11 inflow) forecast stations. During flood season 2020, 445 inflow forecasts were issued out of which 370 were within limit of accuracy (83.15%). No level forecast was issued during 2020.

Flood Monitoring Stations on river Araniar at Puduvayal and river Palar at Arcot flowed in Extreme Flood Situation from 26th to 29th November 2020. Flood Monitoring Stations on river Periyaodai at Venganur flowed in Extreme Flood Situation from 3rd to 5th December 2020. Flood Monitoring Stations on river Kallar at Poyapakkam flowed in Extreme Flood Situation from 9th to 11th December 2020.

Goundanyamahanadhi, tributary of Palarriverwhich runs across Gudiyattam town, in spate on 27th November 2020

4.5.19 TELANGANA

One Inflow forecast site namely Laxmi Barrage was added in the state Telangana during Flood Season 2020 .In the state of Telangana there are 13 forecast stations (5level and 8 inflow) during Flood Season 2020. Forecasts wereissued for 11 (4level and 7inflow) sites. Total 335 Forecasts (44 level and 291 inflow) were issued in the State of Telangana during 2020. Out of which 310 (40 level and 270inflow) forecast were within limit of accuracy (92.54%).

Flood Monitoring Stations on river Musi at Anantharam and river Kagna at Jewagi flowed in Extreme Flood Situation on 14th October 2020.

Flooded streets and submerged houses after heavy rainfall, in Warangal district on 16th August 2020

4.5.20 TRIPURA

There are two level forecasting sites in the state of Tripura namely, Kailashahar on river Manu and Sonamura on river Gumti. No forecast was issued during 2020.

4.5.21 UTTARAKHAND

There were total six forecast sites (4 level and 2 inflow) in the state of Uttarakhand. Forecasts were issued for four stations (3 level and 1 inflow) in 2020. 22 forecasts (15 level and 7 inflow) were issued out of which 21 forecast (14 level and 7 inflow) were within limit of accuracy (95.45%).

Flood Monitoring Station on river Sharda at Jouljubi flowed in Extreme Flood Situation on 19th July 2020.

4.5.22 UTTAR PRADESH

There are 44 (39 level and 5 inflow) flood forecasting sites in the state of Uttar Pradesh. During the flood season 2020, forecasts were issued for 22 stations (17 level and 5 inflow). Out of 911 forecasts (803 level and 108 inflow), 880 forecasts (800 level and 80 inflow) (96.60%) were found within limit of accuracy. No forecasts were issued for 22 sites.

Flood Monitoring Stations flowed in Extreme flood situation on river Chandan at Thoothibari from 28th to 29th June, river Suhali at New Motipur on 9th July, river Burhi Rapti at Parsohanghat on 12th July and river Burhi Yamuna at Panchkuan on 31st July during 2020.

River Rapti at Gorakhpur on 20th July 2020

4.5.23 WEST BENGAL

There were 16 (12 level and 4 inflow) flood forecasting sites in West Bengal. During the flood season 2020, forecasts were issued for 10 sites (7 level and 3 inflow stations). Out of 610 forecasts (452 level and 158 inflow), 577 forecasts (426 level and 151 inflow) (94.59%) were found within limit of accuracy. No forecasts were issued for 6 forecast sites.

4.5.24 DAMAN & DIU

In the Union Territory of Daman & Diu, there is one flood forecasting site at Daman on river Damanganga. No forecast was issued during flood season 2020.

4.5.25 NCT OF DELHI

There are two flood forecasting sites in the National Capital Territory of Delhi (NCT of Delhi), namely, Delhi Railway Bridge on the Yamuna River and Dhansa Regulator at Delhi and Haryana border on the Sahibi river, a tributary of Yamuna River which is commonly known by name of Najafgarh drain within Delhi town. Both the sites are level forecasting sites. During the flood season 2020, no forecast was issued.

The performance of flood forecasting Stations (Division wise) in India during flood season 2020 is given in **Annex - IV.**

The Major Basin/State wise performance of flood forecasting stations in India during flood season 2020 is given in **Annex-V to VI**.

Details of Extreme flood events in the various river systems covered under the Flood Forecasting & Warning Network are given in **Annex – VIII** for the year 2020**.** Moderate and low flood events were observed as listed at **Annex - IX to XI,** for the year 2020.

4.6 AN OVERVIEW OF FLOOD FORECASTING PERFORMANCE

During the flood season 2020, an average number of flood forecasts issued per forecasting site were 35.73. The number of forecasting sites where the performance

accuracy of the issued forecasts was found to be above 95.54% (National average for flood season 2020) was 128 sites (39.02%) which include 100 sites (30.48%) where flood forecasting stations have 100% accurate forecasts.

The flood forecasting performance of the level forecasting as well as inflow forecasting sites from 2000 to 2020 is given in **Annex - VII** and from 2000 to 2020 as **Fig. 4.1.**

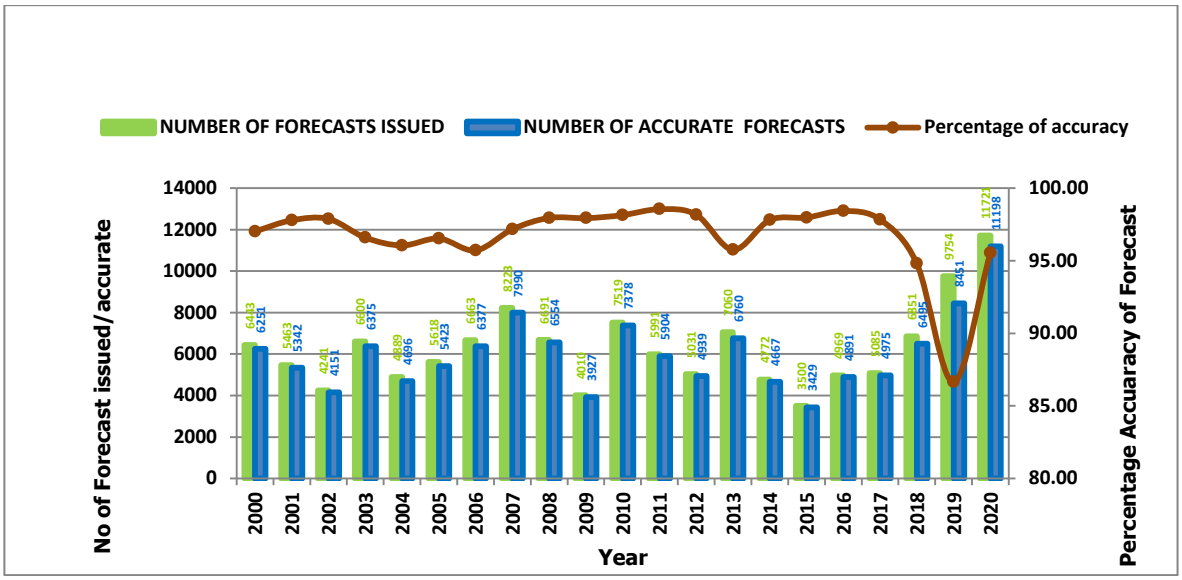


Fig. 4.1: Flood Forecast Performance from 2000 to 2020

4.6.1 OVERALL PERFORMANCE

Thus, in the twenty major river systems in the country where 'Flood Forecasting & Warning Network' of Central Water Commission exists, and floods are being monitored; the overall accuracy/performance was of the order of 95.54% for the country as a whole. Site wise 'Forecast Performance' out of 328 operational sites in flood season 2020 is shown in **Table 4.1**.

Table 4.1: Site wise 'Forecast Performance' of flood forecasting sites of CWC in Flood Season, 2020

Sl. No.	Details	No. of Sites	%
1	Sites with performance accuracy between 0.0% to 25%	17	7.83%
2	Sites with performance accuracy between 25.1% to 50%	7	3.23%
3	Sites with performance accuracy between 50.1% to 75%	18	8.29%
4	Sites with performance accuracy between 75.1% to 99.99%	75	34.57%
5	Sites with 100% performance accuracy	100	46.08%
6	Total sites where forecasts were issued	**217**	**100%**

CHAPTER - 5

RESPONSE FROM USER AGENCIES

5.1 GENERAL

Central Water Commission performs the Flood Forecasting and Warning job on flood prone interstate river basins in the country. It issues the forecast to the users such as various civil and engineering departments of the state and central governments including, railway, defense, revenues authorities, public sector undertakings besides National Disaster Management Cell in the Ministry of Home Affairs, who are responsible for taking timely flood fighting measures, rescue operations including shifting of flood affected people to safer places etc.

Though the various state government agencies in-charge of the flood management and relief operations generally do not give their views in writing on usefulness of the flood forecasting activities of CWC, yet some of them do write to the Central Water Commission conveying their views on the usefulness of the flood forecasts received by them.

5.2 APPRECIATION LETTERS RECEIVED DURING FLOOD SEASON 2020

Abstract of some of the messages received by our field unit during the flood season 2020 are given below:

5.2.1 Office of the Superintending Engineer, Irrigation Circle, Vijayawada (Lr. no: SE/IC/VJA/DB/JTO-I/411CE dt 23.12.2020)

On the above subject, it is submitted that the flood forecasts issued by Central Water Commission authorities were very effectively utilized in operation and management of flood during the season 2020 for releasing the floods from Prakasam Barrage into the river and at Avanigadda, under the jurisdiction of this circle. Based on the forecast given, we have taken decision in operation of gates and management of storages. We are very much thankful for the cooperation rendered by the CWC Authorities.

5.2.2 Superintending Engineer, Krishna Bhagya Jala Nigam Limited, Narayanapur (Lr No. KBJNL/O & MC-1/PB-1/2020-21/2755 dt 14.12.2020)

During 2020 flood season, the forecast data provided was useful and helped to manage the flood effectively. The forecast data provided by CWC was in line with the actual data realized. We further look forward to receive data in future for better water and flood management.

ANNEXURES-I to XI

Salient Features of Flood Forecasting Stations maintained by Central Water Commission

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
1	Sangam	Jhelum/ Indus	Anantnag/Jammu and Kashmir	33.84	75.08		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1590.3	1591.2	1595.7	09-06-14			
2	Rammunshibagh (Srinagar)	Jhelum/ Indus	Srinagar/Jammu and Kashmir	34.06	74.86	1.1 Sangam 1.2 Khanabal 1.3 Nunwan	CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1585.53	1586.45	1589.65	2014	Telephone/ Mobile/ Telemtry	Rainfall Runoff Model	
3	Safapura	Jhelum/ Indus	Baramulla/Jammu and Kashmir	34.29	74.63		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1580	1580.5	1580.69	25-06-15			
4	Srinagar	Alaknanda/Ganga	Srinagar/Garhwal/ Uttarakhand	30.22	78.78	2.1 Rudraprayag (06)	HGD/HOCD/UGBO	Uttarakhand	539.00	540.00	536.85	1995	Wireless/ Telemetry	Conventional	Forecast never issued because HFL<WL
5	Ganganagar	Mandakini/Ganga	Rudraprayag/Uttarakhand	30.04	79.04		HGD/HOC Dehradun/UGBO		803	804	80				
6	Rishikesh	Ganga/Ganga	Rishikesh/Dehradun/Uttarakhand	30.11	78.31	3.1 Deoprayag (08) 3.2 Marora (05)	HGD/HOCD/ UGBO	Uttarakhand	339.50	340.50	341.72	1995	Wireless/ Telemetry	Conventional	
7	Hardwar	Ganga/Ganga	Hardwar/Hardwar/ Uttarakhand	29.98	78.19	4.1 Deoprayag (09) 4.2 Marora (06)	HGD/HOCD/ UGBO	Uttarakhand	293.00	294.00	296.30	2010	Wireless/ Telemetry	Conventional	
8	Dharmanagari Barrage	Ganga/Ganga	Bijnor/UttarPradesh				HGD/HOC Dehradun/UGBO								
9	Garhmuktheswar	Ganga/Ganga	Gaziabad/UP	28.77	78.14		MGD-II/HOCDehradun/UGBO Patna	East Uttar Pradesh	198.33	199.33	199.9	23-09-10			
10	Narora Barrage	Ganga/Ganga	Narora/ Bulanshahar/ Uttar Pradesh	28.19	78.40	148.1 Haridwar (48)	MGD2/HOCD/ UGBO	West Uttar Pradesh	NA	NA	NA	NA	Wireless	Conventional	
11	Kachlabridge	Ganga/Ganga	Budaun/UP	27.93	78.86		MGD-II/HOCDehradun/UGBO Patna	East Uttar Pradesh	161	162	162.79	24-09-10			
12	Fatehgarh	Ganga/Ganga	Farrukhabad/UP	27.39	79.62		MGD-II/HOCDehradun/UGBO Patna	East Uttar Pradesh	136.6	137.6	138.14	26-09-10			
13	Kalagarh Dam	Ramganga/Ganga	Pauri/Garhwal/Uttarakhand	29.49	78.76		MGD-II/HOCDehradun/UGBO Patna		FRL-365.3						

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
14	Moradabad	Ramganga/Ganga	Moradabad/Moradabad/Uttar Pradesh	28.83	78.80	5.1 Kalagarh (36)	MGD2/HOCD/ UGBO	West Uttar Prasdesh	189.60	190.60	192.88	2010	Wireless/ Telemetry	Conventional	
15	Bareilly	Ramganga/Ganga	Bareilly/Bareilly/ Uttar pradesh	28.30	79.37	6.1 Moradabad (28)	MGD2/HOCD/ UGBO	West Uttar Prasdesh	162.70	163.70	162.88	1978	Wireless/ Telemetry	Conventional	
16	Dabri	Ramganga/Ganga	Jalalabar/Shahjahanpur/UP	27.49	79.37		MGD-II/HOCDehradun/UGBO Patna	East Uttar Pradesh	136.3	137.3	139.69	28-09-83			
17	Kannauj	Ganga/Ganga	Kannauj/Kannauj/ Uttar Pradesh	27.02	79.97	7.1 Narora (D/s) (48)	MGD2/HOCD/ UGBO	West Uttar Prasdesh	124.97	125.97	126.78	2010	Wireless	Conventional	
18	Ankinghat	Ganga/Ganga	Ankinghat/Kanpur/ Uttar Pradesh	26.93	80.03	8.1 Narora (D/s) (48) 8.2 Bareilly (48) 8.3 Fathegarh (12) 8.4 Dabri (12)	MGD2/HOCD/ UGBO	East Uttar Prasdesh	123.00	124.00	124.49	2010	Wireless/ Telemetry	Conventional	
19	Kanpur	Ganga/Ganga	Kanpur/Kanpur/ Uttar Pradesh	26.47	80.38	9.1 Fathegarh (24) 9.2 Dabri (24) 9.3 Ankinghat (12)	MGD2/HOCD/ UGBO	East Uttar Prasdesh	113.00	114.00	114.08	2010	Wireless/ Telemetry	Conventional	
20	Dalmau	Ganga/Ganga	Rae-barerilly/ Rae-barerilly/ Uttar Pradesh	26.06	81.03	10.1 Ankninghat (28) 10.2 Kanpur (16)	MGD2/HOCD/ UGBO	East Uttar Prasdesh	98.36	99.36	99.84	1973	Wireless/ Telemetry	Conventional	
21	Phaphamau	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.47	83.11	11.1 Kanpur (30) 11.2 Chillaghat (24)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	83.73	84.73	87.98	1978	Wireless/ Telemetry	Conventional	
22	Paonta Sahib	Yamuna/Ganga	Poanta/Sirmaur/ Himachal Pradesh	30.43	77.59	Naugaon 2-10 hrs Haripur(02-08) hrs Jateon Barrage (2-08)hrs	UYD/HOC/YBO	Himachal Pradesh	383.5	384.5	384.6	05-09-95		3 days advisory Forecast (CWC BETA Model)	
23	Tajewala Barrage (Hathnikund Barrage)	Yamuna/Ganga	Yamunanagar/ Yamunanagar/ Haryana	30.31	77.58	149.1 Paonta (06)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi					Wireless		Inflow Forecast Not in Operation
24	Karnal	Yamuna/Ganga	Shergarh Tapu/ Karnal/ Haryana	30.06	77.14	Kalanaur 4-28 hrs	UYD/HOC/YBO	Haryana						Conventional	
25	Mawi	Yamuna/Ganga	Panipat/ Muzzafarpur/ Uttar Pradesh	29.38	77.07	12.1 Kalanur (18-30)	UYD/HOCN/ YBO	West Uttar Pradesh	230.00	230.85	232.45	1988	Wireless/ Telemetry	Conventional	
26	Dhansa Regulator	Sahibi/Yamuna/ Ganga	Delhi/Delhi/ NCT Delhi	28.53	76.87	14.1 Dadri (48) 14.2 Masani (48)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	211.44	212.44	213.58	1977	Wireless	Conventional	
27	Delhi Railway Bridge	Yamuna/Ganga	Delhi/Delhi/ NCT Delhi	28.66	77.25	13.1 Mawi (18-32)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	204.00	204.83	207.49	1978	Wireless/ Telemetry	Conventional	
28	Mathura	Yamuna/Ganga	Mathura/Mathura/ Uttar Pradesh	27.51	77.69	15.1 Mohana (20-33)	UYD/HOCN/ YBO	West Uttar Pradesh	164.20	165.20	169.73	1978	Wireless/ Telemetry	Conventional	

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
29	Agra	Yamuna/Ganga	Agra/Agra/ Uttar Pradesh	27.19	78.03	16.1 Mathura (216-4)	LYD/HOCN/ YBO	West Uttar Pradesh	151.40	152.40	154.76	1978	Wireless/ Telemetry	Conventional	
30	Etawah	Yamuna/Ganga	Etawah/Etawah/ Uttar Pradesh	26.75	78.99	17.1 Agra (20-45)	LYD/HOCN/ YBO	West Uttar Pradesh	120.92	121.92	126.13	1978	Wireless/ Telemetry	Conventional	
31	Gandhisagar Dam	Chambal/Ganga	Gandhisagar Dam/Mandasur/ Madhya Pradesh	24.65	75.61	150.1 Tal (12-21) 150.2 Mahidpur (12-20)	CD/HOCN/ YBO	West Madhya Pradesh	399.90	399.90	399.90	2011	Telemetry	Mathematical	
32	Rana Pratap Sagar Dam	Chambal/Ganga	Chittorgarh/Rajasthan	24.91	75.58		CD Jaipur/HOC Noida/YBO ND								
33	Kota Barrage	Chambal/Ganga	Kota/Rajasthan				CD Jaipur/HOC Noida/YBO ND								
34	Kota City	Chambal/Ganga	Kota/Rajasthan	25.19	75.84		CD Jaipur/HOC Noida/YBO ND		239	240					
35	Bisalpur Dam	Banas/Ganga	Deoli/Tonk/Rajasthan	25.92	75.45		CD Jaipur/HOC Noida/YBO ND	East Rajasthan	FRL-315.5					Rainfall Runoff Model	
36	Kalisindh Dam	Kalisindh/Ganga	Khanpur/Jhalawar/Rajasthan	24.48	76.22		CD Jaipur/HOC Noida/YBO ND								
37	Parwan Dam	Parwan/Ganga	Baran/Jhalawar//Rajasthan	24.62	76.51		CD Jaipur/HOC Noida/YBO ND								
38	Gambhiri Dam	Gambhiri/Ganga	Chittorgarh/Rajasthan	24.7	74.73		CD Jaipur/HOC Noida/YBO ND								
39	Panchana Dam	Chambal/Ganga	Mandrail/Karauli/Rajasthan	26.55	77.00		CD Jaipur/HOC Noida/YBO ND								
40	Gudha Dam	Mej/Ganga	Bundi/Rajasthan	25.48	75.46		CD Jaipur/HOC Noida/YBO ND		FRL-305.86						
41	Parwati Dam	Parwati/Ganga	Dholpur / Rajasthan				CD Jaipur/HOC Noida/YBO ND								
42	Auraiya	Yamuna/Ganga	Auraiya/Auraiya/ Uttar Pradesh	26.42	79.48	18.1 Etawah (21-24) 18.2 Dhaulpur (15-36)	LYD/HOCN/ YBO	West Uttar Pradesh	112.00	113.00	118.19	1996	Wireless/ Telemetry	Conventional	

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
43	Kalpi	Yamuna/Ganga	Kalpi/Jalaun/ Uttar Pradesh	26.13	79.76	19.1 Etawah (21-27) 19.2 Dhaulpur (15-42)	LYD/HOCN/ YBO	West Uttar Pradesh	107.00	108.00	112.98	1996	Wireless/ Telemetry	Conventional	
44	Hamirpur	Yamuna/Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.96	80.16	20.1 Auraiya (15)	LYD/HOCN/ YBO	East Uttar Prasdesh	102.63	103.63	108.59	1983	Wireless/ Telemetry	Conventional	
45	Rajghat Dam	Betwa/Yamuna/ Ganga	Chanderi/ Madhya Pradesh	24.76	78.23		LYD/HOCN/ YBO		380.80						
46	Matatila Dam	Betwa/Yamuna/ Ganga	Lalitpur/UttarPradesh	25.10	78.36		LYD/HOCN/ YBO	East Uttar Prasdesh	308.46	310.04					
47	Mohana	Betwa/Yamuna/ Ganga	Jhansi/Jhansi/ Uttar Pradesh	25.65	78.99	21.1 Garrouli (16-21) 21.2 Nautghat (12-21)	LYD/HOCN/ YBO	East Uttar Prasdesh	121.66	122.66	133.69	1983	Wireless/ Telemetry	Conventional	
48	Sahjiana	Betwa/Yamuna/ Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.95	80.15	22.1 Mohana (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.54	104.54	108.67	1983	Wireless/ Telemetry	Conventional	
49	Banda	Ken/Yamuna/ Ganga	Banda/Banda/ Uttar Pradesh	25.48	80.31	23.1 Madla (12-18) 23.2 Kaimaha (9-15)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.00	104.00	113.29	2005	Wireless/ Telemetry	Conventional	
50	Chillaghat	Yamuna/Ganga	Banda/Banda/ Uttar Pradesh	25.77	80.53	21.1 Hamirpur (12)	LYD/HOCN/ YBO	East Uttar Prasdesh	99.00	100.00	105.16	1978	Wireless/ Telemetry	Conventional	
51	Naini	Yamuna/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.42	81.84	24.1 Chillaghat (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	83.74	84.74	87.99	1978	Wireless/ Telemetry	Conventional	
52	Allahabad (Chatnag)	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.41	81.91	25.1 Kanpur (30) 25.2 Chillaghat (24)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	83.73	84.73	88.03	1978	Wireless/ Telemetry	Conventional	
53	Mirzapur	Ganga/Ganga	Mirzapur/Mirzapur/ Uttar Pradesh	25.15	82.53	26.1 Dalmau (28) 26.2 Chillaghat (34)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	76.72	77.72	80.34	1978	Wireless/ Telemetry	Conventional	
54	Varanasi	Ganga/Ganga	Varanasi/Varanasi/ Uttar Pradesh	25.33	83.04	27.1 Kanpur (48) 27.2 Hamirpur(48)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	70.26	71.26	73.90	1978	Wireless/ Telemetry	Conventional	
55	Hanuman Setu	Gomti/Ganga	Lucknow/Lucknow/ Uttar Pradesh	26.86	80.95	29.1 Bhatpurwaghat (48)	MGD2/HOCD/ UGBO	East Uttar Prasdesh	108.50	109.50	110.85	1971	Wireless	Conventional	

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											(m)	Year			
56	Rae-Bareilly	Sai/Gomti/Ganga	Rae-bareilly/Rae-bareilly/Uttar Pradesh	26.20	81.25	28.1 Bani (48)	MGD2/HOCD/ UGBO	East Uttar Prasdesh	100.00	101.00	104.81	1982	Wireless/ Telemetry	Conventional	
57	Jaunpur	Gomti/Ganga	Jaunpur/Jaunpur/ Uttar Pradesh	25.75	82.69	30.1 Sultanpur (24)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	73.07	74.07	77.74	1971	Wireless/ Telemetry	Conventional	
58	Ghazipur	Ganga/Ganga	Ghazipur/ Ghazipur/ Uttar Pradesh	25.58	83.60	31.1 Allahabad (28) 31.2 Sultanpur (30)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	62.11	63.11	65.22	1978	Wireless/ Telemetry	Conventional	
59	Buxar	Ganga/Ganga	Buxar/Buxar/Bihar	25.58	83.97	32.1 Allahabad (30)	MGD5/HOCP/LGBO	Bihar	59.32	60.32	62.09	1948	Wireless/ Telemetry	Conventional	
60	Ballia	Ganga/Ganga	Ballia/ Ballia/ Uttar Pradesh	25.77	84.37	42.1 Varanasi (28) 42.2 Jaunpur (28)	MGD3/HOCV/ UGBO	East Uttar Prasdesh	56.62	57.62	60.25	2003	Wireless/ Telemetry	Conventional	
61	Banbasa Barrage	Ghaghra/Ganga	Champawat/Uttarakhand	28..99	80.1		MGD-I/HOC Varanasi/UGBO Lucknow	West UP	222.3	223.3	223.3	18-06-13			
62	Katarniaghat Barrage	Ghaghra/Ganga	Bahraich / UttarPradesh				MGD-I/HOC Varanasi/UGBO Lucknow	West UP							
63	Elgin Bridge	Ghaghra/Ganga	Barabanki/Barabanki/ Uttar Pradesh	27.09	81.49	33.1 Katernighat (30-36) 33.2 Shardanagar (30-36)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	105.07	106.07	107.56	2009	Wireless/ Telemetry	Conventional	
64	Ayodhya	Ghaghra/Ganga	Ayodhya/Faizbad/ Uttara Pradesh	26.81	82.21	34.1 Elgin Bridge (18-24)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	91.73	92.73	94.01	2009	Wireless/ Telemetry	Conventional	
65	Kakardhari	Rapti/Ghaghra/ Ganga	Bahraich / UttarPradesh	27.83	81.80		MGD1/HOCV/ UGBO	East Uttar Prasdesh	130.00	131.00					
66	Balrampur	Rapti/Ghaghra/ Ganga	Balrampur/ Balrampur/ Uttar Pradesh	27.44	82.23	35.1 Kakardhari (18-24)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	103.62	104.62	105.25	2000	Wireless/ Telemetry	Conventional	
67	Bansi	Rapti/Ghaghra/ Ganga	Bansi/ Siddarthnagar/ Uttar Pradesh	27.18	82.93	36.1 Balrampur (18-24)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	83.90	84.90	85.82	1998	Wireless/ Telemetry	Conventional	
68	Gorakhpur (Birdghat)	Rapti/Ghaghra/ Ganga	Gorahpur/ Gorakhpur/ Uttar Pradesh	26.73	83.35	37.1 Bansi (18-24)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	73.98	74.98	77.54	1998	Wireless/ Telemetry	Conventional	
69	Turtipar	Ghaghra/Ganga	Balthra/Ballia/ Uttar Pradesh	26.14	83.88	38.1 Ayodhya (30-36) 38.2 Gorakhpur (Birdghat) (30-36)	MGD1/HOCV/ UGBO	East Uttar Prasdesh	63.01	64.01	66.00	1998	Wireless/ Telemetry	Conventional	

S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	Div/Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
70	Darauli	Ghaghra/Ganga	Darauli/Siwan/Bihar	26.07	84.13	39.1 Elgin Bridge (54) 39.2 Gorakhpur (Birdghat) (28)	LGDII/HOCP/LGBO	Bihar	59.82	60.82	61.74	1998	Wireless	Conventional	
71	Gangpur Siswan	Ghaghra/Ganga	Siwan/Siwan/Bihar	25.91	84.39	40.1 Turtipar (20)	LGDII/HOCP/LGBO	Bihar	56.04	57.04	58.01	1983	Wireless	Conventional	
72	Chhapra	Ghaghra/Ganga	Chhapra/Saran/Bihar	25.76	84.79	41.1 Gangpur Siswan (16)	LGDII/HOCP/LGBO	Bihar	52.68	53.68	54.59	1982	Wireless	Conventional	
73	Bansagar Dam	Ganga/Ganga	Beohari/Shahdol/Madhya Pradesh	24.19	81.8		MGDIII/HOC Varanashi/UGBO	East Madhya Pradesh	FRL-341.65					Rainfall Runoff Model	
74	Rihand Dam	Rihand/ Ganga	Robertsganj/Sonbhadra/ Uttar Pradesh	24.21	83.02		MGDIII/HOC Varanashi/UGBO	East Uttar Pradesh	FRL-268.22					Rainfall Runoff Model	
75	Annaraj Dam	Khoranadi/Ganga	Bhadua / Hazaribagh/Jharkhand	24.06	83.8		LGDII/HOCP/LGBO		FRL-252.44						
76	Bhairawa Dam	Goda Nala /Ganga	Hazaribagh/Jharkhand	23.51	85.67		DD/HOCM/ LGBO		FRL-356.70						
77	Inderpuri Barrage	Sone/Ganga	Inderpuri/Garhwa/ Bihar	24.75	84.16		LGDII/HOCP/LGBO	Bihar	FRL-173.00						
78	Inderpuri	Sone/Ganga	Inderpuri/Rohtas/ Bihar	24.84	84.13	43.1 Chopan (12) 43.2 Daltonganj (12)	LGDII/HOCP/LGBO	Bihar	107.20	108.20	108.85	1975	Wireless	Conventional	
79	Koelwar	Sone/Ganga	Koelwar/Bhojpur/ Bihar	25.57	84.79	44.1 Inderpuri (10-15)	LGDII/HOCP/LGBO	Bihar	54.52	55.52	58.88	1971	Wireless	Conventional	
80	Maner	Sone/Ganga	Maner/Patna/Bihar	25.70	84.86	45.1 Gandhighat (8)	LGDII/HOCP/LGBO	Bihar	51.00	52.00	53.79	1976	Wireless	Conventional	
81	Patna (Dighaghat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.64	85.10	47.1 Allahabad (50) 47.2 Patna (Gandhighat) (04)	LGDII/HOCP/LGBO	Bihar	49.45	50.45	52.52	1975	Wireless	Conventional	
82	Gandak Barrage	Gandak/Ganga	West Champaran/Bihar	27.43	83.90		LGDI/HOCP/LGBO	Bihar	113.08						
83	Khadda	Gandak/Ganga	Deoria/Kushinagar/ Uttar Pradesh	27.19	83.95	51.1 Triveni (07)	LGD-I/MC/LGBO Patna	Bihar	95.00	96.00	97.50	2002	Wireless	Conventional	
84	Chatia	Gandak/Ganga	Ariraj West Champaran/ Motihari/ Bihar	26.50	84.54	52.1 Triveni (24)	LGD-I/MC/LGBO Patna	Bihar	68.15	69.15	70.04	2002	Wireless	Conventional	

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85	Dumariaghat	Gandak/Ganga	Gopalganj/Bihar	26.35	84.76		LGD-I/MC/LGBO Patna	Bihar	61.22	62.22	64.1	17-08-17			
86	Rewaghat	Gandak/Ganga	Muzzafarpur/Muzzafarpur/Bihar	25.99	85.05	53.1 Chatia (20)	LGDII/HOCP/LGBO	Bihar	53.41	54.41	55.41	1986	Wireless	Conventional	
87	Hazipur	Gandak/Ganga	Hazipur/Vaishali/ Bihar	25.69	85.20	54.1 Rewaghat (16)	LGDII/HOCP/LGBO	Bihar	49.32	50.32	50.93	1948	Wireless	Conventional	
88	Patna (Gandhighat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.62	85.17	48.1 Buxar (24) 48.2 Darauli (24) 48.3 Japla (24) . 48.4 Rewaghat (24)	LGDII/HOCP/LGBO	Bihar	47.60	48.60	50.27	1994	Wireless/ Telemetry	Conventional	
89	Amanat Dam	Baranadi/Ganga	Hazaribagh/Jharkhand	24.32	84.30		LGDII/HOCP/LGBO		274.39						
90	Batane Dam	Punpun/Ganga	Chhatarpur/Palamu/Jharkhand	24.42	84.26		LGDII/HOCP/LGBO		232.85						
91	Sripalpur	Punpun/Ganga	Sripalpur/Patna/Bihar	25.50	85.11	46.1 Kinjer (24)	LGDII/HOCP/LGBO	Bihar	49.60	50.60	53.91	1976	Wireless	Conventional	
92	Hathidah	Ganga/Ganga	Hathidah/Patna/Bihar	25.37	85.99	49.1 Gandhighat (16)	LGDII/HOCP/LGBO	Bihar	40.76	41.76	43.15	1971	Wireless/ Telemetry	Conventional	
93	Munger	Ganga/Ganga	Munger/Munger/ Bihar	25.38	86.46	50.1 Gandhighat (24)	LGDII/HOCP/LGBO	Bihar	38.33	39.33	40.99	1976	Wireless/ Telemetry	Conventional	
94	Lalbeghiaghat	Burhi Gandak/ Ganga	Dhaka/Motihari/Bihar	26.65	85.03	55.1 Chainpatia (24)	LGDI/HOCP/LGBO	Bihar	62.20	63.20	67.09	1975	Wireless	Conventional	
95	Ahirwalia	Burhi Gandak/ Ganga	Chakia/Purba Champaren/Bihar	26.36	85.14		LGD-I/MC/LGBO Patna	Bihar	58.62	59.62	61.17	02-06-14			
96	Muzzafarpur (Sikandarpur)	Burhi Gandak/ Ganga	Sikandarpur/Muzzafarpur/Bihar	26.14	85.39	56.1 Ahirwala(S) (22)	LGDI/HOCP/LGBO	Bihar	51.53	52.53	54.29	1987	Wireless	Conventional	
97	Samastipur	Burhi Gandak/ Ganga	Samastipur/Samastipur/Bihar	25.86	85.79	57.1 Sikandarpur (20)	LGDI/HOCP/LGBO	Bihar	45.02	46.02	49.38	1987	Wireless	Conventional	

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98	Rosera	Burhi Gandak/ Ganga	Rosera/Samastipur/ Bihar	25.74	86.02	58.1 Sikandarpur (28)	LGDI/HOCP/LGBO	Bihar	41.63	42.63	46.35	1987	Wireless	Conventional	
99	Khagaria	Burhi Gandak/ Ganga	Khagaria/Khagaria/ Bihar	25.50	86.48	59.1 Sikandarpur (24) 59.2 Gandhighat (24)	LGDI/HOCP/LGBO	Bihar	35.58	36.58	39.22	1976	Wireless	Conventional	
100	Bhagalpur	Ganga/Ganga	Bhagalpur/Bhagalpur/Bihar	25.27	87.02	65.1 Gandhighat (32)	LGDII/HOCP/LGBO	Bihar	32.68	33.68	34.20	2003	Wireless/ Telemetry	Conventional	
101	Colgong/Kahalgaon	Ganga/Ganga	Colgong/Bhagalpur/ Bihar	25.27	87.23	66.1 Gandhighat (38)	LGDII/HOCP/LGBO	Bihar	30.09	31.09	32.87	2003	Wireless/ Telemetry	Conventional	
102	Kosi Barrage	Kosi/Ganga	Supaul/Supaul/Bihar	26.52	86.92		LGDI/HOCP/LGBO								
103	Basua	Kosi/Ganga	Supaul/Supaul/Bihar	26.13	86.58	67.1 Birpur (16)	LGDI/HOCP/LGBO	Bihar	46.75	47.75	49.17	2010	Wireless	Conventional	
104	Dheng Bridge	Bagmati/Ganga	Sitamarhi/Bihar	26.72	85.32		LGDI/HOCP/LGBO		69.10	70.10	73.00	2017			
105	Runisaidpur	Bagmati/Ganga	Sitamarhi/Bihar	26.41	85.49		LGDI/HOCP/LGBO		52.73	53.73	58.15	2017			
106	Benibad	Bagmati/Ganga	Benibad/Muzzafarpur/ Bihar	26.20	85.67	60.1 Runisaidpur (24)	LGDI/HOCP/LGBO	Bihar	47.68	48.68	50.01	2004	Wireless/ Telemetry	Conventional	
107	Kamtaul	Adhwara Group/Ganga	Kamtaul Market/Darbhanga/ Bihar	26.33	85.85	62.1 Sonebarsa (24)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	52.99	1987	Wireless/ Telemetry	Conventional	
108	Ekmighat	Adhwara Group/Ganga	Laheria Seria/Darbhanga/ Bihar	26.12	85.88	63.1 Saulighat (24)	LGDI/HOCP/LGBO	Bihar	45.94	46.94	49.52	2004	Wireless/ Telemetry	Conventional	
109	Hayaghat	Bagmati/Ganga	Hayaghat Papermill/Darbhanga/ Bihar	26.08	85.89	61.1 Benibad (24) 61.2 Ekmighat (24)	LGDI/HOCP/LGBO	Bihar	44.72	45.72	48.96	1987	Wireless/ Telemetry	Conventional	
110	Jainagar	Kamlabalan/ Ganga	Madhubani/ Bihar	26.59	86.13		LGDI/HOCP/LGBO	Bihar	66.75	67.75	71.35	1965			

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111	Jhanjharpur	Kamlabalan/ Ganga	Jhanjharpur/Madhubani/ Bihar	26.27	86.27	64.1 Jainagar (8)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	53.01	2004	Wireless	Conventional	
112	Sonebarsa	Adhwara Group/Ganga	Sitamarhi/Bihar	25.69	86.71		LGDI/HOCP/LGBO		80.85	81.85	83.00	2006			
113	Balthara	Kosi/Ganga	Choutham/Khagaria/ Bihar	25.54	86.72	68.1 Basua (24) 68.2 Hayaghat (24)	LGDI/HOCP/LGBO	Bihar	32.85	33.85	36.40	1987	Wireless	Conventional	
114	Kursela	Kosi/Ganga	Kusela/Katihar/Bihar	25.42	87.23	69.1 Basua (24) 69.2 Hathidah (24)	LGDI/HOCP/LGBO	Bihar	29.00	30.00	32.04	1998	Wireless	Conventional	
115	Sahibganj	Ganga/Ganga	Sahibganj/Sahibganj/Jharkhand	25.25	87.64	70.1 Bhagalpur (22)	LGDII/HOCP/LGBO	Jharkhand	26.25	27.25	30.91	1998	Wireless	Conventional	
116	Taibpur	Mahananda/ Ganga	Kishanganj/Bihar	26.36	88.17		LGDI/HOCP/LGBO	Bihar	65.00	66.00	67.22	1968			
117	Dengraghat	Mahananda/ Ganga	Bayasi/Purnes/Bihar	25.85	87.81	71.1 Taibpur (24) 71.2 Chargharia (24)	LGDI/HOCP/LGBO	Bihar	34.65	35.65	38.09	1968	Wireless	Conventional	
118	Jhawa	Mahananda/ Ganga	Jhawa/Katihar/Bihar	25.43	87.76	72.1 Dhengraghat (16) 72.2 Araria (16)	LGDI/HOCP/LGBO	Bihar	30.40	31.40	33.51	1987	Wireless	Conventional	
119	Arraria	Parwan/Ganga	Arraria/Bihar	26.33	87.54		LGDI/HOCP/LGBO	Bihar	46.00	47.00	49.40	2017			
120	Farakka Barrage	Ganga/Ganga	Farakka/Murshidabad/ West Bengal	24.80	87.92	73.1 Bhagalpur (36)	LGDI/HOCP/LGBO	Gangetic West Bengal	21.25	22.25	25.14	1998	Wireless	Conventional	
121	Massanjore Dam	Mayurakshi/Ganga	Massanjore Dam/ Santhal Parganas/ Jharkhand	24.11	87.31	151.1 Maharo (24) 151.2 Kusiyari (24) 151.3 Haripur (24)	DD/HOCM/ LGBO	Jharkhand	121.31		122.87	1999	Wireless/ Telemetry	Conventional	
122	Tilpara Barrage	Mayurakshi/Ganga	Tilpara Dam/Suri/ Birbhum/ West Bengal	23.95	87.53	152.1 Massanjore Dam (24) 152.2 Tantoloi (24)	DD/HOCM/ LGBO	Gangetic West Bengal	62.79		67.05	1978	Wireless/ Telemetry	Conventional	
123	Narayanpur	Mayurakshi/ Ganga	Kandi/Murshidabad/ West Bengal	23.88	87.99	106.1 Tilpara Barrage (12-18)	DD/HOCM/ LGBO	Gangetic West Bengal	26.99	27.99	29.69	1995	Wireless	Conventional	
124	Sikatia Barrage	Ajoy/Ganga	Ausgram/Bardhaman/West Bengal	24.15	86.25		DD/HOCM/ LGBO				169.24	27-09-95			
125	Gheropara	Ajoy/Ganga	Khairasol/ Bhirbum/ West Bengal	23.62	87.71	107.1 Jamtara (8-24) 107.2 Sikata Barrage (8-24)	DD/HOCM/ LGBO	Gangetic West Bengal	38.42	39.42	43.94	1978	Wireless	Conventional	
126	Tenughat Dam	Damodar/Ganga	Tenughat Dam	23.72	85.84	153.1 Hendgir (24) 153.2 Ramgarh (24)	DD/HOCM/ LGBO	Jharkhand	268.83		265.56	1985	Wireless/ Telemetry	Conventional	

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127	Tilaya Dam	Barakar/ Ganga	Koderma/Jharkhand	24.32	85.52		DD/HOCM/ LGBO				372.28	06-07-86			
128	Konar Dam	Konar/Ganga	Hazaribag/Jharkhand	23.93	85.76		DD/HOCM/ LGBO				427.91	Oct-61			
129	Panchet Dam	Damodar/Ganga	Panchet Dam/ Dhanbad/ Jharkhand	23.68	86.75	154.1 Pupunki (24) 154.2 Tenughat Dam (24) 154.3 Konar Dam (24)	DD/HOCM/ LGBO	Jharkhand	132.59		132.89	1959	Wireless/ Telemetry	Conventional	
130	Maithon Dam	Barakar/ Damodar	Maithon Dam/ Dhanbad/ Jharkhand	23.78	86.81	156.1 Nandadih (24) 156.2 Tilaiya Dam (24) 156.3 Barkisaraia (24)	DD/HOCM/ LGBO	Jharkhand	150.88		151.79	1959	Wireless/ Telemetry	Conventional	
131	Durgapur Barrage	Damodar/Ganga	Durgapur/ Burdwan/ West Bengal	23.48	87.31	155.1 Panchet Dam (24) 155.2 Maithon Dam (24)	DD/HOCM/ LGBO	Gangetic West Bengal	64.47		64.47	2011	Wireless/ Telemetry	Conventional	
132	Sundar Dam	Anjanwa/ Ganga	Godda/Jharkhand	24.93	87.38		DD/HOCM/ LGBO		110.68						
133	Harinkhola	Mundeshwari/ West Benagl	Arambagh/Hooghly/ West Bengal	22.88	87.78	108.1 Durgapur Barrage (20-26)	DD/HOCM/ LGBO	Gangetic West Bengal	11.80	12.80	14.58	1978	Wireless/ Telemetry	Conventional	
134	Hinglow Dam	Kangsabati	Bankura/West Bengal	23.82	87.18		DD/HOCM/ LGBO	Gangetic West Bengal	97.84						
135	Kangsabati Dam	Kangsabati	Kangsabati Dam/Bankura West Bengal	22.96	86.75	157.1 Simulia (24) 157.2 Purihalsa (24) 157.3 Tusuma (24) 157.4 Kharidwar (24) 157.5 Phulbaria (24)	DD/HOCM/ LGBO	Gangetic West Bengal	134.11		134.71	1978	Wireless	Conventional	
136	Mohanpur	Kangsabati/ Ganga	Medhinipur/ Medhinipur/ West Bengal	22.40	87.34	109.1 Kangsabati Dam (24) 109.2 D P Ghat (24)	DD/HOCM/ LGBO	Gangetic West Bengal	24.73	25.73	29.87	1978	Wireless	Conventional	
137	Yingkiang	Siang/ Brahmaputra	Upper Siang/Arunachal Pradesh	28.62	95.03		UBD/HOCG/ BBBO	Assam and Meghalaya	303.00	304.00					
138	Passighat	Siang/ Brahmaputra	Passighat/ East Siang/ Arunachal Pradesh	28.06	95.33	74. 1 Tuting (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	152.96	153.96	157.54	11-06-00	Wireless	Conventional	
139	Dhollabazar	Lohit/Brahmaputra	Tinsukia/Assam	27.75	95.6		UBD/HOC/B&BBO	Assam & Meghalaya	127.27	128.27	130.07	22-09-12			
140	Dibrugarh	Brahmaputra/ Brahmaputra	Dibrugarh/Dibrugarh/Assam	27.49	94.91	74.1 Passighat (12) 74.2 Tezu (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	104.70	105.70	106.48	1998	Wireless/ Telemetry	Conventional	
141	Namsai	Nao Dehing/Brahmaputra	Namsai/Lohit/Arunachal Pradesh	27.66	95.83		UBD/HOC/B&BBO	Arunachal Pradesh	140.6	141.1	144.46	07-10-79			
142	Naharkatia	Buridehing/ Brahmaputra	Naharkatia/ Dibrugarh/ Assam	27.29	95.33	75.1 Margherita (10)	UBD/HOCG/ BBBO	Assam and Meghalaya	119.40	120.40	122.69	1973	Wireless	Conventional	
143	Chenimari (Khowang)	Buridehing/ Brahmaputra	Khowang/ Dibrugarh/ Assam	27.31	94.88	76.1 Naharkatia (21)	UBD/HOCG/ BBBO	Assam and Meghalaya	101.11	102.11	103.92	1988	Wireless	Conventional	

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144	Nanglamoraghat	Desang/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.99	94.78	77.1 Dillighat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	93.46	94.46	96.49	1998	Wireless	Conventional	
145	Sibsagar	Dikhow/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.98	94.58	78.1 Bihubar (09)	UBD/HOCG/ BBBO	Assam and Meghalaya	91.40	92.40	95.62	1974	Wireless	Conventional	
146	Neamatighat	Brahmaputra/ Brahmaputra	Neamatighat/ Jorhat/ Assam	26.86	94.25	80.1 Dibrugarh (24) 80.2 Chenimari (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	84.04	85.04	87.37	1991	Wireless/ Telemetry	Conventional	
147	Choldhowaghat	Subansiri/ Brahmaputra	Dhakuakhana/Lakhimpur/Assam	27.44	94.25		UBD/HOC/B&BBO	Assam & Meghalaya	99.02	100.02	101.31	27-07-72			
148	N.H.Xing Ranganadi	Ranganadi/Brahmaputra	Bihuparia/ Lakhimpur/ Assam	27.2	94.05		UBD/HOC/B&BBO	Assam & Meghalaya	93.81	94.81	95.92	02-07-79			
149	Badatighat	Subansiri/ Brahmaputra	Bihuparia/ Lakhimpur/ Assam	26.95	93.96	79.1 Chouldhowaghat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	81.53	82.53	86.84	1972	Wireless	Conventional	
150	Golaghat	Dhansisri (S)/ Brahmaputra	Golaghat/ Golaghat Assam	26.50	93.95	82.1 Bokajan (14) 82.2 Gelabil (14)	UBD/HOCG/ BBBO	Assam and Meghalaya	88.50	89.50	91.30	1986	Wireless	Conventional	
151	Numaligarh	Dhansisri (S)/ Brahmaputra	Numaligarh/ Golaghat/ Assam	26.63	93.73	83.1 Golaghat (10)	UBD/HOCG/ BBBO	Assam and Meghalaya	76.42	77.42	79.87	1985	Wireless	Conventional	
152	N T Road Crossing	Jia- Bharali/ Brahmaputra	Balipara/Sonitpur/ Assam	26.81	92.88	84.1 Seppa (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	76.00	77.00	78.50	2007	Wireless	Conventional	
153	Tezpur	Brahmaputra/ Brahmaputra	Tezpur/ Sonitpur/ Assam	26.62	92.80	81.1 Neamatighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	64.23	65.23	66.59	1988	Wireless/ Telemetry	Conventional	
154	Kampur	Kopili/ Brahmaputra	Kampur/ Nagaon/ Assam	26.15	92.65	85.1 Kheronighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	59.50	60.50	61.86	1973	Wireless	Conventional	
155	Dharamtul	Kopili/ Brahmaputra	Dharamtul/Morigaon/Assam	26.17	92.36	86.1 Kampur (15)	UBD/HOCG/ BBBO	Assam and Meghalaya	55.00	56.00	58.09	2004	Wireless	Conventional	
156	Guwahati D C Court	Brahmaputra/ Brahmaputra	Guwahati/Kamrup/ Assam	26.19	91.74	87.1 Tezpur (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	48.68	49.68	51.46	2004	Wireless/ Telemetry	Conventional	
157	N H Crossing	Puthimari/ Brahmaputra	Rangia/ kamrup/ Assam	26.44	91.56	88.1 DRF (13)	MBD/HOCG/ BBBO	Assam and Meghalaya	50.81	51.81	55.08	2008	Wireless/ Telemetry	Conventional	

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158	N T Road Crossing	Pagladiya/ Brahmaputra	Nalbari/Nalbari/ Assam	26.45	91.46	89.1 Melabazar (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	51.75	52.75	55.45	2004	Wireless/ Telemetry	Conventional	
159	Mathanguri	Manas/ Brahmaputra	Baska/Assam	26.78	90.95		MBD/HOCG/ BBBO	Assam and Meghalaya	98.10	99.10	100.28	1973			
160	Road Bridge	Beki/ Brahmaputra	Sorbhog/ Barpeta/ Assam	26.49	90.91	90.1 Kurijampa (12) (Bhutan)	LBD/HOCG/ BBBO	Assam and Meghalaya	44.10	45.10	46.20	2000	Wireless	Conventional	
161	N H Crossing	Manas/ Brahmaputra	Bijni/ Bongaigaon/ Assam	26.46	90.75	91.1 Panbari (6)	LBD/HOCG/ BBBO	Assam and Meghalaya	47.81	48.42	50.08	1984	Wireless	Conventional	
162	Goalpara	Brahmaputra/ Brahmaputra	Goalpara/ Goalpara/ Assam	26.20	90.58	92.1 Guwahati (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	35.27	36.27	37.43	1954	Wireless/ Telemetry	Conventional	
163	Kokrajhar	Gaurang/ Brahmaputra	Kokrajhar/ Assam	26.39	90.25		MBD/HOCG/ BBBO	Assam & Meghalaya	41.85	42.85	43.6	20-08-15			
164	Dhubri	Brahmaputra/ Brahmaputra	Dhubri/Dhubri/ Assam	26.01	89.99	100.1 Goalpara (15)	MBD/HOCG/ BBBO	Assam and Meghalaya	27.62	28.62	30.36	1988	Wireless/ Telemetry	Conventional	
165	Golokganj	Sankosh/ Brahmaputra	Golokganj/Dhubri/ Assam	26.11	89.82	93.1 Sankosh LRP (12) 93.2 Barabisa (12)	LBD/SICG/TBO	Assam and Meghalaya	28.94	29.94	30.95	2007	Wireless/ Telemetry	Conventional	
166	Tufangunj	Raidak -I	Tufangunj/ Coochbehar/ west Bengal	26.31	89.68	97.1 Chepan (12)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	34.22	35.30	36.36	1993	Wireless	Conventional	
167	N H 31	Jaldhaka/ Brahmaputra	Dhupguri/ Jalpaiguri/ West Bengal	26.57	88.94	94.1 Nagarakata (6) 94.2 Diana (6) 94.3 Murti (6)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	80.00	80.90	81.33	1972	Wireless	Conventional	
168	Hasimara	Torsa	Hasimara/Coochbehar/West Bengal	26.72	89.35		LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	116.30	116.90	118.50	1996			
169	Ghughumari	Torsa	Coochbehar/Coochbehar/ West Bengal	26.29	89.46	96.1 Hasimara (8)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	39.80	40.41	41.46	2000	Wireless	Conventional	

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170	Mathabhanga	Jaldhaka/ Brahmaputra	Mathabhanga/ Coochbehar/ West Bengal	26.32	89.23	95.1 N H 31 (6)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	47.70	48.20	49.85	2007	Wireless	Conventional	
171	Domohani Road Bridge	Teesta/Brahmaputra	Jalpaiguri/ Jalpaiguri/ West Bengal	26.56	88.77	98.1 Tista Bazaar (8) 98.2 Ghista (4-6) 98.3 Chel (4-6) 98.4 Nebra (6)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	85.65	85.95	89.30	1968	Wireless	Conventional	
172	Mekhligunj	Teesta/Brahmaputra	Mekhligunj/ Coochbehar/ West Bengal	26.33	88.85	99.1 Domohani Rd Brdige (6)	LBD/SICG/TBO	Sub Himalayan West Bengal & Sikkim	65.45	65.95	66.45	1996	Wireless	Conventional	
173	Teesta III HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.53	88.53		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim	1585.00						
174	Rangit-III HEP Dam	Teesta/Brahmaputra	Gyalshing/West Sikkim/Sikkim	27.29	88.29		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim							
175	Teesta V HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.25	88.45		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim	579						
176	Singtam	Teesta/Brahmaputra	East Sikkim/ Sikkim	27	88.49		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim	377.07	377.57	379.17				
177	Rangpo Dam	Rongpo/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.7		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim							
178	Rongli Dam	Rongli/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.2	88.71		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim							
179	Melli Bazar	Teesta/Brahmaputra	South Sikkim/Sikkim	27.09	88.45		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim	223	224	225.25				
180	Jorethang	Teesta/Brahmaputra	South Sikkim/Sikkim	27.17	88.29		SID/IC Gangtak/TBO Kol	Sub Himalayan West Bengal & Sikkim	350.6	351.6	353.2				
181	Annapurnaghat (Silchar)	Barak/ Barak	Silchar/Silchar/ Assam	24.83	92.80	101.1 Chottabekra (18)	MBD/HOCG/ BBBO	Assam and Meghalaya	18.83	19.83	21.84	1989	Wireless	Conventional	
182	Matizuri	Katakhal/Barak	Hailakhandi/ Hailakhandi/ Assam	24.85	92.61	102.1 Gharmura (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	19.27	20.27	22.73	2007	Wireless	Conventional	
183	Badarpurghat	Barak/Barak	Silchar/Cachar/ Assam	24.86	92.52	102. 1 Annapurnaghat (9)	MBD/HOCG/ BBBO	Assam and Meghalaya	15.85	16.85	18.48	2007	Wireless	Conventional	

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184	Karimgunj	Kushiyara/Barak	Karimgunj/Karimgunj/Assam	24.87	92.36	103.1 Annapurnaghat (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	13.94	14.94	16.57	2010	Wireless	Conventional	
185	Kailashshar	Manu	Kailashshar/ North Tripura Tripura	24.32	91.99	104.1 Manughat (18-24)	MBD/HOCG/ BBBO	NMMT	24.34	25.34	25.79	1993	Wirless	Conventional	
186	Sonamura	Gumti	Sonamura/ West Tripura/ Tripura	23.47	91.27	105.1 Amarpur (15-21)	MBD/HOCG/ BBBO	NMMT	11.50	12.50	14.42	1993	Wireless	Conventional	
187	Getlasud Dam	Subarnarekha/ Subarnarekha	Ranchi/Jharkhand	23.45	85.55		ERD/HOCB/ MERO		590.24						
188	Chandil Dam	Subarnarekha/ Subarnarekha	Musabani/Purba singbhum/ Jharkhand	22.97	86.05		ERD/HOCB/ MERO	Jharkhand	FRL-192					Rainfall Runoff Model	
189	Galudih Barrage	Subarnarekha/ Subarnarekha	SaraikelaKhara/Jharkhand	22.64	86.39		ERD/HOCB/ MERO		FRL-94.50						
190	Jamshedpur	Subarnarekha/ East Flowing Rivers	Chakulia/Purba singbhum/ Jharkhand	22.82	86.21	115. 1 Adtiyapur (6-8)	ERD/HOCB/ MERO	Jharkhand	122.50	123.50	129.82	1973	Wireless/ Telemetry	Conventional	
191	Rajghat	Subarnarekha/ East Flowing Rivers	Jaleswar/Balasore/ Odisha	21.77	87.16	110.1 Jamsaloghat (18-20) 110.2 Fekoghat (6-9)	ERD/HOCB/ MERO	Odisha	9.45	10.36	12.69	2008	Wireless/ Telemetry	Conventional	
192	Mathani Road Bridge	Subarnarekha/ East Flowing Rivers	Baleshwar/Odisha	21.66	87.06		ERD/HOCB/ MERO	Odisha	5.00	5.50	6.80				
193	N H 5 Road Bridge	Burhabalang/ East Flowing Rivers	Govindpur/ Balasore/ Odisha	21.55	86.92	111.1 Baripada (18-20) 111.2 Jayapur (16-18)	ERD/HOCB/ MERO	Odisha	7.21	8.13	9.50	1973	Wireless	Conventional	
194	Salandi Dam	Baitarani/Brahmani-Baitarani	Kendujhar/Odisha	21.28	86.30		ERD/HOCB/ MERO		82.30						
195	Anandpur	Baitrani/East Flowing Rivers	Anandpur/ Keonjargarh/ Odisha	21.22	86.11	112.1 Swampatna (6-7)	ERD/HOCB/ MERO	Odisha	37.44	38.36	41.35	2011	Wireless/ Telemetry	Conventional/ Mathematical	

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196	Akhuapada	Baitrani/East Flowing Rivers	Akhuapada/ Bhadrak/ Odisha	20.92	86.28	113.1 Anandpur (18-20)	ERD/HOCB/ MERO	Odisha	17.83	17.83	21.56	1960	Wireless/ Telemetry	Conventional	
197	Rengali Dam	Brahmani/Brahmani-Baitarani	Angul/Odisha	21.28	85.03		ERD/HOC/MERO Bhubaneshwar		FRL-123.5						
198	Jenapur Expressway	Brahmani/East Flowing Rivers	Jenapur/Jajpur/ odisha	20.88	86.01	114.1 Talcher (18-20)	ERD/HOCB/ MERO	Odisha	22.00	23.00	24.78	1975	Wireless/ Telemetry	Conventional	
199	Ravi Shankar Dam	Mahanadi/ Mahanadi	Dhamtari/Chattisgarh	20.61	81.56		MD/HOCB/MERO		FRL-248.70						
200	Bango Dam	Hasdeo/ Mahanadi	Korba/Chattisgarh	22.59	82.57		MD/HOCB/MERO		FRL-359.66						
201	Hirakud	Mahanadi/ Mahanadi	Burla/ Sambalpur/ Odisha	21.52	83.85	158.1 Basantpur (24) 158.2 Kurubata (24) 158.3 Sundergarh (24) 158.4 Kelo (6-18) 158.5 Paramapur (4-18)	MahanadiDiv/HOCB/MERO	Odisha	192.02		192.30	1978	Wireless/ Telemetry	Conventional/ Mathematical	
202	Naraj	Mahanadi/ Mahanadi	Cuttack/ Cuttack/Odisha	20.47	85.77	115.1 Tikarapara (18-20)	ERD/HOCB/ MERO	Odisha	25.41	26.41	27.61	1982	Wireless	Conventional/ Mathematical	
203	Alipingal	Devi/Mahanadi	Alipingal/Jagitsinghpur/ Odisha	20.07	86.17	116.1 Naraj (12)	ERD/HOCB/ MERO	Odisha	10.85	11.76	13.11	2011	Wireless/ Telemetry	Conventional	
204	Nimapara	Kushbhadra/ Mahanadi	Nimapara/Puri/ Odisha	20.06	86.01	117.1 Naraj (12)	ERD/HOCB/ MERO	Odisha	9.85	10.76	11.60	1982	Wireless/ Telemetry	Conventional	
205	Purushottampur	Rishikulya/ East Flowing Rivers	Purushottampur/ Ganjam/ Odisha	19.50	84.87	118.1 Sorada (18-20)	ERD/HOCB/ MERO	Odisha	15.83	16.83	19.65	1990	Wireless/ Telemetry	Conventional	
206	Gunupur	Vamshadara/East Flowing Rivers	Gunupur/Koraput/ Odisha	19.08	83.81	119.1 Kutragada (03-06)	ERD/HOCB/ MERO	Odisha	83.00	84.00	88.75	1980	Wireless/ Telemetry	Conventional	
207	Kashinagar	Vamshadara/East Flowing Rivers	Kashinagar/Ganjam/ Odisha	18.85	83.87	120.1 Kutragada (06-09)	ERD/HOCB/ MERO	Odisha	53.60	54.60	58.93	1980	Wireless/ Telemetry	Conventional/ Mathematical	

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208	Gotta Barrage	Vamsadhara/ East Flowing Rivers	Gotta Barrage/ Srikakulam/ Andhra Pradesh	18.69	83.96	159.1 Kutragada (12)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	34.84		39.92	1999	Wireless/ Telemetry	Conventional	
209	Thotapalli Resvr system	Nagavali/ East Flowing River Basin	Parvathipuram/Vizianagaram/ Andhra Pradesh	18.78	83.49		ERD/HOCB/ MERO		FRL-105.00					Rainfall Runoff Model	
210	Madduvalasa Reservoir	Nagavali/ East Flowing River Basin	Vizianagaram/Andhra Pradesh	18.63	83.22		ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL-65.00						
211	Narayanpuram Anicut	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.48	83.8		ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL - 32.77						
212	Srikakulam	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.31	83.88		ERD/HOCB/ MERO	Coastal Andhra Pradesh	10.17	10.8	14.53	12-05-90			
213	Dantiwada Dam	Banas/ West Flowing Rivers	Dantiwada dam/Palanpur/ Banaskanta/ Gujarat	24.34	72.34	160.1 Sarotry (2-5) 160.2 Chitrasani (2-5)	MD/HOCG/ NTBO	Gujarat	182.88	185.06	186.04	1973	Wireless/ Telemetry	Conventional	
214	Abu Road	Banas	Sirohi/Rajasthan	24.49	72.79		MD Gandhinagar/HOC/NTBO Gandhinagar		258.00	259.00	265.40	1973			
215	Dharoi Dam	Sabarmati/ West Flowing Rivers	Dharoi Dam/ Mehsana/ Gujarat	24.00	72.86	161.1 Kheroj (2-5) 161.2 Harnav Weir (2-5)	MD/HOCG/ NTBO	Gujarat	187.45	192.25	189.63	1990	Wireless/ Telemetry	Conventional	
216	Subash Bridge (Ahmedabad)	Sabarmati/ West Flowing Rivers	Ahmedabad/Ahmedabad/ Gujarat	23.06	72.59	125.1 Derol Bridge (04-06) 125.2 Hatmati Weir (04-06)	MD/HOCG/ NTBO	Gujarat	44.09	45.34	47.45	2006	Wireless/ Telemetry	Conventional	
217	Mahi Bajajsagar Dam	Mahi/Mahi	Banswara/Rajasthan	23.62	74.54		MD Gandhinagar/HOC/NTBO Gandhinagar		FRL-281.5						
218	Som Kamla Amba Dam	Som/Mahi	Dungarpur/Rajasthan	23.97	74.03		MD Gandhinagar/HOC/NTBO Gandhinagar		FRL-212.5						
219	Kadana Dam	Mahi/ West Flowing Rivers	Kadana Dam/ Panchmahal/ Gujarat	23.31	73.83	162.1 Paderdibadi (2-7) 162.2 Anas PH -II (2-7)	MD/HOCG/ NTBO	Gujarat	126.19	127.71	127.74	1989	Wireless/ Telemetry	Conventional	
220	Panam Dam	Panam/Mahi	Kalol/Panchmahal/Gujrat	23.05	73.71		MD Gandhinagar/HOC/NTBO Gandhinagar		FRL-121.41						
221	Wanakbori Weir	Mahi/ West Flowing River	Wanakbori/Kheda	22.74	72.69	126.1 Kadana Dam (06) 126.2 Panam Dam (06)	MD/HOCG/ NTBO	Gujarat	71.00	72.54	76.10	2006	Wireless/ Telemetry	Conventional	
222	Mandla	Narmada/ Narmada	Mandla/Mandla/ Madhya Pradesh	23.77	85.56	121.1 Dindori (11) 121.2 Mohgaon (04) 121.3 Mukki (12)	ND/SECB/ NBO	East Madhya Pradesh	437.20	437.80	439.41	1974	Wireless	Conventional	
223	Barna Dam	Narmada/ Narmada	Raisen/Madhya Pradesh	23.05	78.06		ND/SECB/ NBO		348.55						
224	Bargi Dam	Narmada/ Narmada	Jabalpur/Madhya Pradesh	22.94	79.92		ND/SECB/ NBO		422.76						

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225	Tawa Dam	Narmada/ Narmada	Hoshangabad/ Madhya Pradesh	22.56	77.97		ND/SECB/ NBO		355.39						
226	Hoshangabad	Narmada/ Narmada	Hoshangabad/ Hoshangabad/ Madhya Pradesh	22.76	77.69	122.1 Barman(22) 122.2 Tawanagar (08)	ND/SECB/ NBO	West Madhya Pradesh	292.83	293.83	300.90	1973	Wireless	Conventional	
227	Indirasagar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.28	76.47		ND/SECB/ NBO		262.13						
228	Omkareshwar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.24	76.16		ND/SECB/ NBO		201.16						
229	Sardar Sarovar Dam	Narmada/ Narmada	Ahmedabad/ Gujarat	21.82	73.74		TD/HOCG/ NTBO		138.38						
230	Garudeshwar	Narmada/ Narmada	Garudeshwar/ Bharuch/Gujarat	21.89	73.65	123.1 Sardar sarovar dam (12)	TD/HOCG/ NTBO	Gujarat	30.48	31.09	41.65	1970	Wireless/ Telemetry	Conventional	
231	Bharuch	Narmada/ Narmada	Bharuch/Bharuch/ Gujarat	21.70	73.00	124.1 Garudeshwar (12)	TD/HOCG/ NTBO	Gujarat	6.71	7.31	12.65	1970	Wireless/ Telemetry	Conventional	
232	Hathnur Dam	Tapi/ Tapi	Hathnur Dam/ Jalgaon/ Maharashtra	21.07	75.95	163.1 Burhanpur (12) 163.2 Yerli (12)	TD/HOCG/ NTBO	Marathwada	212.02	214.00	214.00	1989	Wireless/ Telemetry	Conventional	
233	Ukai Dam	Tapi/ Tapi	Ukai Dam/ Surat/ Gujarat	21.25	73.59	164.1 Gidadhe (6) 164.2 Sarangkheda (6)	TD/HOCG/ NTBO	Gujarat	102.41	105.16	105.51	1990	Wireless/ Telemetry	Conventional	
234	Surat	Tapi/ Tapi	Surat/Surat/Gujarat	21.20	72.82	127.1 Hatnur Dam (24)	TD/HOCG/ NTBO	Gujarat	8.50	9.50	12.50	2006	Wireless/ Telemetry	Conventional	
235	Madhuban Dam	Damanganga/ West Flowing River	Madhuban Dam/ Valsad/ Gujarat	20.19	73.06	165.1 Ozarkheda (6) 165.2 Nanipalsan (6)	TD/HOCG/ NTBO	Gujarat	79.86	82.40	80.60	1993	Wireless/ Telemetry	Conventional	
236	Vapi Town	Damanganga/ West Flowing Rivers	Vapi Town/ Valsad/Gujarat	20.37	72.88	128.1 Madhuban Dam (03-06)	TD/HOCG/ NTBO	Gujarat	18.20	19.20	23.76	1976	Wireless/ Telemetry	Conventional	

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237	Daman	Damanganga/ West Flowing Rivers	Daman/Daman/Diu	20.41	72.84	129.1 Madhuban Dam (05-09)	TD/HOCG/ NTBO	Gujarat	2.60	3.40	4.00	2004	Wireless/ Telemetry	Conventional	
238	Nasik	Godavari/ Godavari	Nasik/Maharashtra	20.08	73.75		UGD/GC/KGBO		558.10	559.60	563.01	2016			
239	NMD Weir	Godavari/ Godavari	Nasik/Maharashtra	19.45	74.33		UGD/GC/KGBO		533.50						
240	Kopergaon	Godavari/ Godavari	Kopergaon/Ahmednagar/Maharashtra	19.89	74.49	130.1 N M Weir (05-06)	LGD/GC/ KGBO	Marathwada	490.90	493.68	499.17	1969	Wireless/ Telemetry	Conventional	
241	Mula Dam	Mula/Godavari	Ahmadnagar/Maharashtra	19.35	74.60		UGD/GC/KGBO		552.30						
242	Jaikwadi Dam	Godavari/Godavari	Paithan/ Aurangabad/ Maharashtra	19.48	75.37	166.1 N M Weir (12)	LGD/GC/ KGBO	Marathwada	463.91	465.58	464.69	1990	Wireless	Conventional	
243	Manjlegaon Dam	Sindhpana/ Godavari	Beed / Maharashtra	19.15	76.18		UGD/GC/KGBO		431.80						
244	Gangakhed	Godavari/ Godavari	Gangakhed/Parbhani/Maharashtra	18.98	76.75	131.1 Dhalegaon (15-18)	LGD/GC/ KGBO	Marathwada	374.00	375.00	377.57	1947	Wireless/ Telemetry	Conventional	
245	Yeldari Barrage	Puma/Godavari	Patbhani/Maharashtra	19.71	76.75		UGD/GC/KGBO		461.77						
246	Nanded	Godavari/ Godavari	Nanded/Nanded/ Maharastra	19.15	77.31	132.1 Dhalegaon (24-27) 132.2 Purna (03-06)	LGD/GC/ KGBO	Marathwada	353.00	354.00	357.10	2006	Wireless/ Telemetry	Conventional	
247	Karanja Dam	Karanja/Godavari	Bidar/Karnataka	17.88	77.31		UGD/GC/KGBO		584.15						
248	Singur Dam	Manjira/ Godavari	Singur Dam/ Medak/ Andhra Pradesh	17.75	77.93	167.1 Saigaon (24)	LGD/GC/ KGBO	Telangana	523.60	523.60	523.60	1999	Wireless	Conventional	
249	Nizamsagar Dam	Manjira/ Godavari	Nizamsagar dam/ Nizamabad/ Andhra Pradesh	18.22	77.96	168.1 Singur Dam (24)	LGD/GC/ KGBO	Telangana	428.24	428.24	428.24	1999	Wireless	Conventional	
250	Sriramsagar	Godavari/Godavari	Pochampad/ Nizamabad/ Andhra Pradesh	18.97	78.34	169.1 Nanded (24) 169.2 Nizamsagar (24) 169.3 Degloor (24)	LGD/GC/ KGBO	Telangana	332.54	333.15	332.72	1990	Wireless	Conventional	
251	Kaddam Dam	Godavari/Godavari	Kaddam/Adilabad/Telenga na	19.1	78.79		UGD/GC/KGBO		FRL-213.21					Rainfall Runoff Model	
252	Sripada Yellampalli project.	Godavari/Godavari	Karimnagar/ Telengana	18.84	79.36		UGD/GC/KGBO		FRL-148					Rainfall Runoff Model	
253	Upper Wainganga Project	Wainganga/ Godavari	Balaghat/Madhya Pradesh	22.37	79.66		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-519.38						

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254	Totladoh Project	Pench	Nagpur/Madhya Pradesh	21.65	79.23		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-490.00						
255	Bhandara	Wainganga/ Godavari	Bhandara/Bhandara/Maharashtra	21.15	79.66	133.1 Balaghat (15-18) 133.2 Rajegaon (15-18) 133.3 Sitakesa (15-18)	LGD/GC/ KGBO	Vidharbha	244.00	244.50	250.90	2005	Wireless/ Telemetry	Conventional	
256	Gosikhurd Dam	Godavari/Godavari	Pauni/Bhandara/ Maharashtra	20.87	79.6		WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	FRL-245.50					Rainfall Runoff Model	
257	Pauni	Wainganga/ Godavari	Pauni/Bhandara/ Maharashtra	20.79	79.65	134.1 Bhandara (06-09) 134.2 K R Bridge (06)	LGD/GC/ KGBO	Vidharbha	226.73	227.73	232.35	1994	Wireless/ Telemetry	Conventional	
258	Upper Wardha Project	Wardha/Godavari	Amaravati/Maharashtra	21.27	78.05		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-342.50						
259	Issapur/Upper Penganga	Penganga	Hingoli/Maharashtra	19.71	77.45		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-441.00						
260	Balharsha	Wardha/Godavari	Balharsha/Chandrapur/ Maharashtra	19.82	79.37	135.1 Hivra (24-30) 135.2 Nandgaon (24) 135.3 Ghugus (12) 135.4 P G Bridge (12-15)	LGD/GC/ KGBO	Vidharbha	171.50	174.00	176.00	1986	Wireless/ Telemetry	Conventional	
261	Sirpur Town	Godavari/Godavari	Kumaram Bheem/ Maharashtra	19.56	79.61		WD Nagpur/CC Nagpur/ MCO Nagpur		159.95	160.95	161.95				
262	Kaleswaram	Godavari/ Godavari	Kaleswaram/Karimnagar/ Andhra Pradesh	18.82	79.91	136.1 Ashti (12) 136.2 Balharsha (12-15) 136.3 Mancherial (12)	LGD/GC/ KGBO	Telangana	103.50	104.75	107.05	1986	Wireless/ Telemetry	Conventional	
263	Upper Indravati Project	Indravathi/ Godavari	Kalahandi/Odisha	19.27	82.82		LGD/GC/ KGBO		FRL-642.00						

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											(m)	Year			
264	Jagdalpur	Indravathi/ Godavari	Jagdalpur/ Bastar/ Chhatisgarh	19.09	82.03	137.1 Nowrangpur (06-24) 137.2 Kosagumda (06-24)	LGD/GC/ KGBO	Chhatisgarh	539.50	540.80	544.68	1973	Wireless/ Telemetry	Conventional	
265	Eturunagaram	Godavari/ Godavari	Eturunagaram/ Warangal/ Andhra Pradesh	18.32	80.46	138.1 Kaleswaram (12) 138.2 Pathagudem (09) 138.3 Perur (03)	LGD/GC/ KGBO	Telangana	73.29	75.79	77.66	1990	Wireless/ Telemetry	Conventional	
266	Dummagudem	Godavari/ Godavari	Dummagudem/ Khammam/ Andhra Pradesh	17.85	80.88	139.1 Perur (12-15) 139.2 Taliperu dam (06)	LGD/GC/ KGBO	Telangana	53.00	55.00	60.25	1986	Wireless/ Telemetry	Conventional	
267	Bhadrachalam	Godavari/ Godavari	Bhadrachalam/ Khammam/ Andhra Pradesh	17.67	80.88	140.1 Perur (15-18) 140.2 Taliperu dam (09)	LGD/GC/ KGBO	Telangana	45.72	48.77	55.66	1986	Wireless/ Telemetry	Conventional	
268	Kolab Project	Kolab/Godavari	Koraput/Odisha	18.78	82.60		LGD/GC/ KGBO		FRL-858.00						
269	Machkund Project	Machkund	Koraput/Odisha	18.45	82.54		LGD/GC/ KGBO		FRL-838.20						
270	Balimela Project	Balimela	Malkangiri/Odisha	18.30	82.25		LGD/GC/ KGBO		FRL-462.07						
271	Chinturu	Sabri/Godavari	East Godavari/Andhra Pradesh	17.74	81.39		LGD/GC/ KGBO		41.50	43.50	40.45	2018			
272	Kunavaram	Godavari/ Godavari	Kunavaram/ Khammam/ Andhra Pradesh	17.57	81.25	141.1 Perur (24-27) 141.2 Taliperu (15-18) 141.3 Konta (06)	LGD/GC/ KGBO	Telangana	37.74	39.24	51.30	1986	Wireless	Conventional	
273	Rajahmundry GNV Railway Bridge	Godavari/ Godavari	Rajahmundry/ East Godavari/ Andhra Pradesh	17.01	81.77	142.1 Koida (12)	LGD/GC/ KGBO	Coastal Andhra Pradesh	17.68	19.51	20.48	1986	Wireless/ Telemetry	Conventional	
274	Dowlaiswaram Barrage	Godavari/ Godavari	Dowlaiswaram/ East Godavari/ Andhra Pradesh	16.94	81.78	143.1 Koida (15)	LGD/GC/ KGBO	Coastal Andhra Pradesh	14.25	16.08	18.36	1986	Wireless/ Telemetry	Conventional	
275	Atreyapuram	Godavari/Godavari	Atreyapuram/East Godavari/Andhra Pradesh	16.81	81.81		LGD Hyd/GC/KGBO	Coastal Andhra Pradesh	14	15.5	18.36	22-08-18			
276	Koyna Dam	Koyna	Satara/Maharashtra	17.4	73.75		UKD/KCC/KGBO		FRL-659.43						
277	Warana Dam	Warana	Kolhapur/Maharashtra	17.13	73.85		UKD/KCC/KGBO		FRL-626.90						
278	Arjunwad	Krishna/Krishna	Arjunwad/ Kolhapur/ Maharashtra	16.78	74.63	144.1 Karad (24) 144.2 Samdoli (21)	LKD/KCC/ KGBO	Madhya Maharashtra	542.07	543.29	543.69	2005			Not in Operation. State Government is

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											(m)	Year			
279	Hippargi Barrage	Krishna/Krishna	Bagalkot/Karnataka	16.55	75.16		UKD/KCC/KGBO		FRL-531.40						
280	Hidkal Dam	Ghatprabha/Krishna	Belagavi/Karnataka	16.14	74.64		CD Bang/MSO		FRL-662.94						
281	Almatti Dam	Krishna/ krishna	Almatti Dam/Bijapur/ Karnataka	16.33	75.88	170.1 Kurundwad (48) 170.2 Sadalga (48) 170.3 Gokak (27)	LKD/KCC/ KGBO	North Interior Karnataka	519.60	519.60	519.60	2002	Wireless	Conventional	
282	Malaprabha Dam	Malaprabha	Belgum/Karnataka	15.82	75.09		CD Bang/MSO		FRL-633.83						
283	Narayanpur Dam	Krishna/ krishna	Narayanpur Dam/ Gulbarga/ Karnataka	16.20	76.36	171.1 Kurundwad (54) 171.2 Sadalga (54) 171.3 Gokak (35) 171.4 Almatti Dam (09)	LKD/KCC/ KGBO	North Interior Karnataka	492.25	492.25	492.22	2008	Wireless	Conventional	
284	Veer Dam	Nira/Krishna	Pune/Maharashtra	18.12	74.09		UKD/KCC/KGBO		FRL-579.85						
285	Ujni Dam	Bhima/ Krishna	Solapur/Maharashtra	18.21	74.97		UKD/KCC/KGBO		FRL-497.33						
286	Deongaon Bridge	Bhima/ Krishna	Afzalpur/ Gulbarga/ Karnataka	17.17	76.33	145.1 Takli (18) 145.2 Wadakbal (18)	LKD/KCC/ KGBO	North Interior Karnataka	402.00	404.50	407.34	2006	Wireless/ Telemetry	Conventional	
287	Priyadharshini Jurala Project	Krishna/ krishna	Gadwal/ Mahbubnagar/ Andhra Pradesh	16.33	77.70	172.1 Huvinhedgi (18) 172.2 Yadgir (18) 172.3 Deosugur (06)	LKD/KCC/ KGBO	Telangana	318.52	318.52	318.50	2012	Wireless	Conventional	
288	Upper Tunga	Tungabhadra/ Krishna	Shimoga/Krishna	13.84	75.52		CD Bangluru/C&SRC/ C&SRO Coimbtore	South interior Karnataka, Shimoga	FRL-588.24						
289	Bhadra Dam	Tungabhadra/ Krishna	Tarikere/Chikmagalur/Karnataka	13.7	75.63		CD Bangluru/C&SRC/ C&SRO Coimbtore	Coastal Karnataka, Lakkavalli	FRL-657.75						
290	Tungabhadra Dam	Tungabhadra/ Krishna	Hospet/ Bellary/ Karnataka	15.26	76.34	173.1 Harlahalli (12) 173.2 Marol (12)	LKD/KCC/ KGBO	South Interior Karnataka	497.74	497.74	497.74	1994	Wireless	Conventional	
291	Singatlur Barrage	Krishna/Krishna	Gadag/Karnataka	15.03	75.83		LKD/KCC/ KGBO		FRL-507.00						
292	Mantralayam	Tungabhadra	Mantralayam/ Kurnool/ Andhra Pradesh	15.94	77.42	146.1 Ollenur (18) 146.2 T Ramapuram (18)	LKD/KCC/ KGBO	Rayalaseema	310.00	312.00	318.77	2009	Wireless/ Telemetry	Conventional	
293	Sunkesula Barrage	Krishna/Krishna	C.Belagal/Kurnool/ Andhra Pradesh	15.88	77.82		LKD/KCC/ KGBO	Rayalaseema	FRL-292.00					Rainfall Runoff Model	
294	Kurnool	Tungabhadra/ Krishna	Kurnool/Kurnool/ Andhra Pradesh	15.82	78.03		LKD/KCC/ KGBO		276	278	285.225	02.10.09			
295	Srisailam Dam	Krishna/ krishna	Srisailam/ Kurnool/ Andhra Pradesh	16.08	78.90	174.1 Mantralayam (18) 174.2 Krishna Agraharam (18)	LKD/KCC/ KGBO	Rayalaseema	269.75	269.75	273.25	2009	Wireless	Conventional	
296	Musi Dam	Musi/Krishna	Nalgonda/Telengana	14.06	79.52		LKD/KCC/ KGBO		FRL-196.60						
297	Dr KLRS Pulichintala Dam	Krishna/Krishna	Bellamkonda/Guntur/Andhra Pradesh	16.75	80.05		LKD/KCC/ KGBO	Coastal Andhra Pradesh	FRL-53.34					Rainfall Runoff Model	

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											(m)	Year			
298	Prakasam Barrage	Krishna/ krishna	Vijayawada/ Krishna/ Andhra Pradesh	16.50	80.60	175.1 Wadenapalli (16) 175.2 Madhira (12) 175.3 Polampally (12) 175.4 Paleru Bridge (12) 175.5 Keesara (12)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	18.30		21.50	1903	Wireless	Conventional	
299	Avanigadda	Krishna/ krishna	Krishna/Andhra Pradesh	16.02	80.91		LKD/KCC/ KGBO		9.00	11.00	11.87	2009			
300	Somasila Dam	Pennar/Pennar	Ozili//Nellore/ Andhra Pradesh	14.48	79.3		HD/ C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-100.58					Rainfall Runoff Model	
301	Nellore Anicut	North Pennar	Nellore/ Nellore/ Andhra Pradesh	14.47	79.99	147.1 Chennur (18) 147.2 Nandipally (18) 147.3 Somasila Project (09)	HD/SR	Coastal Andhra Pradesh	15.91	17.28	18.70	1882	Wireless	Conventional	
302	Poondi Satyamurthy Dam	Kosasthalaiyar/ EFRB Pennar-Cauvery	Thiruvallur/ Tamilnadu	13.18	79.86		HD / C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-42.67					Rainfall Runoff Model	
303	Chembarampakkam	Adyar/EFRB Pennar Cauvery	Chenglepet/Kancheepuram /Tamilnadu	13.01	80.08		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry							
304	Sathnur Dam	Ponnaiyar/ EFRB Pennar-Cauvery	Chengam/Thiruvannamalai /Tamilnadu	12.2	78.59		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	FRL-222.2						
305	Gomukhi	Vellar/EFRB Pennar Cauvery	Kallakurichi/Villupuram/Tamilnadu	11.8	78.81		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore								
306	Wellington Dam	Vellar/EFRB Pennar Cauvery	Thittakudi/Cuddalore/Tamilnadu	11.4	79.09		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-72.54						
307	Harangi Dam	Cauvery/Cauvery	Somwarpet/ Kodagu/ Karnataka	12.49	75.9		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-871.42					Rainfall Runoff Model	
308	Hemavathy Dam	Cauvery/Cauvery	Channaryapatra/Hassan/Karnataka	12.82	76.05		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-890.63					Rainfall Runoff Model	
309	Kabini Dam	Cauvery/Cauvery	Heggadevanakote/Mysore/ Karnataka	11.84	76.33		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-696.16					Rainfall Runoff Model	

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											(m)	Year			
310	Krishnaraj sagar	Cauvery/Cauvery	Srirangapatna/Mandya/Karnataka	12.45	76.57		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-752.49					Rainfall Runoff Model	
311	Mettur Dam	Cauvery/Cauvery	Mettur/Salem/Tamilnadu	11.8	77.8		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-					Rainfall Runoff Model	
312	Bhawanisagar Dam	Bhavani/Cauvery	Sathyamangalam/Erode/Tamilnadu	11.47	77.1		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-280.42					Rainfall Runoff Model	
313	Savandapur	Bhavani/Cauvery	Gobichettipalayam/Tamilnadu	11.52	77.51		SRD Coim/C&SRC Bang/C & SRO Coimb		184.5	185.5	186.88	05-11-78			
314	Kodumudi	Cauvery/Cauvery	Erode/Erode/Tamilnadu	11.08	77.89		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	125.5	126.5	127.83	25-10-05			
315	Kodaganar Dam	Kodaganar/Cauvery	Dindugul/Tamilnadu	10.59	77.97		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	FRL-200.25						
316	Musiri	Cauvery/Cauvery	Musiri/Tiruchirapalli/Tamilnadu	10.93	78.43		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	82.11	83.11	86.18	13-11-77			
317	Upper Anicut	Cauvery/Cauvery	Thiruchirapalli/ Tamilnadu	10.88	78.57		SRD Coim/C&SRC Bang/C & SRO Coimb		FRL-75.05						
318	Grand Annicut	Cauvery/Cauvery	Thanjavur/ Tamilnadu	10.83	78.81		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-240.80					Rainfall Runoff Model	
319	Vaigai Dam	Vaigai/EFR South of Cauvery	Andipatti/ Theni/ Tamilnadu	10.5	77.33		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-279.2					Rainfall Runoff Model	
320	Madurai	Vaigai/EFR South of Cauvery	Madurai/Tamilnadu	9.93	78.11		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	131.5	132.5	134.76	1997			
321	Kumbidi	Bharathapuzha/WFR Tapi to Tadri	Palakkad/Kerala	10.85	76.02		SWRD/CSRO		8	9	9.76	2018			
322	Idduki Dam	Periyar/WFR Tadri to Kanyakumari	Idduki/Kerala	9.84	76.97		SWRD/CSRO		FRL-732.62						
323	Edamalayar Dam	Edamalayar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.22	76.7		SWRD/CSRO		FRL-169.00						
324	Neeleswaram	Periyar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.18	76.49		SWRD/CSRO		9	10	12.4	2018			
325	Malakkara	Pamba/WFR Tadri to Kanyakumari	Pathanamthitta	9.43	76.65		SWRD/CSRO		6	7	9.31	2018			
326	Polavaram	Godavari/Godavari	West Godavari/ Andhra Pradesh	17.25	81.64		LGD Hyd/GC/KGBO								
327	Laxmi Barrage	Godavari/Godavari	Bhupalpally/Telangana	18.7	80.08		UGD/GC/KGBO		10000						
328	Dholpur	Chambal/Ganga	Dholpur / Rajasthan	26.65	77.9		LYD Agra/YBO		129.79	130.79	145.54	23-08-96			

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
	1. Indus Basin											
1	Jhelum	Sangam	Jammu & Kashmir	1590.30	1592.00	1595.00	06-09-14	1590.02	28/08/2020 07	0	0	-
2	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.53	1586.45	1588.99	08-09-14	1585.02	28/08/2020 16	0	0	-
3	Jhelum	Safapora	Jammu & Kashmir	1580.00	1580.80	1582.10	09-09-14	1579..61	29/08/2020 03	0	0	-
	2 a. Ganga Basin											
4	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	537.90	17-06-13	536.1	11/08/2020 06	7	6	85.71
5	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.92	2015	801.1	11/08/2020 06	0	0	-
6	Ganga	Rishikesh	Uttarakhand	339.50	340.50	341.72	05-09-95	339.7	11/08/2020 14	1	1	100.00
7	Ganga	Haridwar	Uttarakhand	293.00	294.00	296.30	19-09-10	293.72	11/08/2020 15	7	7	100.00
8	Ganga	Garhmuktheswar	Uttar Pradesh	198.30	199.30	199.90	23-09-10	198.89	21/08/2020 03	31	31	100.00
9	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.79	24-09-10	162.71	16/08/2020 03	93	92	98.92
10	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	138.14	26-09-10	137.56	27/08/2020 01	34	34	100.00
11	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	192.88	21-09-10	190.45	24/08/2020 18	28	27	96.43
12	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	162.88	06-08-78	159.98	29/08/2020 04	0	0	-
13	Ganga	Dabri	Uttar Pradesh	136.30	137.30	139.70	28-09-83	136.7	31/08/2020 08	11	11	100.00
14	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	126.78	27-09-10	125.05	21/08/2020 03	3	3	100.00
15	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	124.49	28-09-10	123.45	21/08/2020 13	17	17	100.00
16	Ganga	Kanpur	Uttar Pradesh	112.00	113.00	114.08	29-09-10	112.12	22/08/2020 14	4	4	100.00
17	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	99.84	03-08-73	98.13	23/08/2020 20	0	0	-
18	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	87.98	08-09-78	81.55	04/09/2020 09	0	0	-
19	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	384.60	05-09-95	380.9	11/08/2020 01	0	0	-
20	Yamuna	Karnal Bridge	Haryana	248.80	249.50	250.07	17-06-13	247.42	26/08/2020 12	0	0	-
21	Yamuna	Mawi	Uttar Pradesh	230.00	230.85	232.75	18-06-13	229.9	27/08/2020 23	0	0	-
22	Sahibi	Dhansa	NCT Delhi	211.44	212.44	213.58	06-08-77	210.7	21/08/2020 08	0	0	-
23	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	207.49	06-09-78	204.41	28/08/2020 16	0	0	-
24	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	169.73	08-09-78	164.94	30/08/2020 23	0	0	-
25	Yamuna	Agra	Uttar Pradesh	151.40	152.40	154.76	09-09-78	149.18	22/08/2020 21	0	0	-
26	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	126.13	11-09-78	118.68	25/08/2020 00	0	0	-
27	Chambal	Dholpur	Rajasthan	129.79	130.79	145.54	23-08-96	134.35	01/09/2020 11	8	7	87.50
28	Chambal	Kota City	Rajasthan	239.00	240.00			240.2	31/08/2020 00	2	2	100.00
29	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	118.19	25-08-96	110.33	02/09/2020 14	0	0	-
30	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.98	25-08-96	105.09	03/09/2020 04	0	0	-
31	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	108.59	12-09-83	100.33	03/09/2020 02	0	0	-
32	Betwa	Mohana	Uttar Pradesh	121.66	122.66	133.35	11-09-83	119.44	30/08/2020 20	0	0	-
33	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	108.67	12-09-83	99.74	03/09/2020 03	0	0	-
34	Ken	Banda	Uttar Pradesh	103.00	104.00	113.29	07-07-05	101.21	30/08/2020 13	0	0	-
35	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	105.16	06-09-78	95.64	03/09/2020 12	0	0	-
36	Yamuna	Naini	Uttar Pradesh	83.74	84.74	87.99	08-09-78	81.4	04/09/2020 09	0	0	-
37	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	88.03	08-09-78	80.69	04/09/2020 09	0	0	-
38	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	80.34	09-09-78	74.18	04/09/2020 16	0	0	-
39	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	73.90	09-09-78	68.69	04/09/2020 23	0	0	-

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
40	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	110.85	10-09-71	105.9	13/08/2020 14	0	0	-
41	SAI	Raibareli	Uttar Pradesh	100.00	101.00	104.81	17-09-82	98.94	07/07/2020 06	0	0	-
42	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	77.74	22-09-71	69.98	19/08/2020 01	0	0	-
43	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	65.22	09-09-78	62.15	05/09/2020 04	2	2	100.00
44	Ganga	Buxar	Bihar	59.32	60.32	62.09	1948	59.1	05/09/2020 07	0	0	-
45	Ganga	Ballia	Uttar Pradesh	56.62	57.62	60.39	25-08-16	58.15	05/09/2020 08	14	14	100.00
46	Ghaghra	Elgin Bridge	Uttar Pradesh	105.07	106.07	107.62	18-08-18	107.15	01/08/2020 08	86	86	100.00
47	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	94.01	11-10-09	93.51	03/08/2020 08	77	77	100.00
48	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	132.37	15-08-14	129.92	22/07/2020 03	0	0	-
49	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	105.54	15-08-17	104.81	11/07/2020 18	42	41	97.62
50	Rapti	Bansi	Uttar Pradesh	83.90	84.90	85.88	20-08-17	84.85	15/07/2020 15	30	30	100.00
51	Rapti	Gorakpur_Birdghat	Uttar Pradesh	73.98	74.98	77.54	23-08-98	76.09	26/07/2020 10	51	51	100.00
52	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	66.00	28-08-98	65.27	05/08/2020 06	96	96	100.00
53	Ghaghra	Darauli	Bihar	59.82	60.82	61.74	29-08-98	61.51	05/08/2020 10	77	77	100.00
54	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	58.01	18-09-83	57.9	06/08/2020 04	61	61	100.00
55	Ghaghra	Chhapra	Bihar	52.68	53.68	54.59	03-09-82	51.14	06/08/2020 06	0	0	-
56	Sone	Inderpuri	Bihar	107.20	108.20	109.60	23-08-75	104.45	21/08/2020 06	0	0	-
57	Sone	Koelwar	Bihar	54.52	55.52	58.88	20-07-71	52.7	22/08/2020 05	0	0	-
58	Sone	Maner	Bihar	51.00	52.00	53.79	10-09-76	51.64	02/09/2020 16	26	26	100.00
59	Ganga	Patna Dighaghat	Bihar	49.45	50.45	52.52	23-08-75	50.05	22/08/2020 17	26	26	100.00
60	Gandak	Khadda	Uttar Pradesh	95.00	96.00	97.50	23-07-02	96.48	25/09/2020 06	184	184	100.00
61	Gandak	Chatia	Bihar	68.15	69.15	70.04	26-07-02	69.38	27/09/2020 05	4	4	100.00
62	Gandak	Dumariaghat	Bihar	61.22	62.22	64.10	17-08-17	64.36	24/07/2020 06	121	120	99.17
63	Gandak	Rewaghat	Bihar	53.41	54.41	55.41	17-09-86	55.46	24/07/2020 23	64	64	100.00
64	Gandak	Hazipur	Bihar	49.32	50.32	50.93	1948	49.14	23/08/2020 04	0	0	-
65	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.52	20-08-16	48.86	22/08/2020 12	58	58	100.00
66	PunPun	Sripalpur	Bihar	49.60	50.60	53.91	18-09-76	51.85	16/08/2020 00	38	38	100.00
67	Ganga	Hathidah	Bihar	40.76	41.76	43.17	21-08-16	42.13	03/09/2020 06	61	61	100.00
68	Ganga	Munger	Bihar	38.33	39.33	40.99	19-09-76	38.69	24/08/2020 07	22	22	100.00
69	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	67.09	30-07-75	64.42	26/07/2020 04	44	44	100.00
70	Burhigandak	Ahirwalia	Bihar	58.62	59.62	61.17	1975	60.25	27/07/2020 06	24	24	100.00
71	Burhi Gandak	Muzaffarpur	Bihar	51.53	52.53	54.29	15-08-87	53.91	30/07/2020 05	55	55	100.00
72	Burhi Gandak	Samastipur	Bihar	45.02	46.02	49.38	15-08-87	48.68	31/07/2020 08	55	55	100.00
73	Burhi Gandak	Rosera	Bihar	41.63	42.63	46.35	16-08-87	46.56	02/08/2020 22	68	65	95.59
74	Burhi Gandak	Khagaria	Bihar	35.58	36.58	39.22	1976	37.88	06/08/2020 01	85	85	100.00
75	Ganga	Bhagalpur	Bihar	32.68	33.68	34.72	26-08-16	33.4	24/08/2020 07	36	36	100.00
76	Ganga	Kahalgaon	Bihar	30.09	31.09	32.87	17-09-03	31.45	22/08/2020 01	90	90	100.00
77	Kosi	Basua	Bihar	46.75	47.75	49.24	13-08-17	47.89	12/07/2020 05	188	188	100.00
78	Bagmati	Dheng Bridge	Bihar	69.10	70.10	73.00	13-08-17	71.62	25/09/2020 13	130	129	99.23
79	Bagmati	Runisaidpur	Bihar	52.73	53.73	58.15	14-08-17	57.32	13/07/2020 06	133	133	100.00
80	Bagmati	Benibad	Bihar	47.68	48.68	50.01	12-07-04	49.89	24/07/2020 12	125	125	100.00
81	Adhwara Group	Kamtaul	Bihar	49.00	50.00	52.99	12-08-87	51.88	01/10/2020 21	66	66	100.00
82	Adhwara Group	Ekmighat	Bihar	45.94	46.94	49.52	12-07-04	49.05	08/08/2020 03	81	80	98.77
83	Bagmati	Hayaghat	Bihar	44.72	45.72	48.96	14-08-87	48.11	08/08/2020 05	73	73	100.00

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
84	Kamla Balan	Jainagar	Bihar	66.75	67.75	71.35	1965	68.82	11/07/2020 20	385	378	98.18
85	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	53.11	14-07-19	52.09	13/07/2020 14	241	240	99.59
86	Adhwara	Sonebarsha	Bihar	80.85	81.85	83.20	03-07-99	81.52	20/07/2020 23	3	3	100.00
87	Kosi	Baltara	Bihar	32.85	33.85	36.40	15-08-87	35.93	26/07/2020 23	122	122	100.00
88	Kosi	Kursela	Bihar	29.00	30.00	32.10	07-09-82	30.49	20/08/2020 06	90	90	100.00
89	Ganga	Sahibgunj	Jharkhand	26.25	27.25	30.91	1998	28.37	24/08/2020 05	90	90	100.00
90	Mahananda	Taibpur	Bihar	65.00	66.00	67.22	1968	66.94	21/07/2020 05	123	119	96.75
91	Mahananda	Dhengraghat	Bihar	34.65	35.65	38.20	14-08-17	36.93	14/07/2020 03	89	88	98.88
92	Mahananda	Jhawa	Bihar	30.40	31.40	34.07	14-08-17	32.63	28/09/2020 12	164	163	99.39
93	Parwan	Araria	Bihar	46.00	47.00	49.40	14-08-17	48.37	28/09/2020 05	185	184	99.46
94	Ganga	Farakka	West Bengal	21.25	22.25	25.14	07-09-98	22.89	22/08/2020 13	187	187	100.00
95	Mayurakshi	Narayanpur	West Bengal	26.99	27.99	29.69	27-09-95	25.25	30/07/2020 00	0	0	-
96	Ajoy	Gheropara	West Bengal	38.42	39.42	43.94	27-09-78	36.32	24/09/2020 12	0	0	-
97	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.60	28-07-17	8.58	07/08/2020 18	0	0	-
98	Kangsabati	Mohanpur	West Bengal	24.73	25.73	29.87	02-09-78	22	22/08/2020 06	0	0	-
	2 b Brahmaputra Basin											
99	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00			273.9	22/07/2020 11	0	0	-
100	siang	Passighat	Arunachal Pradesh	152.96	153.96	157.54	11-06-00	154.29	12/07/2020 03	130	129	99.23
101	Lohit	Dholla Bazaar	Assam	127.27	128.27	130.07	22-09-12	128.02	11/07/2020 00	29	29	100.00
102	Brahmaputra	Dibrugrah	Assam	104.70	105.70	106.48	03-09-98	106.11	11/07/2020 21	118	118	100.00
103	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	146.60	31-08-74	144.73	27/09/2020 15	0	0	-
104	Burhidihing	Naharkatia	Assam	119.40	120.40	122.69	17-06-73	118.82	25/06/2020 21	0	0	-
105	Burhidihing	Khwong	Assam	101.11	102.11	104.16	02-09-15	103.19	27/06/2020 04	47	47	100.00
106	Desang	Nanglamoraghat	Assam	93.46	94.46	96.49	06-09-98	95.44	10/07/02020 01	96	96	100.00
107	Dikhow	Shivsagar	Assam	91.40	92.40	94.23	01-08-18	94.24	22/06/2020 08	102	102	100.00
108	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.37	11-07-91	87.35	12/07/2020 11	144	144	100.00
109	Subansiri	Choldhowaghat	Assam	99.43	100.43	101.31	27-07-72	96.9	30/07/2020 16	0	0	-
110	Ranganadi	N H Crossing Ranganad	Assam	93.81	94.81	95.92	02-07-79	94.38	22/05/2020 15	63	63	100.00
111	Subansiri	Badatighat	Assam	81.53	82.53	86.21	28-07-72	82.72	13/07/2020 01	35	35	100.00
112	Dhansiri (S)	Golaghat	Assam	88.50	89.50	92.45	11-10-86	88.77	30/07/2020 06	5	5	100.00
113	Dhansiri (S)	Numaligarh	Assam	77.42	78.42	80.16	02-08-18	78.78	22/06/2020 03	185	185	100.00
114	Jiabharali	Jiabharali_NTX	Assam	76.00	77.00	78.50	26-07-07	78.14	31/07/2020 11	474	472	99.58
115	Brahmaputra	Tezpur	Assam	64.23	65.23	66.59	27-08-88	66.56	13/07/2020 16	118	118	100.00
116	Kopilli	Kampur	Assam	59.50	60.50	61.79	20-07-04	61.75	28/05/2020 09	50	50	100.00
117	Kopilli	Dharmatul	Assam	55.00	56.00	58.09	21-07-04	57.28	24/07/2020 12	171	170	99.42
118	Brahmaputra	Guwahati	Assam	48.68	49.68	51.46	21-07-04	50.77	14/07/2020 12	71	71	100.00
119	Puthimari	Puthimari _NHX	Assam	50.81	51.81	55.08	31-08-08	54.58	12/07/2020 04	108	107	99.07
120	Pagladiya	Pagladia_NTX	Assam	51.75	52.75	55.45	08-07-04	53.4	31/07/2020 02	127	123	96.85
121	Manas	Mathanguri	Assam	98.10	99.10	100.28	13-10-73	96.65	11/07/2020 23	0	0	-
122	Beki	Beki NHX	Assam	44.10	45.10	46.20	04-08-00	45.96	12/07/2020 07	258	258	100.00
123	Manas	Manas NHX	Assam	47.81	48.42	50.08	15-09-84	49.26	08/09/2020 15	115	113	98.26
124	Brahmaputra	Goalpara	Assam	35.27	36.27	37.43	31-07-54	37.25	15/07/2020 03	81	81	100.00
125	Gaurang	Kokrajhar	Assam	41.85	42.85	43.60	20-08-15	43.26	31/07/2020 15	95	93	97.89

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
126	Brahmaputra	Dhubri	Assam	27.62	28.62	30.37	18-07-19	30.19	15/07/2020 12	240	240	100.00
127	Sankosh	Golakganj	Assam	28.94	29.94	30.95	08-09-07	30.5	12/07/2020 08	162	161	99.38
128	Raidak-I	Tufanganj	West Bengal	34.22	35.30	36.50	12-08-17	35.76	13/07/2020 12	62	56	90.32
129	Jaldhaka	NH-31	West Bengal	80.00	80.90	81.33	28-08-72	80.27	11/07/2020 10	31	30	96.77
130	Torsa	Hasimara	West Bengal	116.30	116.90	118.50	13-07-96	116.2	11/07/2020 16	0	0	-
131	Torsa	Ghughumari	West Bengal	39.80	40.41	41.46	03-08-00	40.35	12/07/2020 00	53	50	94.34
132	Jaldhaka	Mathabhanga	West Bengal	47.70	48.20	49.85	07-09-07	48.57	22/07/2020 14	26	22	84.62
133	Tista	Domohani	West Bengal	85.65	85.95	89.30	14-10-68	86.23	12/07/2020 12	65	58	89.23
134	Tista	Mekhliganj	West Bengal	65.45	65.95	66.45	13-07-96	66.07	12/07/2020 19	28	23	82.14
135	Teesta	Malli Bazaar	Sikkim	223.00	224.00	225.25		218.32	11/07/2020 06	0	0	-
136	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	353.20		349.29	06/08/2020 06	0	0	-
137	Teesta	Singtam	Sikkim	377.07	377.57	379.17		375.13	02/07/2020 14	0	0	-
	2 c Barak & Others											-
138	Barak	APGhat	Assam	18.83	19.83	21.84	01-08-89	20.14	16/07/2020 09	19	19	100.00
139	Katakhal	Matizuri	Assam	19.27	20.27	22.73	10-09-07	20.9	07/10/2020 04	18	18	100.00
140	Barak	Badarpurghat	Assam	15.85	16.85	18.48	11-09-07	17.07	16/07/2020 16	36	36	100.00
141	Kushiyara	Karimganj	Assam	13.94	14.94	16.57	10-06-10	16.07	16/07/2020 21	127	127	100.00
142	Manu	Kailashar	Tripura	24.34	25.34	25.95	13-06-18	23.93	28/05/2020 10	0	0	-
143	Gumti	Sonamura	Tripura	11.50	12.50	14.42	23-07-93	10.79	13/07/2020 21	0	0	-
	3. Godavari Basin											-
144	Godavari	Nasik	Maharashtra	558.10	559.60	563.51	04-08-19	556.21	12/06/2020 19	0	0	-
145	Godavari	Kopergaon	Maharashtra	490.90	493.68	499.17	1969	489.8	20/09/2020 20	0	0	-
146	Godavari	Gangakhed	Maharashtra	374.00	375.00	377.57	1947	372.19	27/09/2020 16	0	0	-
147	Godavari	Nanded	Maharashtra	353.00	354.00	357.10	06-08-06	348.9	28/09/2020 03	0	0	-
148	Wainganga	Bhandara	Maharashtra	245.50	245.70	250.90	16-09-05	250.61	30/08/2020 19	12	12	100.00
149	Wainganga	Pauni	Maharashtra	226.73	227.73	237.12	07-09-94	232.75	31/08/2020 01	13	13	100.00
150	Wardha	Balharsha	Maharashtra	171.50	174.00	176.45	14-08-86	166.51	31/08/2020 01	0	0	-
151	Wardha	Sirpur Town	Telangana	159.95	160.95	161.34	18-08-18	157.8	31/08/2020 08	0	0	-
152	Godavari	Kaleswaram	Telangana	103.50	104.75	107.05	15-08-86	103.58	02/09/2020 12	2	2	100.00
153	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	544.68	09-07-73	542.5	21/08/2020 22	6	5	83.33
154	Godavari	Eturunagaram	Telangana	73.32	75.82	77.66	24-08-90	75.44	17/08/2020 05	12	10	83.33
155	Godavari	Dummagudam	Telangana	53.00	55.00	60.25	15-08-86	57	17/08/2020 13	12	11	91.67
156	Godavari	Bhadrachalam	Telangana	45.72	48.77	55.66	16-08-86	51.38	17/08/2020 18	18	17	94.44
157	Sabari	Chinturu	Andhra Pradesh	41.50	43.00	40.45	20-08-18	44.91	18/08/2020 05	14	12	85.71
158	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	51.30	16-08-86	44.79	18/08/2020 04	20	18	90.00
159	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	20.48	16-08-86	18.82	18/08/2020 10	11	7	63.64
160	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	18.36	16-08-86	16.74	18/08/2020 12	20	18	90.00
161	Godavari	Atreyapuram	Andhra Pradesh	14.00	15.50	18.36	22-08-18	14.16	18/08/2020 14	3	3	100.00

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
	4. Krishna Basin											
162	Krishna	Arjunwad	Maharashtra	542.07	543.29	544.28	09-08-19	538.99	19/08/2020 07	0	0	-
163	Bhima	Deongaon	Karnataka	402.00	404.50	407.34	13-08-06	409	18/10/2020 00	13	10	76.92
164	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	318.77	02-10-09	310.87	22/09/2020 06	9	5	55.56
165	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	281.22	02-10-09	272.4	20/08/2020 16	0	0	-
166	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	11.57	05-10-09	10.41	15/10/2020 12	13	11	84.62
	5. Cauvery Basin											
167	Bhavani	Savandapur	Tamilnadu	184.50	185.50	187.75	17-08-18	181.65	10/09/2020 00	0	0	-
168	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	128.14	17-08-18	124.37	19/09/2020 23	0	0	-
169	Cauvery	Musiri	Tamilnadu	82.11	83.11	86.98	25-11-05	82	21/10/2020 10	0	0	-
	6. Subarnarekha											
170	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	129.82	12-10-73	122.5	27/08/2020 03	0	0	-
171	Subernarekna	Rajghat	Odisha	9.45	10.36	12.69	19-06-08	10.96	28/08/2020 03	3	2	66.67
172	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	6.80		7.05	27/08/2020 02	74	67	90.54
173	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	9.50	12-10-73	8.4	27/08/2020 12	4	3	75.00
	7. Brahmani and Baitarani											
174	Baitarni	Anandpur	Odisha	37.44	38.36	41.35	23-09-11	40.9	27/08/2020 06	9	5	55.56
175	Baitarni	Akhuapada	Odisha	17.83	17.83	21.95	16-08-60	20.06	27/08/2020 17	9	7	77.78
176	Brahmani	Jenapur	Odisha	22.00	23.00	24.78	20-08-75	23.46	28/08/2020 17	4	3	75.00
	8. Mahanadi Basin											
177	Mahanadi	Naraj	Odisha	25.41	26.41	27.61	31-08-82	26.96	31/08/2020 17	17	17	100.00
178	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	13.11	11-09-11	11.33	31/08/2020 15	7	7	100.00
179	Mahanadi	Nimapara	Odisha	9.85	10.76	11.60	31-08-82	10.14	31/08/2020 22	6	6	100.00
	9. Pennar Basin											
180	Pennar	Nellore	Andhra Pradesh	15.91	17.28	18.70	30-11-1882	16.15	27/11/2020 16	2	2	100.00
	10. Mahi Basin											
181	Mahi	Wanakbori	Gujarat	71.93	74.98	76.10	12-08-06	72.93	31/08/2020 00	3	3	100.00
	11. Sabarmati Basin											
182	Sabarmati	Ahmedabad	Gujarat	44.09	45.34	47.45	19-08-06	42.3	14/09/2020 15	0	0	-
	12. Narmada Basin											
183	Naramada	Mandla	Madhya Pradesh	437.20	437.80	439.40	15-07-74	439.04	19/08/2020 00	24	24	100.00
184	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	301.33	27-08-72	299.6	29/08/2020 23	28	28	100.00
185	Naramada	Garudeswar	Gujarat	30.48	31.09	41.65	06-09-70	33.1	01/09/2020 15	10	10	100.00
186	Naramada	Bharuch	Gujarat	6.71	7.31	12.65	07-09-70	10.72	01/09/2020 22	16	16	100.00
	13. Tapi Basin											
187	Tapi	Surat	Gujarat	8.50	9.50	12.50	09-08-06	6.4	24/08/2020 20	0	0	-
	14. West Flowing rivers from Tapi to Tadri											
188	Damanganga	Vapi Town	Gujarat	18.20	19.20	23.76	03-08-04	17	05/08/2020 04	0	0	-
189	Damanganga	Daman	Daman & Diu	2.60	3.40	4.00	03-08-04	2.2	07/06/2020 15	0	0	-

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2020												
Sl.No.	Name of the river	Name of FF site	Name of State	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2020		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
	16. East flowing rivers between Mahanadi and Pennar											
190	Rushikuluya	Purushottampur	Odisha	15.83	16.83	19.65	04-11-90	16.36	14/10/2020 08	3	2	66.67
191	Vamsadhara	Gunupur	Odisha	83.00	84.00	88.75	17-09-80	83.02	14/10/2020 19	1	0	0.00
192	Vamsadhara	Kashinagar	Odisha	54.10	54.60	58.93	18-09-80	54.88	14/10/2020 13	18	16	88.89
193	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	14.53	12-05-90	10.43	15/10/2020 14	5	5	100.00
	17 East flowing rivers between Pennar and Kanyakumari											
194	Vaigai	Madurai	Tamilnadu	131.50	132.50	134.76	17-11-97	131.29	02/10/2020 13	0	0	-
	18. West flowing rivers of Kutch and Saurashtra including Luni											
195	Banas	Abu Road	Rajasthan	258.00	259.00	265.40	31-08-73	256.76	23/08/2020 07	0	0	-
	19. West Flowing River Tadri to Kanyakumari											
196	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	11.27	17-08-18	9.27	07/08/2020 23	4	4	100.00
197	Periyar	Neeleswaram	Kerala	9.00	10.00	12.40	15-08-18	7.59	07/08/2020 04	0	0	-
198	Pamba	Malakkara	Kerala	6.00	7.00	9.58	16-08-18	7.27	08/08/2020 03	11	11	100.00
								Total Level Forecasts		***8243***	***8133***	98.67
								Total Inflow Forecasts		**3478**	**3065**	88.13
								Total Forecasts		**11721**	**11198**	95.54

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2020								
Sl.No.	Name of the river	Name of FF site	Name of State	FRL/PL (m)	Maximum Level -2020	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9
	1. Indus Basin							
	2 a. Ganga Basin							
1	Ganga	Dharmanagri Ba	Uttar Pradesh	221.80	219.7	2	0	0.00
2	Ganga	Narora Barrage	Uttar Pradesh	180.61	179.07	30	26	86.67
3	Ramganga	Kalagarh Dam	Uttarakhand	366.20	495.12	0	0	-
4	Yamuna	Tajewala Weir	Haryana	323.70	334.32	0	0	-
5	Chambal	Gandhisagar Da	Madhya Pradesh	399.90	399.56	9	4	44.44
6	Chambal	Rana Pratap Sa	Rajasthan	352.80	352.38	1	0	0.00
7	Chambal	Kota Barrage	Rajasthan	260.30	260.45	1	0	0.00
8	Banas	Bisalpur Dam	Rajasthan	315.50	313.51	0	0	-
9	Kalisindh	Kalisindh Dam	Rajasthan	316.00	315.99	28	14	50.00
10	Parwan	Parwan Dam	Rajasthan	288.34	292.67	4	0	0.00
11	Gambhiri	Gambhiri Dam	Rajasthan	431.90	426.58	1	0	0.00
12	Gambhiri	Panchana Dam	Rajasthan	258.62	258	4	0	0.00
13	Mej	Gudha Dam	Rajasthan	305.87	304.25	0	0	-
14	Parwati	Parwati Dam	Rajasthan		311.05	1	0	0.00
15	Betwa	Rajghat Dam	Madhya Pradesh	380.80	371	15	2	13.33
16	Betwa	Matatilia Dam	Uttar Pradesh	308.46	308.46	15	1	6.67
17	Sharda	Banbasa	Uttarakhand	222.96	222.9	7	7	100.00
18	Ghaghra	Katerniaghat Da	Uttar Pradesh	138.00	138	45	45	100.00
19	Sone	Bansagar Dam	Madhya Pradesh	341.65	341.52	27	7	25.93
20	Rihand	Rihand Dam	Uttar Pradesh	268.22	264.57	16	8	50.00
21	Khoranadi	Annaraj Dam	Jharkhand	252.44	NA	0	0	-
22	Goda Nala	Bhairwa Dam	Jharkhand	356.70	NA	0	0	-
23	Sone	Indrapuri Barrag	Bihar	173.00	NA	0	0	-
24	Gandak	Gandak Barrage	Bihar	113.08	109.88	5	0	0.00
25	Baranadi	Amanat Barage	Jharkhand	274.39	NA	0	0	-
26	Jamunia	Batane Dam	Jharkhand	232.85	NA	0	0	-
27	Kosi	Kosi Barrage	Bihar	77.74	106.68	5	0	0.00
28	Mayurakshi	Massanjore Dan	Jharkhand	121.31	119.3	20	20	100.00
29	Mayurakshi	Tilpara Barrage	West Bengal	62.79	62.76	34	30	88.24
30	Ashra nadi	Sikatia Barrage	Jharkhand	170.10	161.95	0	0	-
31	Damodar	Tenughat Dam	Jharkhand	268.83	260.62	36	36	100.00

32	Barakar	Tilaiya Dam	Jharkhand	372.46	369.72	1	0	0.00
33	Konar	Konar Dam	Jharkhand	427.93	426.14	0	0	-
34	Damodar	Panchet Dam	Jharkhand	132.59	128.42	89	88	98.88
35	Barakar	Maithon Dam	Jharkhand	150.88	149.61	59	56	94.92
36	Damodar	Durgapur Barrag	West Bengal	64.47	86.91	95	95	100.00
37	Anjanwa	Sundar Dam	Jharkhand	110.68	110.95	0	0	-
38	Kangsabati	Hinglow Dam	West Bengal	97.84	97.29	0	0	-
39	Kangsabati	Kangsabati Dam	West Bengal	134.11	131.63	29	26	89.66
	2 b Brahmaputra Basin							
40	Teesta	Teesta-III HEP D	Sikkim	1585.00	1584.6	0	0	-
41	Teesta	Teesta V HEP D	Sikkim	579.00	574.5	0	0	-
42	Rongpo	Rongpo Dam	Sikkim	909.00	911.58	0	0	-
43	Rongli	Rongli Dam	Sikkim	909.00	910.48	0	0	-
44	Rangit	Rangit-III HEP D	Sikkim	639.00	638.98	0	0	-
	2 c Barak & Others							-
	3. Godavari Basin							-
45	Godavari	N M D Weir	Maharashtra	533.50	533.74	0	0	-
46	Mula	Mula Dam	Maharashtra	552.30	552.30	0	0	-
47	Godavari	Jaikwadi Dam	Maharashtra	463.91	463.91	6	6	100.00
48	Sindhpana	Manjlegaon	Maharashtra	431.80	431.80	0	0	-
49	Puma	Yeldari Dam	Maharashtra	461.77	461.96	0	0	-
50	Karanja	Karanja Dam	Karnataka	584.15	584.15	0	0	-
51	Manjira	Singur Dam	Telangana	523.60	523.99	4	2	50.00
52	Manjira	Nizamsagar Dar	Telangana	428.24	428.24	5	5	100.00
53	Godavari	Sriram Sagar	Telangana	332.54	332.54	27	24	88.89
54	Kaddamvagu	Kaddam Dam	Telangana	213.36	213.36	0	0	-
55	Godavari	Sripada Yellamp	Telangana	148.00	147.99	21	18	85.71
56	Wainganga	Upper Waingang	Madhya Pradesh	519.38	519.38	5	1	20.00
57	Pench	Totladoh Project	Madhya Pradesh	490.00	491.86	4	1	25.00
58	Wainganga	Goshikhurd Dam	Maharashtra	245.50	244.46	20	12	60.00
59	Wardha	Upper Wardha P	Maharashtra	342.50	342.5	0	0	-
60	Penganga	Issapur/Upper P	Maharashtra	441.00	441.03	0	0	-
61	Godavari	Laxmi Barrage	Telangana	1000.00	99.6	56	51	91.07
62	Indravathi	Upper Indravathi	Odisha	642.00	638.38	0	0	-
63	Kolab	Kolab Project	Odisha	858.00	852.7	0	0	-
64	Machhkund	Machhkund Proj	Odisha	838.20	838.20	0	0	-
65	Balimela	Balimela Project	Odisha	462.07	458.42	0	0	-
66	Godavari	Indirasagar(Pola	Andhra Pradesh		26.65	42	42	100.00
67	Koyna	Koyna Dam	Maharashtra	659.43	659.95	14	9	64.29
68	Warana	Warana Dam	Maharashtra	626.90	626.9	5	4	80.00
	4. Krishna Basin							

69	Krishna	Hippargi Dam	Karnataka	531.40	525.05	38	35	92.11
70	Ghataprabha	Hidkal Dam	Karnataka	662.94	662.94	69	56	81.16
71	Krishna	Alamati Dam	Karnataka	519.60	519.6	46	41	89.13
72	Malaprabha	Malaprabha Dan	Karnataka	633.83	633.832	50	42	84.00
73	Krishna	Narayanpur Dan	Karnataka	492.25	492.25	89	83	93.26
74	Nira	Veer Dam	Maharashtra	579.85	579.85	10	8	80.00
75	Bhima	Ujjani Dam	Maharashtra	497.33	496.86	4	3	75.00
76	Krishna	Priyadarshini	Telangana	318.51	318.56	156	154	98.72
77	Tunga	Upper Tunga	Karnataka	588.24	588.24	101	94	93.07
78	Bhadra	Bhadra Dam	Karnataka	657.75	657.75	48	40	83.33
79	Tungabhadra	Tungabhadra Da	Karnataka	497.74	506.88	101	91	90.10
80	Krishna	Singatalur Barra	Karnataka	507.00	956.59	100	100	100.00
81	Tungabhadra	Sunkesula Barra	Andhra Pradesh	292.00	291.99	102	97	95.10
82	Krishna	Srisailam Dam	Andhra Pradesh	269.75	269.74	163	161	98.77
83	Musi	Musi Project	Telangana	196.60	196.74	22	16	72.73
84	Krishna	Dr K L R S Pulic	Andhra Pradesh	53.34	54.85	124	109	87.90
85	Krishna	Prakasham Barr	Andhra Pradesh	18.30	19.16	149	139	93.29
	5. Cauvery Basin							
86	Harangi	Harangi Dam	Karnataka	871.42	871.39	20	16	80.00
87	Hemavathy	Hemavathy Dam	Karnataka	890.63	890.7	58	50	86.21
88	Kabini	Kabini Dam	Karnataka	696.16	696.31	50	44	88.00
89	Cauvery	Krishnarajasaga	Karnataka	752.49	752.49	100	91	91.00
90	Cauvery	Mettur Dam	Tamilnadu	240.79	236.76	94	84	89.36
91	Bhavani	Bhavanisagar Da	Tamilnadu	280.42	279.49	17	9	52.94
92	Kodaganar	Kodaganar Dam	Tamilnadu	200.25	195.81	0	0	-
93	Cauvery	Grand Anicut	Tamilnadu	59.21	59.21	155	132	85.16
94	Cauvery	Upper Anicut	Tamilnadu	75.05	74.4	157	136	86.62
	6. Subarnarekha							
95	Subarnarekha	Getlasud Dam	Jharkhand	590.24	588.81	0	0	-
96	Subernarekna	Chandil Dam	Jharkhand	192.00	181.05	0	0	-
97	Subarnarekha	Galudih Barrage	Jharkhand	94.50	588.66	69	49	71.01
	7. Brahmani and Baitarani							
98	Salandi	Salandi Dam	Odisha	82.30	79.7	0	0	-
99	Brahmani	Rengali Dam	Odisha	123.50	123.97	9	4	44.44
	8. Mahanadi Basin							
100	Mahanadi	Ravishankar Da	Chattisgarh	248.70	348.76	4	3	75.00
101	Hasdeo	Bango Dam	Chattisgarh	359.66	358.43	7	6	85.71
102	Mahanadi	Hirakud Dam	Odisha	192.02	192.02	102	100	98.04
	9. Pennar Basin							
103	North Pennar	Somasila Dam	Andhra Pradesh	100.58	100.58	64	48	75.00
	10. Mahi Basin							

104	Mahi	Mahi Bajajsagar	Rajasthan	281.50	281.5	9	9	100.00
105	Som Kamla	Som Kamla Aml	Rajasthan	212.50	213.5	0	0	-
106	Mahi	Kadana Dam	Gujarat	126.19	127.71	13	13	100.00
107	Panam	Panam Dam	Gujarat	121.41	125.8	0	0	-
	11. Sabarmati Basin							
108	Sabarmati	Dharoi Dam	Gujarat	187.45	189.59	6	6	100.00
	12. Narmada Basin							
109	Narmada	Barna Dam	Madhya Pradesh	348.55	348.65	6	6	100.00
110	Narmada	Bargi Dam	Madhya Pradesh	422.76	423	29	29	100.00
111	Narmada	Tawa Dam	Madhya Pradesh	355.39	355.54	11	11	100.00
112	Narmada	Indira Sagar Dar	Madhya Pradesh	262.13	262.13	39	39	100.00
113	Narmada	Omkareshwar D	Madhya Pradesh	201.16	196.6	38	38	100.00
114	Narmada	Sardar Sarovar I	Gujarat	138.38	138.68	73	71	97.26
	13. Tapi Basin							
115	Tapi	Hatnur Dam	Maharashtra	212.02	214.12	69	69	100.00
116	Tapi	Ukai Dam	Gujarat	102.41	105.16	60	58	96.67
	14. West Flowing rivers from Tapi to Tadri							
117	Damanganga	Madhuban Dam	Gujarat	79.86	79.86	3	3	100.00
	16. East flowing rivers between Mahanadi and Pennar							
118	Vamsadhara	Gotta Barrage	Andhra Pradesh	34.84	38.1	3	3	100.00
119	Nagavali	Thottapalli Rese	Andhra Pradesh	105.00	104.99	0	0	-
120	Suwarnamukhi	Madduvalasa Re	Andhra Pradesh	65.00	64.96	0	0	-
121	Nagavali	Narayanapuram	Andhra Pradesh	32.77	30.4	12	9	75.00
	17 East flowing rivers between Pennar and Kanyakumari							
122	Kosasthaliyar	Poondi Satyamu	Tamilnadu	42.67	42.67	8	2	25.00
123	Adyar	Chembarampak	Tamilnadu	26.03	25.68	4	0	0.00
124	South Pennar	Sathnur Dam	Tamilnadu	222.20	216.53	0	0	-
125	Gomukhinadi	Gomukhi Dam	Tamilnadu	183.18	183.12	0	0	-
126	Periyar Odai	Wellington Dam	Tamilnadu	72.54	70.46	0	0	-
127	Vaigai	Vaigai Dam	Tamilnadu	279.20	276.79	10	7	70.00
	18. West flowing rivers of Kutch and Saurashtra including Luni							
128	Banas	Dantiwada Dam	Gujarat	182.88	180.12	0	0	-
	19. West Flowing River Tadri to Kanyakumari							
129	Periyar	Idduki Dam	Kerala	732.62	729.7	10	7	70.00
130	Edamalayar	Idamalayar	Kerala	169.00	164.74	9	4	44.44
				Total Inflow Forecasts		***3478***	***3065***	**88.13**
				Total Level Forecasts		**8243**	**8133**	**98.67**
				Total Forecasts		**11721**	**11198**	**95.54**

Statewise Flood Forecasting Information In India during Flood Season 2020

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2020		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	Andhra Pradesh										
1	Sabari	Chinturu	41.50	43.00	40.45	20-08-18	44.91	18/08/2020 05	14	12	85.71
2	Godavari	Kunavaram	37.74	39.24	51.30	16-08-86	44.79	18/08/2020 04	20	18	90.00
3	Godavari	Rajahmundry	17.68	19.51	20.48	16-08-86	18.82	18/08/2020 10	11	7	63.64
4	Godavari	Dowlaiswaram	14.25	16.08	18.36	16-08-86	16.74	18/08/2020 12	20	18	90.00
5	Tungabhadra	Mantralayam	310.00	312.00	318.77	02-10-09	310.87	22/09/2020 06	9	5	55.56
6	Pennar	Nellore Anicut	15.91	17.28	18.70	30-11-1882	16.15	27/11/2020 16	2	2	100.00
7	Godavari	Atreyapuram	14.00	15.50	18.36	22-08-18	14.16	18/08/2020 14	3	3	100.00
8	Tungabhadra	Kurnool Town	273.00	274.00	281.22	02-10-09	272.4	20/08/2020 16	0	0	-
9	Krishna	Avanigadda	9.00	11.00	11.57	05-10-09	10.41	15/10/2020 12	13	11	84.62
10	Nagavali	Srikakulam	10.17	10.80	14.53	12-05-90	10.43	15/10/2020 14	5	5	100.00
	Assam										
11	Brahmaputra	Dibrugarh	104.70	105.70	106.48	03-09-98	106.11	11/07/2020 21	118	118	100.00
12	Brahmaputra	Neamatighat	84.54	85.54	87.37	11-07-91	87.35	12/07/2020 11	144	144	100.00
13	Brahmaputra	Tezpur	64.23	65.23	66.59	27-08-88	66.56	13/07/2020 16	118	118	100.00
14	Brahmaputra	Guwahati	48.68	49.68	51.46	21-07-04	50.77	14/07/2020 12	71	71	100.00
15	Brahmaputra	Goalpara	35.27	36.27	37.43	31-07-54	37.25	15/07/2020 03	81	81	100.00
16	Brahmaputra	Dhubri	27.62	28.62	30.37	18-07-19	30.19	15/07/2020 12	240	240	100.00
17	Buridehing	Naharkatia	119.40	120.40	122.69	17-06-73	118.82	25/06/2020 21	0	0	-
18	Buridehing	Khowang	101.11	102.11	104.16	02-09-15	103.19	27/06/2020 04	47	47	100.00
19	Desang	Nanglamoraghat	93.46	94.46	96.49	06-09-98	95.44	10/07/02020 01	96	96	100.00
20	Dikhow	Shivsagar	91.40	92.40	94.23	01-08-18	94.24	22/06/2020 08	102	102	100.00
21	Subansiri	Badatighat	81.53	82.53	86.21	28-07-72	82.72	13/07/2020 01	35	35	100.00
22	Dhansiri (S)	Golaghat	88.50	89.50	92.45	11-10-86	88.77	30/07/2020 06	5	5	100.00
23	Dhansiri (S)	Numaligarh	77.42	78.42	80.16	02-08-18	78.78	22/06/2020 03	185	185	100.00
24	Jiabharali	Jia-Bharali NT Road Crossing	76.00	77.00	78.50	26-07-07	78.14	31/07/2020 11	474	472	99.58
25	Kopili	Kampur	59.50	60.50	61.79	20-07-04	61.75	28/05/2020 09	50	50	100.00
26	Kopili	Dharamtul	55.00	56.00	58.09	21-07-04	57.28	24/07/2020 12	171	170	99.42
27	Puthimari	Puthimari NH Crossing	50.81	51.81	55.08	31-08-08	54.58	12/07/2020 04	108	107	99.07
28	Pagladiya	Pagladiya NT Road Crossing	51.75	52.75	55.45	08-07-04	53.4	31/07/2020 02	127	123	96.85
29	Beki	Beki NH Crossing	44.10	45.10	46.20	04-08-00	45.96	12/07/2020 07	258	258	100.00
30	Manas	Manas NH Crossing	47.81	48.42	50.08	15-09-84	49.26	08/09/2020 15	115	113	98.26
31	Manas	Mathanguri	98.10	99.10	100.28	13-10-73	96.65	11/07/2020 23	0	0	-
32	Sankosh	Golokganj	28.94	29.94	30.95	08-09-07	30.5	12/07/2020 08	162	161	99.38
33	Barak	AP Ghat	18.83	19.83	21.84	01-08-89	20.14	16/07/2020 09	19	19	100.00
34	Katakhal	Matizuri	19.27	20.27	22.73	10-09-07	20.9	07/10/2020 04	18	18	100.00
35	Kushiyara	Karimganj	13.94	14.94	16.57	10-06-10	16.07	16/07/2020 21	127	127	100.00
36	Barak	Badarpurghat	15.85	16.85	18.48	11-09-07	17.07	16/07/2020 16	36	36	100.00
37	Subansiri	Choldhowaghat	99.43	100.43	101.31	27-07-72	96.9	30/07/2020 16	0	0	-
38	Ranganadi	N H Crossing Ranganadi	93.81	94.81	95.92	02-07-79	94.38	22/05/2020 15	63	63	100.00
39	Lohit	Dholla Bazaar	127.27	128.27	130.07	22-09-12	128.02	11/07/2020 00	29	29	100.00
40	Gaurang	Kokrajhar	41.85	42.85	43.60	20-08-15	43.26	31/07/2020 15	95	93	97.89
	Arunachal Pradesh										
41	Noa-Dehing	Namsai	144.80	145.80	146.60	31-08-74	144.73	27/09/2020 15	0	0	-
42	Siang	Yingkiang	303.00	304.00			NA	NA	0	0	-

Statewise Flood Forecasting Information In India during Flood Season 2020

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2020		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
43	Siang	Passighat	152.96	153.96	157.54	11-06-00	154.29	12/07/2020 03	130	129	99.23
	Bihar										
44	Ganga	Buxar	59.32	60.32	62.09	1948	59.1	05/09/2020 07	0	0	-
45	Ganga	Patna Dighaghat	49.45	50.45	52.52	23-08-75	50.05	22/08/2020 17	26	26	100.00
46	Ganga	Patna Gandhighat	47.60	48.60	50.52	20-08-16	48.86	22/08/2020 12	58	58	100.00
47	Ganga	Hathidah	40.76	41.76	43.17	21-08-16	42.13	03/09/2020 06	61	61	100.00
48	Ganga	Munger	38.33	39.33	40.99	19-09-76	38.69	24/08/2020 07	22	22	100.00
49	Ganga	Bhagalpur	32.68	33.68	34.72	26-08-16	33.4	24/08/2020 07	36	36	100.00
50	Ganga	Kahalgaon	30.09	31.09	32.87	17-09-03	31.45	22/08/2020 01	90	90	100.00
51	Ghaghra	Darauli	59.82	60.82	61.74	29-08-98	61.51	05/08/2020 10	77	77	100.00
52	Ghaghra	Gangpur Siswan	56.04	57.04	58.01	18-09-83	57.9	06/08/2020 04	61	61	100.00
53	Ghaghra	Chhappra	52.68	53.68	54.59	03-09-82	51.14	06/08/2020 06	0	0	-
54	Gandak	Chatia	68.15	69.15	70.04	26-07-02	69.38	27/09/2020 05	4	4	100.00
55	Gandak	Rewaghat	53.41	54.41	55.41	17-09-86	55.46	24/07/2020 23	64	64	100.00
56	Gandak	Hazipur	49.32	50.32	50.93	1948	49.14	23/08/2020 04	0	0	-
57	Burhi Gandak	Lalbeghiaghat	62.20	63.20	67.09	30-07-75	64.42	26/07/2020 04	44	44	100.00
58	Burhi Gandak	Muzzafarpur Sikandarpur	51.53	52.53	54.29	15-08-87	53.91	30/07/2020 05	55	55	100.00
59	Burhi Gandak	Samastipur	45.02	46.02	49.38	15-08-87	48.68	31/07/2020 08	55	55	100.00
60	Burhi Gandak	Rosera	41.63	42.63	46.35	16-08-87	46.56	02/08/2020 22	68	65	95.59
61	Burhi Gandak	Khagaria	35.58	36.58	39.22	1976	37.88	06/08/2020 01	85	85	100.00
62	Bagmati	Benibad	47.68	48.68	50.01	12-07-04	49.89	24/07/2020 12	125	125	100.00
63	Bagmati	Hayaghat	44.72	45.72	48.96	14-08-87	48.11	08/08/2020 05	73	73	100.00
64	Bagmati	Dheng Bridge	69.10	70.10	73.00	13-08-17	71.62	25/09/2020 13	130	129	99.23
65	Adhwara Group	Kamtaul	49.00	50.00	52.99	12-08-87	51.88	01/10/2020 21	66	66	100.00
66	Adhwara Group	Ekmighat	45.94	46.94	49.52	12-07-04	49.05	08/08/2020 03	81	80	98.77
67	Adhwara	Sonebarsha	80.85	81.85	83.20	03-07-99	81.52	20/07/2020 23	3	3	100.00
68	Kamla Balan	Jainagar	66.75	67.75	71.35	1965	68.82	11/07/2020 20	385	378	98.18
69	Bagmati	Runisaidpur	52.73	53.73	58.15	14-08-17	57.32	13/07/2020 06	133	133	100.00
70	Parwan	Araria	46.00	47.00	49.40	14-08-17	48.37	28/09/2020 05	185	184	99.46
71	Kamla Balan	Jhanjarpur	49.00	50.00	53.11	14-07-19	52.09	13/07/2020 14	241	240	99.59
72	Kosi	Basua	46.75	47.75	49.24	13-08-17	47.89	12/07/2020 05	188	188	100.00
73	Kosi	Baltara	32.85	33.85	36.40	15-08-87	35.93	26/07/2020 23	122	122	100.00
74	Kosi	Kursela	29.00	30.00	32.10	07-09-82	30.49	20/08/2020 06	90	90	100.00
75	Mahananda	Dhengraghat	34.65	35.65	38.20	14-08-17	36.93	14/07/2020 03	89	88	98.88
76	Mahananda	Jhawa	30.40	31.40	34.07	14-08-17	32.63	28/09/2020 12	164	163	99.39
77	Mahananda	Taibpur	65.00	66.00	67.22	1968	66.94	21/07/2020 05	123	119	96.75
78	Gandak	Dumariaghat	61.22	62.22	64.10	17-08-17	64.36	24/07/2020 06	121	120	99.17
79	Burhigandak	Ahirwalia	58.62	59.62	61.17	1975	60.25	27/07/2020 06	24	24	100.00

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
80	Sone	Inderpuri	107.20	108.20	109.60	23-08-75	104.45	21/08/2020 06	0	0	-
81	Sone	Koelwar	54.52	55.52	58.88	20-07-71	52.7	22/08/2020 05	0	0	-
82	Sone	Maner	51.00	52.00	53.79	10-09-76	51.64	02/09/2020 16	26	26	100.00
83	PunPun	Sripalpur	49.60	50.60	53.91	18-09-76	51.85	16/08/2020 00	38	38	100.00
	Chhattisgarh										
84	Indravathi	Jagdalpur	539.50	540.80	544.68	09-07-73	542.5	21/08/2020 22	6	5	83.33
	Daman & Diu										
85	Damanganga	Daman	2.60	3.40	4.00	03-08-04	2.2	07/06/2020 15	0	0	-
	Gujarat										
86	Sabarmati	Ahmedabad Shubhash	44.09	45.34	47.45	19-08-06	42.3	14/09/2020 15	0	0	-
87	Mahi	Wanakbori	71.93	74.98	76.10	12-08-06	72.93	31/08/2020 00	3	3	100.00
88	Narmada	Garudeswar	30.48	31.09	41.65	06-09-70	33.1	01/09/2020 15	10	10	100.00
89	Narmada	Bharuch	6.71	7.31	12.65	07-09-70	10.72	01/09/2020 22	16	16	100.00
90	Tapi	Surat	8.50	9.50	12.50	09-08-06	6.4	24/08/2020 20	0	0	-
91	Damanganga	Vapi Town	18.20	19.20	23.76	03-08-04	17	05/08/2020 04	0	0	-
	Haryana										
92	Yamuna	Karnal Bridge	248.80	249.50	250.07	17-06-13	247.42	26/08/2020 12	0	0	-
	Himachal Pradesh										
93	Yamuna	Paonta Sahib	383.50	384.50	384.60	05-09-95	380.9	11/08/2020 01	0	0	-
	Jammu & Kashmir										
94	Jhelum	Rammunshibagh	1585.53	1586.45	1588.99	08-09-14	1585.02	28/08/2020 16	0	0	-
95	Jhelum	Sangam	1590.30	1592.00	1595.00	06-09-14	1590.02	28/08/2020 07	0	0	-
96	Jhelum	Safapora	1580.00	1580.80	1582.10	09-09-14	1579..61	29/08/2020 03	0	0	-
	Jharkhand										-
97	Ganga	Sahibganj	26.25	27.25	30.91	1998	28.37	24/08/2020 05	90	90	100.00
98	Subarnarekha	Jamshedpur	122.50	123.50	129.82	12-10-73	122.5	27/08/2020 03	0	0	-
	Karnataka										
99	Bhima	Deongaon	402.00	404.50	407.34	13-08-06	409	18/10/2020 00	13	10	76.92
	Kerala										
100	Periyar	Neeleswaram	9.00	10.00	12.40	15-08-18	7.59	07/08/2020 04	0	0	-
101	Bharathapuzha	Kumbidi	8.20	9.20	11.27	17-08-18	9.27	07/08/2020 23	4	4	100.00
102	Pamba	Malakkara	6.00	7.00	9.58	16-08-18	7.27	08/08/2020 03	11	11	100.00
	Madhya Pradesh										
103	Narmada	Mandla	437.20	437.80	439.40	15-07-74	439.04	19/08/2020 00	24	24	100.00
104	Narmada	Hoshangabad	292.80	293.80	301.33	27-08-72	299.6	29/08/2020 23	28	28	100.00
	Maharashtra										
105	Godavari	Kopergaon	490.90	493.68	499.17	1969	489.8	20/09/2020 20	0	0	-
106	Godavari	Gangakhed	374.00	375.00	377.57	1947	372.19	27/09/2020 16	0	0	-
107	Godavari	Nanded	353.00	354.00	357.10	06-08-06	348.9	28/09/2020 03	0	0	-
108	Wainganga	Bhandara	245.50	245.70	250.90	16-09-05	250.61	30/08/2020 19	12	12	100.00
109	Wainganga	Pauni	226.73	227.73	237.12	07-09-94	232.75	31/08/2020 01	13	13	100.00
110	Wardha	Balharsha	171.50	174.00	176.45	14-08-86	166.51	31/08/2020 01	0	0	-
111	Krishna	Arjunwad	542.07	543.29	544.28	09-08-19	538.99	19/08/2020 07	0	0	-
112	Godavari	Nasik	558.10	559.60	563.51	04-08-19	556.21	12/06/2020 19	0	0	-

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	NCT Delhi										
113	Yamuna	Delhi Rly Bridge	204.50	205.33	207.49	06-09-78	204.41	28/08/2020 16	0	0	-
114	Sahibi	Dhansa	211.44	212.44	213.58	06-08-77	210.7	21/08/2020 08	0	0	-
	Odisha										
115	Subarnarekha	Rajghat	9.45	10.36	12.69	19-06-08	10.96	28/08/2020 03	3	2	66.67
116	Burhabalang	NH_5 _Road Bridge	7.21	8.13	9.50	12-10-73	8.4	27/08/2020 12	4	3	75.00
117	Baitarni	Anandpur	37.44	38.36	41.35	23-09-11	40.9	27/08/2020 06	9	5	55.56
118	Baitarni	Akhuapada	17.83	17.83	21.95	16-08-60	20.06	27/08/2020 17	9	7	77.78
119	Brahmani	Jenapur	22.00	23.00	24.78	20-08-75	23.46	28/08/2020 17	4	3	75.00
120	Rishikulya	Purushottampur	15.83	16.83	19.65	04-11-90	16.36	14/10/2020 08	3	2	66.67
121	Vamsadhara	Gunupur	83.00	84.00	88.75	17-09-80	83.02	14/10/2020 19	1	0	0.00
122	Vamsadhara	Kashinagar	54.10	54.60	58.93	18-09-80	54.88	14/10/2020 13	18	16	88.89
123	Mahanadi	Naraj	25.41	26.41	27.61	31-08-82	26.96	31/08/2020 17	17	17	100.00
124	Mahanadi	Alipingal Devi	10.85	11.76	13.11	11-09-11	11.33	31/08/2020 15	7	7	100.00
125	Mahanadi	Nimapara	9.85	10.76	11.60	31-08-82	10.14	31/08/2020 22	6	6	100.00
126	Jalaka	Mathani Road Bridge	5.50	5.50	6.80		7.05	27/08/2020 02	74	67	90.54
	Rajasthan										
127	Banas	Abu Road	258.00	259.00	265.40	31-08-73	256.76	23/08/2020 07	0	0	-
128	Chambal	Dholpur	129.79	130.79	145.54	23-08-96	134.35	01/09/2020 11	8	7	87.50
129	Chambal	Kota City	239.00	240.00			240.2	31/08/2020 00	2	2	100.00
	Sikkim										
130	Teesta	Malli Bazaar	223.00	224.00	225.25		218.32	11/07/2020 06	0	0	-
131	Teesta	Joretahang(Rothak)	350.60	351.60	353.20		349.29	06/08/2020 06	0	0	-
132	Teesta	Singtam	377.07	377.57	379.17		375.13	02/07/2020 14	0	0	-
	Tamilnadu										-
133	Cauvery	Musiri(Srirangam)	82.11	83.11	86.98	25-11-05	82	21/10/2020 10	0	0	-
134	Cauvery	Kodumudi (Erode)	125.50	126.50	128.14	17-08-18	124.37	19/09/2020 23	0	0	-
135	Bhavani	Savandapur(Bhavani)	184.50	185.50	187.75	17-08-18	181.65	10/09/2020 00	0	0	-
136	Vaigai	Madurai	131.50	132.50	134.76	17-11-97	131.29	02/10/2020 13	0	0	-
	Telangana										-
137	Godavari	Kaleswaram	103.50	104.75	107.05	15-08-86	103.58	02/09/2020 12	2	2	100.00
138	Godavari	Eturunagaram	73.32	75.82	77.66	24-08-90	75.44	17/08/2020 05	12	10	83.33
139	Godavari	Dummagudem	53.00	55.00	60.25	15-08-86	57	17/08/2020 13	12	11	91.67
140	Godavari	Bhadrachalam	45.72	48.77	55.66	16-08-86	51.38	17/08/2020 18	18	17	94.44
141	Wardha	Sirpur Town	159.95	160.95	161.34	18-08-18	157.8	31/08/2020 08	0	0	-
	Tripura										-
142	Manu	Kailashahar	24.34	25.34	25.95	13-06-18	23.93	28/05/2020 10	0	0	-
143	Gumti	Sonamura	11.50	12.50	14.42	23-07-93	10.79	13/07/2020 21	0	0	-
	Uttar Pradesh										-
144	Ganga	Kannauj	124.97	125.97	126.78	27-09-10	125.05	21/08/2020 03	3	3	100.00
145	Ganga	Ankinghat	123.00	124.00	124.49	28-09-10	123.45	21/08/2020 13	17	17	100.00
146	Ganga	Kanpur	112.00	113.00	114.08	29-09-10	112.12	22/08/2020 14	4	4	100.00
147	Ganga	Dalmau	98.36	99.36	99.84	03-08-73	98.13	23/08/2020 20	0	0	-
148	Ganga	Phaphamau	83.73	84.73	87.98	08-09-78	81.55	04/09/2020 09	0	0	-
149	Ganga	Allahabad Chhatnag	83.73	84.73	88.03	08-09-78	80.69	04/09/2020 09	0	0	-

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
150	Ganga	Mirzapur	76.72	77.72	80.34	09-09-78	74.18	04/09/2020 16	0	0	-
151	Ganga	Varanasi	70.26	71.26	73.90	09-09-78	68.69	04/09/2020 23	0	0	-
152	Ganga	Ghazipur	62.10	63.10	65.22	09-09-78	62.15	05/09/2020 04	2	2	100.00
153	Ganga	Ballia	56.62	57.62	60.39	25-08-16	58.15	05/09/2020 08	14	14	100.00
154	Ramganga	Moradabad	189.60	190.60	192.88	21-09-10	190.45	24/08/2020 18	28	27	96.43
155	Ramganga	Bareilly	162.07	163.07	162.88	06-08-78	159.98	29/08/2020 04	0	0	-
156	Yamuna	Mawi	230.00	230.85	232.75	18-06-13	229.9	27/08/2020 23	0	0	-
157	Yamuna	Mathura	165.20	166.00	169.73	08-09-78	164.94	30/08/2020 23	0	0	-
158	Yamuna	Agra	151.40	152.40	154.76	09-09-78	149.18	22/08/2020 21	0	0	-
159	Yamuna	Etawah	120.92	121.92	126.13	11-09-78	118.68	25/08/2020 00	0	0	-
160	Yamuna	Auraiya	112.00	113.00	118.19	25-08-96	110.33	02/09/2020 14	0	0	-
161	Yamuna	Kalpi	107.00	108.00	112.98	25-08-96	105.09	03/09/2020 04	0	0	-
162	Yamuna	Hamirpur	102.63	103.63	108.59	12-09-83	100.33	03/09/2020 02	0	0	-
163	Yamuna	Chillaghat	99.00	100.00	105.16	06-09-78	95.64	03/09/2020 12	0	0	-
164	Yamuna	Naini	83.74	84.74	87.99	08-09-78	81.4	04/09/2020 09	0	0	-
165	Betwa	Mohana	121.66	122.66	133.35	11-09-83	119.44	30/08/2020 20	0	0	-
166	Ken	Banda	103.00	104.00	113.29	07/0720/05	101.21	30/08/2020 13	0	0	-
167	Gomati	Lucknow HanumanSetu	108.50	109.50	110.85	10-09-71	105.9	13/08/2020 14	0	0	-
168	Gomati	Jaunpur	73.07	74.07	77.74	22-09-71	69.98	19/08/2020 01	0	0	-
169	SAI	Rae-Bareli	100.00	101.00	104.81	17-09-82	98.94	07/07/2020 06	0	0	-
170	Ghaghra	Elgin Bridge	105.07	106.07	107.62	18-08-18	107.15	01/08/2020 08	86	86	100.00
171	Ghaghra	Ayodhya	91.73	92.73	94.01	11-10-09	93.51	03/08/2020 08	77	77	100.00
172	Ghaghra	Turtipar	63.01	64.01	66.00	28-08-98	65.27	05/08/2020 06	96	96	100.00
173	Rapti	Balrampur	103.62	104.62	105.54	15-08-17	104.81	11/07/2020 18	42	41	97.62
174	Rapti	Bansi	83.90	84.90	85.88	20-08-17	84.85	15/07/2020 15	30	30	100.00
175	Rapti	Gorakhpur Birdghat	73.98	74.98	77.54	23-08-98	76.09	26/07/2020 10	51	51	100.00
176	Rapti	Kakardhari	130.00	131.00	132.37	15-08-14	129.92	22/07/2020 03	0	0	-
177	Gandak	Khadda	95.00	96.00	97.50	23-07-02	96.48	25/09/2020 06	184	184	100.00
178	Ganga	Fathegarh	136.60	137.60	138.14	26-09-10	137.56	27/08/2020 01	34	34	100.00
179	Ganga	Dabri	136.30	137.30	139.70	28-09-83	136.7	31/08/2020 08	11	11	100.00
180	Ganga	Garhmuktheswar	198.30	199.30	199.90	23-09-10	198.89	21/08/2020 03	31	31	100.00
181	Ganga	Kachla Bridge	161.00	162.00	162.79	24-09-10	162.71	16/08/2020 03	93	92	98.92
182	Betwa	Shahjina	103.54	104.54	108.67	12-09-83	99.74	03/09/2020 03	0	0	-
	Uttarakhand										-
183	Mandakini	Ganganagar	803.00	804.00	801.92	2015	801.1	11/08/2020 06	0	0	-
184	Alaknanda	Srinagar	535.00	536.00	537.90	17-06-13	536.1	11/08/2020 06	7	6	85.71
185	Ganga	Rishikesh	339.50	340.50	341.72	05-09-95	339.7	11/08/2020 14	1	1	100.00
186	Ganga	Haridwar	293.00	294.00	296.30	19-09-10	293.72	11/08/2020 15	7	7	100.00
	West Bengal										
187	Ganga	Farakka	21.25	22.25	25.14	07-09-98	22.89	22/08/2020 13	187	187	100.00
188	Mayurakshi	Narayanpur	26.99	27.99	29.69	27-09-95	25.25	30/07/2020 00	0	0	-
189	Ajoy	Gheropara	38.42	39.42	43.94	27-09-78	36.32	24/09/2020 12	0	0	-
190	Mundeswari	Harinkhola	11.80	12.80	14.60	28-07-17	8.58	07/08/2020 18	0	0	-
191	Kangsabati	Mohanpur	24.73	25.73	29.87	02-09-78	22	22/08/2020 06	0	0	-
192	Raidak-I	Tufanganj	34.22	35.30	36.50	12-08-17	35.76	13/07/2020 12	62	56	90.32

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					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12
193	Torsa	Hasimara	116.30	116.90	118.50	13-07-96	116.2	11/07/2020 16	0	0	-
194	Torsa	Ghugumari	39.80	40.41	41.46	03-08-00	40.35	12/07/2020 00	53	50	94.34
195	Jaldhaka	NH-31	80.00	80.90	81.33	28-08-72	80.27	11/07/2020 10	31	30	96.77
196	Jaldhaka	Mathabanga	47.70	48.20	49.85	07-09-07	48.57	22/07/2020 14	26	22	84.62
197	Tista	Domohani	85.65	85.95	89.30	14-10-68	86.23	12/07/2020 12	65	58	89.23
198	Tista	Mekhliganj	65.45	65.95	66.45	13-07-96	66.07	12/07/2020 19	28	23	82.14
							Total Level Forecasts		**8243**	**8133**	**98.67**
							Total Inflow Forecast		**3478**	**3065**	**88.13**
							Total Forecast		**11721**	**11198**	**95.54**

Statewise Flood Forecasting Information In India during Flood Season 2020

Sl. No.	Name of the river	Name of FF site	FRL/PL (m)	Maximum Level (m)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8
	Andhra Pradesh						
1	Godavari	Indirasagar(Polavaram)		26.65	42	42	100.00
2	Tungabhadra	Sunkesula Barrage	292.00	291.99	102	97	95.10
3	Krishna	Srisailam Dam	269.75	269.74	163	161	98.77
4	Krishna	Dr K L R S Pulichintala Dam	53.34	54.85	124	109	87.90
5	Krishna	Prakasham Barrage	18.30	19.16	149	139	93.29
6	North Pennar	Somasila Dam	100.58	100.58	64	48	75.00
7	Vamsadhara	Gotta Barrage	34.84	38.1	3	3	100.00
8	Nagavali	Thottapalli Reservoir Scheme	105.00	104.99	0	0	-
9	Suwarnamukhi	Madduvalasa Reservoir	65.00	64.96	0	0	-
10	Nagavali	Narayanapuram Anicut	32.77	30.4	12	9	75.00
	Assam						
	Arunachal Pradesh						
	Bihar						
11	Sone	Indrapuri Barrage	173.00	NA	0	0	-
12	Gandak	Gandak Barrage	113.08	109.88	5	0	0.00
13	Kosi	Kosi Barrage	77.74	106.68	5	0	0.00
	Chhattisgarh						
14	Mahanadi	Ravishankar Dam	248.70	348.76	4	3	75.00
15	Hasdeo	Bango Dam	359.66	358.43	7	6	85.71
	Daman & Diu						
	Gujarat						
16	Mahi	Kadana Dam	126.19	127.71	13	13	100.00
17	Panam	Panam Dam	121.41	125.8	0	0	-
18	Sabarmati	Dharoi Dam	187.45	189.59	6	6	100.00
19	Narmada	Sardar Sarovar Dam	138.38	138.68	73	71	97.26
20	Tapi	Ukai Dam	102.41	105.16	60	58	96.67
21	Damanganga	Madhuban Dam	79.86	79.86	3	3	100.00
22	Banas	Dantiwada Dam	182.88	180.12	0	0	-
	Haryana						
23	Yamuna	Tajewala Weir	323.70	334.32	0	0	-
	Himachal Pradesh						
	Jammu & Kashmir						
	Jharkhand						
24	Khoranadi	Annaraj Dam	252.44	NA	0	0	-

25	Goda Nala	Bhairwa Dam	356.70	NA	0	0	-
26	Baranadi	Amanat Barage	274.39	NA	0	0	-
27	Jamunia	Batane Dam	232.85	NA	0	0	-
28	Mayurakshi	Massanjore Dam	121.31	119.3	20	20	100.00
29	Ashra nadi	Sikatia Barrage	170.10	161.95	0	0	-
30	Damodar	Tenughat Dam	268.83	260.62	36	36	100.00
31	Barakar	Tilaiya Dam	372.46	369.72	1	0	0.00
32	Konar	Konar Dam	427.93	426.14	0	0	-
33	Damodar	Panchet Dam	132.59	128.42	89	88	98.88
34	Barakar	Maithon Dam	150.88	149.61	59	56	94.92
35	Anjanwa	Sundar Dam	110.68	110.95	0	0	-
36	Subarnarekha	Getlasud Dam	590.24	588.81	0	0	-
37	Subernarekna	Chandil Dam	192.00	181.05	0	0	-
38	Subarnarekha	Galudih Barrage	94.50	588.66	69	49	71.01
	Karnataka						
39	Karanja	Karanja Dam	584.15	584.15	0	0	-
40	Krishna	Hippargi Dam	531.40	525.05	38	35	92.11
41	Ghataprabha	Hidkal Dam	662.94	662.94	69	56	81.16
42	Krishna	Alamati Dam	519.60	519.6	46	41	89.13
43	Malaprabha	Malaprabha Dam	633.83	633.832	50	42	84.00
44	Krishna	Narayanpur Dam	492.25	492.25	89	83	93.26
45	Tunga	Upper Tunga	588.24	588.24	101	94	93.07
46	Bhadra	Bhadra Dam	657.75	657.75	48	40	83.33
47	Tungabhadra	Tungabhadra Dam	497.74	506.88	101	91	90.10
48	Krishna	Singatalur Barrage	507.00	956.59	100	100	100.00
49	Harangi	Harangi Dam	871.42	871.39	20	16	80.00
50	Hemavathy	Hemavathy Dam	890.63	890.7	58	50	86.21
51	Kabini	Kabini Dam	696.16	696.31	50	44	88.00
52	Cauvery	Krishnarajasagar	752.49	752.49	100	91	91.00
	Kerala						
53	Periyar	Idduki Dam	732.62	729.7	10	7	70.00
54	Edamalayar	Idamalayar	169.00	164.74	9	4	44.44
	Madhya Pradesh						
55	Chambal	Gandhisagar Dam	399.90	399.56	9	4	44.44
56	Betwa	Rajghat Dam	380.80	371	15	2	13.33
57	Sone	Bansagar Dam	341.65	341.52	27	7	25.93
58	Wainganga	Upper Wainganga Project	519.38	519.38	5	1	20.00
59	Pench	Totladoh Project	490.00	491.86	4	1	25.00
60	Narmada	Barna Dam	348.55	348.65	6	6	100.00
61	Narmada	Bargi Dam	422.76	423	29	29	100.00
62	Narmada	Tawa Dam	355.39	355.54	11	11	100.00

63	Narmada	Indira Sagar Dam	262.13	262.13	39	39	100.00
64	Narmada	Omkareshwar Dam	201.16	196.6	38	38	100.00
	Maharashtra						
65	Godavari	N M D Weir	533.50	533.74	0	0	-
66	Mula	Mula Dam	552.30	552.30	0	0	-
67	Godavari	Jaikwadi Dam	463.91	463.91	6	6	100.00
68	Sindhpana	Manjlegaon	431.80	431.80	0	0	-
69	Puma	Yeldari Dam	461.77	461.96	0	0	-
70	Wainganga	Goshikhurd Dam	245.50	244.46	20	12	60.00
71	Wardha	Upper Wardha Project	342.50	342.5	0	0	-
72	Penganga	Issapur/Upper Penganga Prc	441.00	441.03	0	0	-
73	Koyna	Koyna Dam	659.43	659.95	14	9	64.29
74	Warana	Warana Dam	626.90	626.9	5	4	80.00
75	Nira	Veer Dam	579.85	579.85	10	8	80.00
76	Bhima	Ujjani Dam	497.33	496.86	4	3	75.00
77	Tapi	Hatnur Dam	212.02	214.12	69	69	100.00
	NCT Delhi						
	Odisha						
78	Indravathi	Upper Indravathi Project	642.00	638.38	0	0	-
79	Kolab	Kolab Project	858.00	852.7	0	0	-
80	Machhkund	Machhkund Project	838.20	838.20	0	0	-
81	Balimela	Balimela Project	462.07	458.42	0	0	-
82	Salandi	Salandi Dam	82.30	79.7	0	0	-
83	Brahmani	Rengali Dam	123.50	123.97	9	4	44.44
84	Mahanadi	Hirakud Dam	192.02	192.02	102	100	98.04
	Rajasthan						
85	Chambal	Rana Pratap Sagar	352.80	352.38	1	0	0.00
86	Chambal	Kota Barrage	260.30	260.45	1	0	0.00
87	Banas	Bisalpur Dam	315.50	313.51	0	0	-
88	Kalisindh	Kalisindh Dam	316.00	315.99	28	14	50.00
89	Parwan	Parwan Dam	288.34	292.67	4	0	0.00
90	Gambhiri	Gambhiri Dam	431.90	426.58	1	0	0.00
91	Gambhiri	Panchana Dam	258.62	258	4	0	0.00
92	Mej	Gudha Dam	305.87	304.25	0	0	-
93	Parwati	Parwati Dam		311.05	1	0	0.00
94	Mahi	Mahi Bajajsagar Dam	281.50	281.5	9	9	100.00
95	Som Kamla	Som Kamla Amba Dam	212.50	213.5	0	0	-
	Sikkim						
96	Teesta	Teesta-III HEP Dam Chungta	1585.00	1584.6	0	0	-
97	Teesta	Teesta V HEP Dam Singtam	579.00	574.5	0	0	-

98	Rongpo	Rongpo Dam	909.00	911.58	0	0	-
99	Rongli	Rongli Dam	909.00	910.48	0	0	-
100	Rangit	Rangit-III HEP Dam	639.00	638.98	0	0	-
	Tamilnadu						
101	Cauvery	Mettur Dam	240.79	236.76	94	84	89.36
102	Bhavani	Bhavanisagar Dam	280.42	279.49	17	9	52.94
103	Kodaganar	Kodaganar Dam	200.25	195.81	0	0	-
104	Cauvery	Grand Anicut	59.21	59.21	155	132	85.16
105	Cauvery	Upper Anicut	75.05	74.4	157	136	86.62
106	Kosasthaliyar	Poondi Satyamurthy reservoi	42.67	42.67	8	2	25.00
107	Adyar	Chembarampakkam	26.03	25.68	4	0	0.00
108	South Pennar	Sathnur Dam	222.20	216.53	0	0	-
109	Gomukhinadi	Gomukhi Dam	183.18	183.12	0	0	-
110	Periyar Odai	Wellington Dam	72.54	70.46	0	0	-
111	Vaigai	Vaigai Dam	279.20	276.79	10	7	70.00
	Telangana						
112	Manjira	Singur Dam	523.60	523.99	4	2	50.00
113	Manjira	Nizamsagar Dam	428.24	428.24	5	5	100.00
114	Godavari	Sriram Sagar	332.54	332.54	27	24	88.89
115	Kaddamvagu	Kaddam Dam	213.36	213.36	0	0	-
116	Godavari	Sripada Yellampally Dam	148.00	147.99	21	18	85.71
117	Godavari	Laxmi Barrage	1000.00	99.6	56	51	91.07
118	Krishna	Priyadarshini	318.51	318.56	156	154	98.72
119	Musi	Musi Project	196.60	196.74	22	16	72.73
	Tripura						
	Uttar Pradesh						
120	Ganga	Dharmanagri Barrage	221.80	219.7	2	0	0.00
121	Ganga	Narora Barrage	180.61	179.07	30	26	86.67
122	Betwa	Matatilia Dam	308.46	308.46	15	1	6.67
123	Ghaghra	Katerniaghat Dam	138.00	138	45	45	100.00
124	Rihand	Rihand Dam	268.22	264.57	16	8	50.00
	Uttarakhand						
125	Ramganga	Kalagarh Dam	366.20	495.12	0	0	-
126	Sharda	Banbasa	222.96	222.9	7	7	100.00
	West Bengal						
127	Mayurakshi	Tilpara Barrage	62.79	62.76	34	30	88.24
128	Damodar	Durgapur Barrage	64.47	86.91	95	95	100.00
129	Kangsabati	Hinglow Dam	97.84	97.29	0	0	-
130	Kangsabati	Kangsabati Dam	134.11	131.63	29	26	89.66
			Total Inflow Forecast		**3478**	**3065**	**88.13**
			Total Level Forecast		**8243**	**8133**	**98.67**
			Total Forecast		**11721**	**11198**	**95.54**

Performance of Flood Forecasting Stations (Divisionwise) in India during Flood Season 2020

Sl. No	Division	Level Forecasts only					Inflow Forecasts only					Total Forecast Stations				
		Stns.	F/c issued for	Total	Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy
1	Himalayan Ganga Divn, Dehradun	4	1	15	14	93.33	1	0	2	0	0.00	5	1	17	14	82.35
2	Middle Ganga Division 1, Lucknow	7	1	382	381	99.74	2	0	52	52	100.00	9	1	434	433	99.77
3	Middle Ganga Division 2, Lucknow	12	4	221	219	99.10	2	1	30	26	86.67	14	5	251	245	97.61
4	Middle Ganga Division 3, Varanasi	7	5	16	16	100.00	2	0	43	15	34.88	9	5	59	31	52.54
5	Lower Ganga Division I, Patna	25	0	2838	2817	99.26	2	0	10	0	0.00	27	0	2848	2817	98.91
6	Lower Ganga Division 2, Patna	18	5	836	836	100.00	4	4	0	0	-	22	9	836	836	100.00
7	Upper Yamuna Divn, Delhi	6	6	0	0	-	1	1	0	0	-	7	7	0	0	-
8	Chambal Division, Jaipur	1	0	2	2	100.00	10	2	49	18	36.73	11	2	51	20	39.22
9	Lower Yamuna Divn, Agra	11	10	8	7	87.50	2	0	30	3	10.00	13	10	38	10	26.32
10	Damodar Divn, Asansol	4	4	0	0	-	13	5	363	351	96.69	17	9	363	351	96.69
11	Upper Brahmaputra Divn, Dibrugarh	19	4	1767	1763	99.77	0	0	0	0	-	19	4	1767	1763	99.77
12	Middle Brahmaputra Divn, Guwahati	15	3	1295	1286	99.31	0	0	0	0	-	15	3	1295	1286	99.31
13	Lower Brahmaputra Divn, Jalpaiguri	8	1	427	400	93.68	0	0	0	0	-	8	1	427	400	93.68
14	Eastern Rivers Divn, Bhubaneswar	11	1	130	110	84.62	9	5	93	65	69.89	20	6	223	175	78.48
15	Mahanadi Divn, Burla	3		30	30	100.00	3		113	109	96.46	6	0	143	139	97.20
16	Lower Godavari Divn, Hyderabad	8	0	104	91	87.50	5	4	42	42	100.00	13	4	146	133	91.10
17	Upper Godavari Division	6	4	14	12	85.71	12	6	119	106	89.08	18	10	133	118	88.72
18	Lower Krishna Divn, Hyderabad	4	1	35	26	74.29	11	0	1090	1026	94.13	15	1	1125	1052	93.51
19	Mahi Divn, Gandhinagar	3	2	3	3	100.00	6	3	28	28	100.00	9	5	31	31	100.00
20	Tapi Divn,Surat	5	3	26	26	100.00	4	0	205	201	98.05	9	3	231	227	98.27
21	Narmada Divn, Bhopal	2		52	52	100.00	5		123	123	100.00	7	0	175	175	100.00
22	Chenab Divn. Jammu	3	3	0	0	-	0	0	0	0	-	3	3	0	0	-
23	Southern River Divn. Coimbtr.	4	4	0	0	-	6	1	433	368	84.99	10	5	433	368	84.99
24	Hydrology Divn. Chennai	1	0	2	2	100.00	6	3	76	50	65.79	7	3	78	52	66.67
25	Cauvery Divn. Bangalore	0		0	0	-	8		496	433	87.30	8	0	496	433	87.30
26	UKD Pune	1	1	0	0	-	4	0	33	24	72.73	5	1	33	24	72.73
27	WGD Nagpur	4	2	25	25	100.00	5	2	29	14	48.28	9	4	54	39	72.22
28	SWRD, Kochi	3	1	15	15	100.00	2	0	19	11	57.89	5	1	34	26	76.47
29	SID Gangtak	3	3	0	0	-	5	5	0	0	-	8	0	0	0	-
Total		**198**	**69**	**8243**	**8133**	**98.67**	**130**	**42**	**3478**	**3065**	**88.13**	**328**	**111**	**11721**	**11198**	**95.54**

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2020

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy
1	Indus and its tributaries	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
2	Ganga & tributaries	134	95	39	49	36	13	4318	4292	99.40	579	465	80.31	4897	4757	97.14
3	Brahmaputra	44	39	5	14	9	5	3289	3249	98.78	0	0	-	3289	3249	98.78
4	Barak and others	6	6	0	2	2	0	200	200	100.00	0	0	-	200	200	100.00
5	Godavari	42	18	24	18	6	12	143	128	89.51	209	175	83.73	352	303	86.08
6	Krishna	22	5	17	2	2	0	35	26	74.29	1372	1269	92.49	1407	1295	92.04
7	Cauvery and tributaries	12	3	9	4	3	1	0	0	-	651	562	86.33	651	562	86.33
8	Subarnarekha including Burhabalang	7	4	3	3	1	2	81	72	88.89	69	49	71.01	150	121	80.67
9	Brahmani and Baitarni	5	3	2	1	0	1	22	15	68.18	9	4	44.44	31	19	61.29
10	Mahanadi	6	3	3	0	0	0	30	30	100.00	113	109	96.46	143	139	97.20
11	Pennr	2	1	1	0	0	0	2	2	100.00	64	48	75.00	66	50	75.76
12	Mahi	5	1	4	2	0	2	3	3	100.00	22	22	100.00	25	25	100.00
13	Sabarmati	2	1	1	1	1	0	0	0	-	6	6	100.00	6	6	100.00
14	Narmada	10	4	6	0	0	0	78	78	100.00	196	194	98.98	274	272	99.27
15	Tapi	3	1	2	1	1	0	0	0	-	129	127	98.45	129	127	98.45
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	3	3	100.00	3	3	100.00
17	East flowing rivers between Mahanadi and Pennar	8	4	4	2	0	2	27	23	85.19	15	12	80.00	42	35	83.33
18	East flowing rivers between Pennar and Kanyakumari	7	1	6	4	1	3	0	0	-	22	9	40.91	22	9	40.91
19	West flowing rivers of Kutch and saurashtra including Luni	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
20	West Flowing river Tadri to Kanyakumari	5	3	2	1	1	0	15	15	100.00	19	11	57.89	34	26	76.47
Total		**328**	**198**	**130**	**111**	**69**	**42**	**8243**	**8133**	**98.67**	**3478**	**3065**	**88.13**	**11721**	**11198**	**95.54**

Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2020

Annex VI

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)
1	Andhra Pradesh	20	10	10	3	1	2	97	81	83.51	659	608	92.26	756	689	91.14
2	Arunachal Pradesh	3	3	0	2	2	0	130	129	99.23	0	0	-	130	129	99.23
3	Assam	30	30	0	3	3	0	3094	3081	99.58	**0**	**0**	-	3094	3081	99.58
4	Bihar	43	40	3	6	5	1	3213	3192	99.35	**10**	**0**	0.00	3223	3192	99.04
5	Chattisgarh	3	1	2	0	0	0	6	5	83.33	11	9	81.82	17	14	82.35
6	Daman n Diu	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
7	Gujarat	13	6	7	5	3	2	29	29	100.00	155	151	97.42	184	180	97.83
8	Haryana	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
9	Himachal Pradesh	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
10	Jammu & Kashmir	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
11	Jharkhand	17	2	15	10	1	9	90	90	100.00	274	249	90.88	364	339	93.13
12	Karnataka	15	1	14	1	0	1	13	10	76.92	870	783	90.00	883	793	89.81
13	Kerala	5	3	2	1	1	0	15	15	100.00	19	11	57.89	34	26	76.47
14	Madhya Pradesh	12	2	10	0	0	0	52	52	100.00	183	138	75.41	235	190	80.85
15	Maharashtra	21	8	13	12	6	6	25	25	100.00	128	111	86.72	153	136	88.89
16	NCT, DELHI	2	2	0	2	2	0	0	0	-	0	0	-	0	0	-
17	Odisha	19	12	7	5	0	5	155	135	87.10	111	104	93.69	266	239	89.85
18	Rajasthan	14	3	11	4	1	3	10	9	90.00	49	23	46.94	59	32	54.24
19	Sikkim	8	3	5	8	3	5	0	0	-	0	0	-	0	0	-
20	Tamilnadu	15	4	11	8	4	4	0	0	-	445	370	83.15	445	370	83.15
21	Telangana	13	5	8	2	1	1	44	40	90.91	291	270	92.78	335	310	92.54
22	Tripura	2	2	0	2	2	0	0	0	-	0	0	-	0	0	-
23	Uttar Pradesh	44	39	5	22	22	0	803	800	99.63	108	80	74.07	911	880	96.60
24	Uttarakhand	6	4	2	2	1	1	15	14	93.33	7	7	100.00	22	21	95.45
25	West Bengal	16	12	4	6	5	1	452	426	94.25	158	151	95.57	610	577	94.59
Total		**328**	**198**	**130**	**111**	**69**	**42**	**8243**	**8133**	**98.67**	**3478**	**3065**	**88.13**	**11721**	**11198**	**95.54**

FLOOD FORECASTING PERFORMANCE FROM 2000 TO 2020

Year	No.of Level Forecasts issued			No.of Inflow Forecasts issued			Total No.of Forecasts issued		
	Total	Within +/-15 cm of deviation from actual	Accuracy (%)	Total	Within +/- 20% cumec of deviation from actual	Accuracy (%)	Total	Within +/- 15 cm or +/- 20% cumec of deviation from actual	Accuracy (%)
2000	5622	5504	97.90	821	747	90.99	6443	6251	97.02
2001	4606	4533	98.42	857	809	94.40	5463	5342	97.79
2002	3618	3549	98.09	623	602	96.63	4241	4151	97.88
2003	5989	5789	96.66	611	586	95.91	6600	6375	96.59
2004	4184	4042	96.61	705	654	92.77	4889	4696	96.05
2005	4323	4162	96.28	1295	1261	97.37	5618	5423	96.53
2006	5070	4827	95.21	1593	1550	97.30	6663	6377	95.71
2007	6516	6339	97.28	1707	1651	96.72	8223	7990	97.17
2008	5670	5551	97.90	1021	1003	98.24	6691	6554	97.95
2009	3343	3298	98.65	667	629	94.30	4010	3927	97.93
2010	6491	6390	98.44	1028	988	96.11	7519	7378	98.12
2011	4848	4795	98.91	1143	1109	97.03	5991	5904	98.55
2012	4200	4136	98.47	831	803	96.63	5031	4939	98.17
2013	5741	5471	95.30	1319	1289	97.73	7060	6760	95.75
2014	3884	3804	97.94	888	863	97.18	4772	4667	97.80
2015	3500	3429	97.97	572	562	98.25	4072	3991	98.01
2016	4969	4891	98.43	1270	1057	83.23	6239	5948	95.34
2017	5085	4975	97.84	1212	926	76.40	6297	5901	93.71
2018	4969	4871	98.03	1882	1624	86.29	6851	6495	94.80
2019	6004	5773	96.15	3750	2678	71.41	9754	8451	86.64
2020	8243	8133	98.67	3478	3065	88.13	11721	11198	95.54
Average	5089	4965	97.56	1299	1165	89.68	6388	6129	95.95

Extreme flood events in India under CWC FF & W Network - 2020 flood season										
Sl. No	River	Station	State	Danger level in metres	Existing Highest Flood Level (HFL)		New HFL		Duration	
					Level in metres	Date of occurrence	Level	Date and Time of Occurrence	From	To
1	Dikhow	Sivasagar	Assam	92.40	94.23	01-08-18	94.24	22/06/2020 0800	22/06/2020 07	22/06/2020 12
2	Gandak	Dumariaghat	Bihar	62.22	64.10	17-08-17	64.36	24/07/2020 0600	23/07/2020 16	25/07/2020 06
3	Gandak	Rewaghat	Bihar	54.41	55.41	17-09-86	55.46	24/07/2020 2300	24/07/2020 18	25/07/2020 08
4	Burhi Gandak	Rosera	Bihar	42.63	46.35	16-08-87	46.65	02/08/2020 2200	31/07/2020 06	05/08/2020 11
5	Jalaka	Mathani Road Bridge	Odisha	5.50	6.8		7.05	27/08/2020 0200	26/08/2020 22	27/08/2020 22
6	Godavari	Chinturu	Andhra Pradesh	43.00	40.45	20-08-18	44.91	18/08/2020 0500	15/08/2020 18	24/08/2020 01
7	Bhima	Deongaon Bridge	Karnataka	404.50	407.34	13-08-06	409	18/10/2020 00	17/10/2020 02	19/10/2020 07

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
1	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	536.1	11/08/2020 06	10/08/2020 05	10/08/2020 05	1	11/08/2020 06	11/08/2020 06	1
								11/08/2020 04	11/08/2020 12	1	-	-	-
								13/08/2020 06	13/08/2020 06	1	-	-	-
								19/08/2020 08	19/09/2020 09	1	-	-	-
2	Ganga	Rishikesh	Uttarakhand	339.50	340.50	339.7	11/08/2020 14	11/08/2020 13	11/08/2020 18	1	-	-	-
3	Ganga	Haridwar	Uttarakhand	293.00	294.00	293.72	11/08/2020 15	10/08/2020 13	10/08/2020 19	1	-	-	-
								11/08/2020 13	11/08/2020 21	1	-	-	-
								12/08/2020 04	12/08/2020 05	1	-	-	-
								12/08/2020 17	12/08/2020 18		-	-	-
								19/08/2020 10	19/08/2020 16	1	-	-	-
								20/08/2020 02	20/08/2020 07	1	-	-	-
4	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.1	11/08/2020 06				-	-	-
5	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	125.05	21/08/2020 03	20/08/2020 07	23/08/2020 05	4	-	-	-
6	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	123.45	21/08/2020 13	19/08/2020 08	04/09/2020 11	17	-	-	-
7	Ganga	Kanpur	Uttar Pradesh	112.00	113.00	112.12	22/08/2020 14	21/08/2020 14	24/08/2020 14	4	-	-	-
8	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	98.13	23/08/2020 20	-	-	-	-	-	-
9	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	81.55	04/09/2020 09	-	-	-	-	-	-
10	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	80.69	04/09/2020 09	-	-	-	-	-	-
11	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	74.18	04/09/2020 16	-	-	-	-	-	-
12	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	68.69	04/09/2020 23	-	-	-	-	-	-
13	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	62.15	05/09/2020 04	05/09/2020 01	05/09/2020 13	1	-	-	-
14	Ganga	Buxar	Bihar	59.32	60.32	59.1	05/09/2020 07	-	-	-	-	-	-
15	Ganga	Ballia	Uttar Pradesh	56.62	57.62	58.15	05/09/2020 08	27/08/2020 06	09/09/2020 16	14	30/08/2020 23	07/09/2020 10	9
16	Ganga	Patna Dighaghat	Bihar	49.45	50.45	50.05	22/08/2020 17	15/08/2020 18	08/09/2020 08	25	-	-	-
17	Ganga	Patna Gandhighat	Bihar	47.60	48.60	48.86	22/08/2020 12	24/07/2020 02	29/07/2020 13	6	17/08/2020 03	07/09/2020 05	22
								01/08/2020 06	12/09/2020 20	43	-	-	-
								26/09/2020 16	01/10/2020 10	6	-	-	-
18	Ganga	Hathidah	Bihar	40.76	41.76	42.13	03/09/2020 06	16/07/2020 21	19/07/2020 05	4	17/08/2020 00	08/09/2020 17	23
								23/07/2020 14	13/09/2020 11	22	-	-	-
								27/09/2020 00	02/10/2020 20	6	-	-	-
19	Ganga	Munger	Bihar	38.33	39.33	38.69	24/08/2020 07	17/08/2020 20	08/09/2020 03	23	-	-	-
20	Ganga	Bhagalpur	Bihar	32.68	33.68	33.4	24/08/2020 07	06/08/2020 12	12/08/2020 03	7	-	-	-
								16/08/2020 11	10/09/2020 06	26	-	-	-
								29/09/2020 23	02/10/2020 08	4	-	-	-
21	Ganga	Colgong/ Kahalgaon	Bihar	30.09	31.09	31.45	22/08/2020 01	13/07/2020 23	21/09/2020 19	71	26/07/2020 12	30/07/2020 20	5
								27/09/2020 01	12/10/2020 04	16	05/08/2020 01	12/08/2020 05	8
								-	-	-	17/08/2020 23	10/09/2020 02	25
								-	-	-	29/09/2020 10	03/10/2020 22	5
22	Ganga	Sahibganj	Jharkhand	26.25	27.25	28.37	24/08/2020 05	14/07/2020 13	12/10/2020 03	91	26/07/2020 17	30/07/2020 22	5
								-	-	-	03/08/2020 01	14/09/2020 23	43
								-	-	-	28/09/2020 05	04/10/2020 05	7
23	Ganga	Farakka	West Bengal	21.25	22.25	22.89	22/08/2020 13	13/07/2020 07	10/10/2020 13	59	17/07/2020 00	10/09/2020 13	25
											29/09/2020 01	03/10/2020 10	5
24	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	190.45	24/08/2020 18	20/08/2020 23	03/09/2020 10	15	-	-	-
25	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	159.98	29/08/2020 04	-	-	-	-	-	-
26	Yamuna	Mawi	Uttar Pradesh	230.00	230.85	229.9	27/08/2020 23	-	-	-	-	-	-
27	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	204.41	28/08/2020 16	-	-	-	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
28	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	164.94	30/08/2020 23	-	-	-	-	-	-
29	Yamuna	Agra	Uttar Pradesh	151.40	152.40	149.18	22/08/2020 21	-	-	-	-	-	-
30	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	118.68	25/08/2020 00	-	-	-	-	-	-
31	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	110.33	02/09/2020 14	-	-	-	-	-	-
32	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	105.09	03/09/2020 04	-	-	-	-	-	-
33	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	100.33	03/09/2020 02	-	-	-	-	-	-
34	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	95.64	03/09/2020 12	-	-	-	-	-	-
35	Yamuna	Naini	Uttar Pradesh	83.74	84.74	81.4	04/09/2020 09	-	-	-	-	-	-
36	Sahibi	Dhansa	NCT Delhi	211.44	212.44	210.7	21/08/2020 08	-	-	-	-	-	-
37	Betwa	Mohana	Uttar Pradesh	121.66	122.66	119.44	30/08/2020 20	-	-	-	-	-	-
38	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	99.74	03/09/2020 03	-	-	-	-	-	-
39	Ken	Banda	Uttar Pradesh	103.00	104.00	101.21	30/08/2020 13	-	-	-	-	-	-
40	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	105.9	13/08/2020 14	-	-	-	-	-	-
41	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	69.98	19/08/2020 01	-	-	-	-	-	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	98.94	07/07/2020 06	-	-	-	-	-	-
43	Ghaghra	Elginbridge	Uttar Pradesh	105.07	106.07	107.15	01/08/2020 08	21/06/2020 09	10/09/2020 09	82	06/07/2020 13	15/07/2020 08	10
								11/09/2020 22	13/09/2020 03	3	19/07/2020 10	25/07/2020 09	7
								25/09/2020 09	27/09/2020 22	3	27/07/2020 07	27/07/2020 20	1
								-	-	-	29/07/2020 08	08/08/2020 18	11
								-	-	-	10/08/2020 14	26/08/2020 01	17
								-	-	-	27/08/2020 13	30/08/2020 15	4
44	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	93.51	03/08/2020 08	22/06/2020 10	06/09/2020 22	77	08/07/2020 12	09/07/2020 14	2
								-	-	-	11/07/2020 12	15/07/2020 07	5
								-	-	-	20/07/2020 22	25/07/2020 06	6
								-	-	-	30/07/2020 14	08/08/2020 10	10
								-	-	-	11/08/2020 05	26/08/2020 18	16
								-	-	-	28/08/2020 03	03/08/2020 04	7
45	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	65.27	05/08/2020 06	25/06/2020 19	26/06/2020 06	2	10/07/2020 13	17/07/2020 08	8
								29/06/2020 07	16/09/2020 04	80	20/07/2020 08	02/09/2020 05	45
								18/09/2020 09	19/09/2020 11	2	27/09/2020 17	30/09/2020 22	4
								23/09/2020 20	08/10/2020 02	16			
46	Ghaghra	Darauli	Bihar	59.82	60.82	61.51	05/08/2020 10	29/06/2020 23	04/07/2020 04	6	11/07/2020 10	17/07/2020 06	7
								06/07/2020 01	06/09/2020 05	62	23/07/2020 03	27/07/2020 08	5
								24/09/2020 17	06/10/2020 03	13	31/07/2020 23	10/08/2020 21	11
								-	-	-	12/08/2020 15	27/08/2020 08	16
47	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	57.9	06/08/2020 04	09/07/2020 16	04/09/2020 18	58	24/07/2020 23	27/07/2020 11	4
								28/09/2020 13	01/10/2020 23	4	02/08/2020 03	10/08/2020 17	9
								-	-	-	14/08/2020 10	27/08/2020 13	14
48	Ghaghra	Chhapra	Bihar	52.68	53.68	51.14	06/08/2020 06	-	-	-	-	-	-
49	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	104.81	11/07/2020 18	22/06/2020 08	23/06/2020 08	2	11/07/2020 13	13/07/2020 09	3
								28/06/2020 08	01/07/2020 23	4	-	-	-
								08/07/2020 15	15/07/2020 09	8	-	-	-
								19/07/2020 14	25/07/2020 12	7	-	-	-
								29/07/2020 22	05/08/2020 08	8	-	-	-
								11/08/2020 13	18/08/2020 08	8	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								19/08/2020 20	25/08/2020 07	7	-	-	-
								27/08/2020 16	28/08/2020 17	2	-	-	-
								24/09/2020 18	28/09/2020 00	5	-	-	-
50	Rapti	Bansi	Uttar Pradesh	83.90	84.90	84.85	15/07/2020 15	10/07/2020 06	18/07/2020 05	9	-	-	-
								20/07/2020 00	28/07/2020 04	9	-	-	-
								29/07/2020 21	06/08/2020 12	9	-	-	-
								25/08/2020 01	25/08/2020 06	1	-	-	-
								25/09/2020 15	30/09/2020 06	6	-	-	-
											-	-	-
51	Rapti	Birdghat	Uttar Pradesh	73.98	74.98	76.09	26/07/2020 10	11/07/2020 12	19/08/2020 21	40	14/07/2020 18	10/08/2020 06	28
								25/09/2020 00	06/10/2020 08	12	26/09/2020 13	04/10/2020 05	9
52	Sone	Inderpuri	Bihar	107.20	108.20	104.45	21/08/2020 06	-	-	-	-	-	-
53	Sone	Koelwar	Bihar	54.52	55.52	52.7	22/08/2020 05	-	-	-	-	-	-
54	Sone	Maner	Bihar	51.00	52.00	51.64	02/09/2020 16	16/08/2020 05	08/09/2020 05	24	-	-	-
55	PunPun	Sripalpur	Bihar	49.60	50.60	51.85	16/08/2020 00	22/07/2020 00	27/07/2020 08	6	22/07/2020 15	24/07/2020 05	3
								13/08/2020 07	19/08/2020 17	7	14/08/2020 01	17/08/2020 18	4
								26/08/2020 18	02/09/2020 17	8	27/08/2020 20	31/08/2020 18	5
								23/09/2020 17	01/10/2020 05	9	24/09/2020 19	29/09/2020 12	6
56	Yamuna	Karnal Bridge	Haryana	248.80	249.50	247.42	26/08/2020 12	-	-	-	-	-	-
57	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	380.9	11/08/2020 01	-	-	-	-	-	-
58	Gandak	Khadda	Uttar Pradesh	95.00	96.00	96.48	25/09/2020 06	19/06/2020 15	24/06/2020 13	6	21/07/2020 10	22/07/2020 13	2
								27/06/2020 10	27/06/2020 21	1	24/09/2020 13	25/09/2020 23	2
								28/06/2020 08	01/07/2020 07	4	-	-	-
								07/07/2020 21	08/07/2020 21	2	-	-	-
								10/07/2020 07	16/07/2020 07	7	-	-	-
								19/07/2020 09	26/07/2020 12	8	-	-	-
								27/07/2020 08	23/08/2020 18	28	-	-	-
								09/09/2020 15	12/09/2020 20	4	-	-	-
								15/09/2020 15	17/09/2020 13	3	-	-	-
								18/09/2020 07	19/09/2020 14	2	-	-	-
								23/09/2020 22	28/09/2020 14	6	-	-	-
59	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	137.56	27/08/2020 01	02/08/2020 13	11/08/2020 07	10	-	-	-
								13/08/2020 01	05/09/2020 23	24	-	-	-
60	Ganga	Dabri	Uttar Pradesh	136.30	137.30	136.7	31/08/2020 08	20/08/2020 07	20/08/2020 11	1	-	-	-
								27/08/2020 08	06/09/2020 01	11	-	-	-
61	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	198.89	21/08/2020 03	30/07/2020 06	05/08/2020 14	7	-	-	-
								06/08/2020 05	06/08/2020 21	1	-	-	-
								10/08/2020 14	01/09/2020 21	23	-	-	-
62	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.71	16/08/2020 03	01/06/2020 18	02/06/2020 00	2	31/07/2020 23	07/08/2020 01	8
								03/06/2020 07	04/06/2020 06	2	12/08/2020 13	02/09/2020 00	22
								05/06/2020 09	02/07/2020 18	28	-	-	-
								03/07/2020 12	10/07/2020 23	8	-	-	-
								11/07/2020 18	16/07/2020 12	6	-	-	-
								21/07/2020 17	26/07/2020 16	6	-	-	-
								29/07/2020 11	10/09/2020 09	44	-	-	-
63	Gandak	Chatia	Bihar	68.15	69.15	69.38	27/09/2020 05	26/09/2020 16	30/09/2020 04	5	27/09/2020 01	28/09/2020 04	2
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.46	24/07/2020 23	22/06/2020 10	24/06/2020 11	3	15/07/2020 20	18/07/2020 22	4
								11/07/2020 13	25/08/2020 13	46	23/07/2020 00	28/07/2020 21	6
								13/09/2020 14	14/09/2020 07	2	31/07/2020 03	02/08/2020 09	3
								17/09/2020 11	22/09/2020 12	6	26/09/2020 23	29/09/2020 22	4
								25/09/2020 12	01/10/2020 14	7	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
65	Gandak	Hazipur	Bihar	49.32	50.32	49.14	23/08/2020 04	-	-	-	-	-	-
66	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	64.42	26/07/2020 04	14/07/2020 05	19/07/2020 08	6	21/07/2020 14	05/08/2020 16	16
								20/07/2020 12	10/08/2020 08	22	29/09/2020 09	03/10/2020 11	5
								13/08/2020 18	14/08/2020 18	2	-	-	-
								16/08/2020 14	20/08/2020 15	5	-	-	-
								26/09/2020 07	06/10/2020 12	11	-	-	-
67	Burhi Gandak	Muzaffarpur (Sikandarpur	Bihar	51.53	52.53	53.91	30/07/2020 05	16/07/2020 05	24/08/2020 14	40	22/07/2020 02	11/08/2020 19	21
								26/09/2020 03	10/10/2020 10	15	01/10/2020 09	07/10/2020 03	7
68	Burhi Gandak	Samastipur	Bihar	45.02	46.02	48.68	31/07/2020 08	18/07/2020 02	26/08/2020 22	40	22/07/2020 06	24/08/2020 08	34
								27/09/2020 18	12/10/2020 21	16	01/10/2020 06	11/10/2020 04	11
69	Burhi Gandak	Rosera	Bihar	41.63	42.63	46.56	02/08/2020 22	15/07/2020 19	31/08/2020 00	48	18/07/2020 15	27/08/2020 22	10
								24/09/2020 01	15/10/2020 12	22	27/09/2020 23	13/10/2020 21	17
70	Burhi Gandak	Khagaria	Bihar	35.58	36.58	37.88	06/08/2020 01	15/07/2020 11	18/09/2020 04	66	24/07/2020 20	10/09/2020 06	49
								25/09/2020 09	14/10/2020 17	20	28/09/2020 12	08/10/2020 23	11
71	Bagmati	Benibad	Bihar	47.68	48.68	49.89	24/07/2020 12	17/06/2020 15	19/10/2020 10	125	17/06/2020 19	18/06/2020 04	2
								-	-	-	19/06/2020 09	21/06/2020 03	3
								-	-	-	23/06/2020 17	24/06/2020 04	2
								-	-	-	26/06/2020 15	26/06/2020 20	1
								-	-	-	28/06/2020 20	01/07/2020 13	4
								-	-	-	08/07/2020 11	09/07/2020 02	2
								-	-	-	10/07/2020 05	30/08/2020 09	51
								-	-	-	09/09/2020 10	08/10/2020 21	30
72	Bagmati	Hayaghat	Bihar	44.72	45.72	48.11	08/08/2020 05	14/07/2020 12	03/09/2020 09	52	16/07/2020 05	30/08/2020 08	46
								23/09/2020 03	14/10/2020 05	22	28/09/2020 08	08/10/2020 01	11
73	Adhwara Group	Kamtaul	Bihar	49.00	50.00	51.88	01/10/2020 21	11/07/2020 19	19/08/2020 16	40	13/07/2020 17	12/08/2020 18	31
								17/09/2020 12	12/10/2020 16	26	19/09/2020 21	24/09/2020 18	6
											25/09/2020 12	08/10/2020 10	14
74	Adhwara Group	Ekmighat	Bihar	45.94	46.94	49.05	08/08/2020 03	13/07/2020 08	03/09/2020 23	53	15/07/2020 13	29/08/2020 23	46
								19/09/2020 03	15/10/2020 09	27	27/09/2020 12	10/10/2020 07	14
75	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	52.09	13/07/2020 14	26/06/2020 08	26/06/2020 20	1	28/06/2020 11	30/06/2020 05	3
								28/06/2020 08	17/08/2020 03	51	09/07/2020 18	26/07/2020 05	18
								24/08/2020 21	25/08/2020 04	2	28/07/2020 10	09/08/2020 04	13
								01/09/2020 15	03/09/2020 03	3	08/09/2020 11	12/09/2020 16	5
								07/09/2020 19	23/09/2020 06	17	13/09/2020 14	18/09/2020 10	6
								24/09/2020 07	04/10/2020 14	11	24/09/2020 14	01/10/2020 05	8
								06/10/2020 15	07/10/2020 09	2			
76	Kosi	Basua	Bihar	46.75	47.75	47.89	12/07/2020 05	16/06/2020 06	01/07/2020 20	16	11/07/2020 19	12/07/2020 15	2
								03/07/2020 19	29/08/2020 12	58	13/07/2020 14	14/07/2020 09	2
								05/09/2020 00	05/09/2020 07	1	-	-	-
								07/09/2020 12	21/09/2020 19	15	-	-	-
								22/09/2020 19	23/09/2020 04	2	-	-	-
								24/09/2020 16	28/09/2020 17	5	-	-	-
77	Kosi	Baltara	Bihar	32.85	33.85	35.93	26/07/2020 23	18/06/2020 05	18/10/2020 18	123	27/06/2020 19	12/10/2020 11	108
78	Kosi	Kursela	Bihar	29.00	30.00	30.49	20/08/2020 06	13/07/2020 14	11/10/2020 05	91	26/07/2020 06	10/09/2020 19	47
											29/09/2020 02	02/10/2020 20	4
79	Mahananda	Dhengraghat	Bihar	34.65	35.65	36.93	14/07/2020 03	18/06/2020 09	19/06/2020 04	2	24/06/2020 14	02/07/2020 10	9
								20/06/2020 13	21/06/2020 04	2	05/07/2020 10	07/07/2020 00	3
								23/06/2020 11	07/08/2020 04	46	11/07/2020 16	27/07/2020 09	17
								09/08/2020 10	10/08/2020 16	2	28/07/2020 11	04/08/2020 12	8
								11/08/2020 09	19/08/2020 18	9	14/08/2020 03	16/08/2020 12	3
								02/09/2020 07	04/09/2020 02	3	09/09/2020 13	11/09/2020 18	3
								08/09/2020 13	07/10/2020 04	30	16/09/2020 05	20/09/2020 15	5
											24/09/2020 00	01/10/2020 18	8
								24/06/2020 22	08/08/2020 13	46	28/06/2020 06	02/07/2020 13	5
								09/08/2020 14	10/08/2020 09	2	12/07/2020 05	05/08/2020 13	25

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
80	Mahananda	Jhawa	Bihar	30.40	31.40	32.63	28/09/2020 12	11/08/2020 15	19/08/2020 10	9	15/08/2020 14	16/08/2020 13	2
								09/09/2020 10	08/10/2020 01	30	10/09/2020 22	11/09/2020 07	2
								-	-	-	16/09/2020 21	19/09/2020 11	4
								-	-	-	21/09/2020 01	21/09/2020 08	1
								-	-	-	24/09/2020 12	03/10/2020 18	10
81	Gandak	Dumariaghat	Bihar	61.22	62.22	64.36	24/07/2020 06	16/06/2020 06	14/10/2020 15	121	21/06/2020 23	26/06/2020 09	6
								-	-	-	29/06/2020 22	30/06/2020 07	2
								-	-	-	01/07/2020 04	02/07/2020 02	2
								-	-	-	08/07/2020 11	29/08/2020 18	53
								-	-	-	09/09/2020 22	22/09/2020 08	14
								-	-	-	24/09/2020 09	03/10/2020 13	10
82	Burhigandak	Ahirwalia	Bihar	58.62	59.62	60.25	27/07/2020 06	22/07/2020 20	08/08/2020 18	18	24/07/2020 21	03/08/2020 12	11
								30/09/2020 09	05/10/2020 20	6	-	-	-
83	Mayurakshi	Narayanpur	West Bengal	26.99	27.99	25.25	30/07/2020 00	-	-	-	-	-	-
84	Ajoy	Gheropara	West Bengal	38.42	39.42	36.32	24/09/2020 12	-	-	-	-	-	-
85	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	8.58	07/08/2020 18	-	-	-	-	-	-
86	Kangsabati	Mohanpur	West Bengal	24.73	25.73	22	22/08/2020 06	-	-	-	-	-	-
87	Bagmati	Dheng Bridge	Bihar	69.10	70.10	71.62	25/09/2020 13	02/06/2020 08	03/069/2020 06	2	16/06/2020 16	16/06/2020 23	1
								14/06/2020 21	29/10/2020 17	138	17/06/2020 12	17/06/2020 21	1
								-	-	-	18/06/2020 14	21/06/2020 07	4
								-	-	-	23/06/2020 09	24/06/2020 03	2
								-	-	-	25/06/2020 13	26/06/2020 09	2
								-	-	-	27/06/2020 12	30/06/2020 06	4
								-	-	-	01/07/2020 01	01/07/2020 06	1
								-	-	-	07/07/2020 15	08/07/2020 02	2
								-	-	-	09/07/2020 16	15/07/2020 08	7
								-	-	-	19/07/2020 11	16/08/2020 23	29
								-	-	-	19/08/2020 10	22/08/2020 07	4
								-	-	-	24/08/2020 11	25/08/2020 20	2
								-	-	-	08/09/2020 12	10/09/2020 02	3
								-	-	-	11/09/2020 15	12/09/2020 14	2
								-	-	-	13/09/2020 07	16/09/2020 06	4
								-	-	-	17/09/2020 22	21/09/2020 06	5
								-	-	-	23/09/2020 08	30/09/2020 17	8
88	Adhwara	Sonebarsha	Bihar	80.85	81.85	81.52	20/07/2020 23	11/07/2020 07	11/07/2020 23	1	-	-	-
								12/07/2020 15	12/07/2020 20	1	-	-	-
								20/07/2020 08	21/07/2020 04	2	-	-	-
89	Kamla Balan	Jainagar	Bihar	66.75	67.75	68.82	11/07/2020 20	15/06/2020 11	27/10/2020 02	135	16/06/2020 19	16/06/2020 21	1
								28/10/2020 01	31/10/2020 23	4	28/06/2020 10	29/06/2020 08	2
								-	-	-	02/07/2020 18	03/07/2020 00	2
								-	-	-	09/07/2020 08	16/07/2020 14	8
								-	-	-	20/07/2020 07	25/07/2020 19	6
								-	-	-	26/07/2020 19	09/08/2020 01	15
								-	-	-	24/08/2020 18	25/08/2020 00	2
								-	-	-	01/09/2020 08	01/09/2020 16	1
								-	-	-	08/09/2020 07	12/09/2020 16	5
								-	-	-	13/09/2020 07	17/09/2020 23	5
								-	-	-	24/09/2020 08	30/09/2020 23	7
								-	-	-	05/10/2020 09	05/10/2020 17	1
90	Bagmati	Runisaidpur	Bihar	52.73	53.73	57.32	13/07/2020 06	01/06/2020 01	05/06/2020 03	5	17/06/2020 09	23/06/2020 19	7
								14/06/2020 22	30/10/2020 17	139	27/06/2020 22	30/08/2020 01	65

Above Normal and Severe flood events on main Ganga and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/Time	From	To	No.of days	From	To	No.of days
								-	-	-	08/09/2020 06	06/10/2020 22	29
91	Parwan	Araria	Bihar	46.00	47.00	48.37	28/09/2020 05	18/06/2020 07	19/06/2020 12	2	25/06/2020 14	07/07/2020 22	13
								22/06/2020 03	23/06/2020 09	2	11/07/2020 14	27/07/2020 07	17
								24/06/2020 05	19/08/2020 21	57	28/07/2020 12	04/08/2020 20	8
								08/09/2020 08	11/10/2020 14	34	11/08/2020 18	17/08/2020 04	7
								-	-	-	15/09/2020 21	03/10/2020 11	19
92	Mahananda	Taibpur	Bihar	65.00	66.00	66.94	21/07/2020 05	23/06/2020 09	30/06/2020 18	8	27/06/2020 10	28/06/2020 00	2
								02/07/2020 15	03/07/2020 09	2	10/07/2020 23	13/07/2020 15	4
								04/07/2020 00	26/07/2020 05	23	15/07/2020 23	16/07/2020 08	2
								27/07/2020 15	03/08/2020 12	8	20/07/2020 11	21/07/2020 10	2
								10/08/2020 15	12/08/2020 10	3	22/07/2020 08	23/07/2020 02	2
								13/08/2020 15	15/08/2020 15	3	28/07/2020 09	29/07/2020 07	2
								31/08/2020 10	02/09/2020 12	3	01/08/2020 10	02/08/2020 08	2
								07/09/2020 16	13/09/2020 03	7	09/09/2020 11	10/09/2020 07	2
								15/09/2020 09	19/09/2020 22	5	23/09/2020 11	24/09/2020 17	2
								23/09/2020 08	29/09/2020 03	7	25/09/2020 19	26/09/2020 10	2
								-	-	-	27/09/2020 03	27/09/2020 12	1
93	Chambal	Kota City	Rajasthan	239.00	240.00	240.2	31/08/2020 00	31/08/2020 00	31/08/2020 14	1	31/08/2020 00	31/08/2020 03	1
94	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	129.92	22/07/2020 03	-	-	-	-	-	-
95	Chambal	Dholpur	Rajasthan	129.79	130.79	134.35	01/09/2020 11	24/08/2020 14	25/08/2020 22	2	24/08/2020 17	25/08/2020 16	2
								31/08/2020 17	02/09/2020 14	3	31/08/2020 19	02/09/2020 10	3

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
1	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00	273.9	22/07/2020 11	-	-	-	-	-	-
2	Siang	Passighat	Arunachal Pradesh	152.96	153.96	154.29	12/07/2020 03	17/06/2020 12	17/06/2020 18	1	10/07/2020 20	12/07/2020 20	3
								19/06/2020 02	19/06/2020 19	1	20/07/2020 05	23/07/2020 07	4
								21/06/2020 08	25/06/2020 02	5			
								26/06/2020 03	30/06/2020 05	5			
								09/07/2020 06	27/07/2020 00	19			
								29/07/2020 10	01/08/2020 18	4			
								09/08/2020 20	21/08/2020 03	13			
								26/09/2020 08	27/09/2020 11	2			
3	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	144.73	27/09/2020 15						
4	Brahmaputra	Dibrugarh	Assam	104.70	105.70	106.11	11/07/2020 21	25/05/2020 01	27/05/2020 17	3	10/07/2020 11	13/07/2020 02	4
								18/06/2020 06	01/07/2020 01	14	20/07/2020 04	22/07/2020 17	3
								06/07/2020 20	27/07/2020 08	22			
								29/07/2020 16	01/08/2020 20	4			
								10/08/2020 06	20/08/2020 06	11			
								16/09/2020 15	18/09/2020 16	3			
								24/09/2020 21	29/09/2020 16	6			
								07/10/2020 10	08/10/2020 04	2			
5	Brahmaputra	Neamatighat	Assam	84.04	85.04	87.35	12/07/2020 11	24/05/2020 07	30/05/2020 07	7	26/05/2020 03	28/05/2020 06	3
								03/06/2020 20	03/09/2020 20	92	08/06/2020 20	09/06/2020 11	2
								06/09/2020 02	11/09/2020 00	6	18/06/2020 00	03/08/2020 05	47
								12/09/2020 11	11/10/2020 18	30	10/08/2020 09	22/08/2020 14	13
											16/09/2020 16	19/06/2020 21	4
											25/09/2020 17	30/09/2020 20	6
											06/10/2020 23	09/10/2020 12	4
6	Brahmaputra	Tezpur	Assam	64.23	65.23	66.56	13/07/2020 16	26/05/2020 20	29/05/2020 15	4	23/06/2020 21	02/07/2020 05	10
								09/06/2020 06	11/06/2020 11	3	10/07/2020 06	03/08/2020 08	25
								15/06/2020 19	28/08/2020 13	75	13/08/2020 11	21/08/2020 17	9
								31/08/2020 01	02/09/2020 19	3	18/09/2020 21	20/09/2020 05	3
								08/09/2020 10	08/09/2020 17	1	27/09/2020 07	30/09/2020 22	4
								13/09/2020 06	11/10/2020 22	29			
7	Brahmaputra	Guwahati	Assam	48.68	49.68	50.77	14/07/2020 12	28/05/2020 04	29/05/2020 18	2	26/06/2020 11	01/07/2020 14	6
								20/06/2020 07	06/07/2020 05	17	12/07/2020 05	17/07/2020 06	6
								07/07/2020 06	04/08/2020 05	29	22/07/2020 09	26/07/2020 06	5
								13/08/2020 06	23/08/2020 05	11	29/09/2020 02	01/10/2020 02	3
								18/09/2020 08	22/09/2020 01	5			
								27/09/2020 10	03/10/2020 08	7			
								08/10/2020 09	11/10/2020 13	4			
8	Brahmaputra	Goalpara	Assam	35.27	36.27	37.25	15/07/2020 03	29/05/2020 05	30/05/2020 03	2	26/06/2020 22	03/07/2020 00	8
								19/06/2020 10	07/08/2020 23	19	12/07/2020 05	28/07/2020 13	17
								12/08/2020 17	25/08/2020 14	14			
								17/09/2020 15	23/09/2020 04	7			
								28/09/2020 00	04/10/2020 02	7			
								09/10/2020 16	12/10/2020 02	4			

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
9	Brahmaputra	Dhubri	Assam	27.62	28.62	30.19	15/07/2020 12	28/05/2020 09	31/05/2020 22	**4**	23/06/2020 00	06/08/2020 17	45
								11/06/2020 08	14/06/2020 00	**4**	16/08/2020 17	19/08/2020 07	4
								17/06/2020 14	30/08/2020 04	**75**	21/08/2020 15	22/08/2020 20	2
								01/09/2020 01	04/09/2020 05	**4**	29/09/2020 12	03/10/2020 17	5
								08/09/2020 07	13/09/2020 03	**6**			
								14/09/2020 13	14/10/2020 17	**31**			
10	Buridehing	Naharkatia	Assam	119.40	120.40	118.82	25/06/2020 21						
11	Buridehing	Chenimari/Khwong	Assam	101.11	102.11	103.19	27/06/2020 04	08/06/2020 04	08/06/2020 14	**1**	25/06/2020 18	30/06/2020 12	6
								19/06/2020 17	22/06/2020 19	**4**	11/07/2020 07	15/07/2020 06	5
								24/06/2020 23	02/07/2020 20	**9**			
								08/07/2020 17	26/07/2020 03	**19**			
								16/08/2020 07	16/108/2020 12	**1**			
								18/08/2020 03	23/08/2020 20	**6**			
								16/09/2020 08	20/09/2020 00	**5**			
								28/09/2020 10	30/09/2020 20	**3**			
12	Subansiri	Badatighat	Assam	81.53	82.53	82.72	13/07/2020 01	25/06/2020 10	26/06/2020 14	**2**	12/07/2020 01	13/07/2020 16	**2**
								28/06/2020 02	30/06/2020 09	**3**			
								11/07/2020 02	16/07/2020 16	**6**			
								20/07/2020 01	26/07/2020 00	**7**			
								31/07/2020 08	02/08/2020 00	**3**			
13	Dikhow	Sivasagar	Assam	91.40	92.40	94.24	22/06/2020 08	16/06/2020 14	26/06/2020 06	**11**	18/06/2020 12	20/06/2020 03	
								27/06/2020 20	29/06/2020 06	**3**	21/06/2020 07	24/06/2020 11	
								05/07/2020 11	13/07/2020 21	**9**	07/07/2020 17	08/07/2020 04	
								09/08/2020 15	11/08/2020 17	**3**	10/08/2020 00	10/08/2020 18	
								14/08/2020 08	20/08/2020 19	**7**	14/08/2020 15	19/08/2020 14	
								21/08/2020 16	22/08/2020 19	**2**			
								05/10/2020 19	08/10/2020 12	**4**			
14	Desang	Nanglamoraghat	Assam	93.46	94.46	95.44	10/07/02020 01	17/06/2020 15	27/06/2020 21	**11**	18/06/2020 20	25/06/2020 16	8
								29/06/2020 04	15/07/2020 17	**17**	05/07/2020 21	11/07/2020 23	7
								24/07/2020 15	29/07/2020 19	**6**	19/08/2020 09	20/08/2020 09	2
								30/07/2020 09	02/08/2020 17	**4**			
								10/08/2020 07	11/08/2020 23	**2**			
								15/08/2020 07	23/08/2020 18	**9**			
								16/09/2020 20	19/09/2020 17	**4**			
15	Dhansiri(S)	Golaghat	Assam	88.50	89.50	88.77	30/07/2020 06	21/06/2020 15	22/06/2020 13	**2**			
								29/07/2020 22	30/07/2020 12	**2**			
16	Dhansiri(S)	Numaligarh	Assam	76.42	77.42	78.78	22/06/2020 03	18/06/2020 10	03/07/2020 02	**17**	21/06/2020 12	23/06/2020 07	3
								07/07/2020 02	03/08/2020 19	**27**	12/07/2020 09	14/07/2020 02	3
								15/08/2020 10	24/08/2020 01	**10**	16/07/2020 19	18/07/2020 01	3
								26/08/2020 15	27/08/2020 13	**2**	25/07/2020 10	26/07/2020 04	2
								02/09/2020 15	03/09/2020 17	**2**	30/07/2020 02	31/07/2020 01	2
								17/09/2020 13	18/09/2020 01	**2**			
								26/09/2020 09	30/09/2020 05	5			
								06/10/2020 16	09/10/2020 07	4			
								24/10/2020 00	28/10/2020 03	**5**			

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Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
17	Kopili	Kampur	Assam	59.50	60.50	61.75	28/05/2020 09	26/05/2020 09	09/06/2020 21	**15**	26/05/2020 21	31/05/2020 09	6
								27/06/2020 09	05/07/2020 01	**9**	04/06/2020 20	05/06/2020 09	12
								11/07/2020 08	19/07/2020 04	**9**	11/07/2020 13	17/07/2020 06	7
								21/07/2020 13	27/07/2020 17	**7**	21/07/2020 21	25/07/2020 14	5
								25/09/2020 23	04/108/2020 11	**10**	26/09/2020 04	30/09/2020 08	5
								25/10/2020 02	27/10/2020 14	**3**			
18	Kopili	Dharamtul	Assam	55.00	56.00	57.28	24/07/2020 12	27/05/2020 05	13/06/2020 18	**18**	29/05/2020 21	31/05/2020 18	**3**
								27/06/2020 15	07/08/2020 22	**42**	29/06/2020 07	06/07/2020 22	**8**
								25/09/2020 04	15/10/2020 04	**21**	11/07/2020 20	04/08/2020 09	**25**
								25/10/2020 00	30/10/2020 23	**6**	26/09/2020 08	10/10/2020 05	**15**
19	Jiabharali	NT.Rd.X-ing	Assam	76.00	77.00	78.14	31/07/2020 11	08/05/2020 15	09/05/2020 21	**2**	22/05/2020 02	28/05/2020 07	**7**
								13/05/2020 23	15/05/2020 21	**3**	06/06/2020 11	06/06/2020 20	**1**
								16/05/2020 18	20/05/2020 23	**5**	07/06/2020 09	09/06/2020 02	**3**
								21/05/2020 11	19/10/2020 08	**151**	13/06/2020 11	04/08/2020 18	**53**
								24/10/2020 11	28/10/2020 11	**5**	09/08/2020 10	19/08/2020 22	**11**
											29/08/2020 13	01/09/2020 15	**4**
											05/09/2020 08	05/09/2020 18	**1**
											06/09/2020 04	29/09/2020 22	**24**
											02/10/2020 12	02/10/2020 21	**1**
											04/10/2020 07	09/10/2020 16	**6**
20	Subansiri	Choldhowaghat	Assam	99.43	100.43	96.9	30/07/2020 16						
21	Ranganadi	N H Crossing Ranganadi	Assam	93.81	94.81	94.38	22/05/2020 15	22/05/2020 08	27/05/2020 11	6			
								18/06/2020 05	19/06/2020 07	2			
								20/06/2020 05	20/06/2020 17	1			
								27/06/2020 02	28/06/2020 11	2			
								09/07/2020 04	13/07/2020 12	5			
								22/07/2020 02	22/07/2020 14	1			
								28/07/2020 04	01/08/2020 13	5			
								14/08/2020 09	15/08/2020 04	2			
								16/08/2020 06	16/08/2020 11	1			
								25/09/2020 07	25/09/2020 19	1			
								05/10/2020 09	05/10/2020 11	1			
								06/10/2020 16	07/10/2020 13	2			
22	Lohit	Dholla Bazaar	Assam	127.27	128.27	128.02	11/07/2020 00	25/05/2020 17	27/05/2020 04	3			
								26/06/2020 10	28/06/2020 10	3			
								10/07/2020 00	12/07/2020 12	3			
								19/07/2020 20	22/07/2020 03	4			
								26/09/2020 17	27/09/2020 06	2			
23	Puthimari	Puthimari _NHX	Assam	50.81	51.81	54.58	12/07/2020 04	22/05/2020 08	30/05/2020 04	9	22/05/2020 09	24/05/2020 06	3
								06/06/2020 13	07/06/2020 16	2	24/05/2020 18	25/05/2020 15	1
								18/06/2020 13	22/06/2020 14	5	26/05/2020 11	28/05/2020 03	3
								25/06/2020 06	17/07/2020 17	23	19/06/2020 12	20/06/2020 03	2
								20/07/2020 18	26/07/2020 21	7	26/06/2020 02	30/06/2020 11	5
								29/07/2020 09	04/08/2020 02	7	02/07/2020 23	03/07/2020 07	2

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
								06/09/2020 14	09/09/2020 16	4	10/07/2020 11	14/07/2020 03	5
											30/07/2020 22	01/08/2020 05	3
											07/09/2020 16	08/09/2020 02	2
24	Pagladia	Pagladia_NTX	Assam	51.75	52.75	53.4	31/07/2020 02	23/05/2020 08	28/05/2020 02	**6**	26/06/2020 05	26/06/2020 08	**1**
								18/06/2020 08	20/06/2020 13	**3**	27/06/2020 10	28/06/2020 21	**2**
								24/06/2020 17	04/07/2020 04	**11**	10/07/2020 22	13/07/2020 13	**4**
								07/07/2020 10	07/07/2020 22	**1**	30/07/2020 20	01/08/2020 14	**3**
								09/07/2020 11	16/07/2020 12	**8**			
								18/07/2020 14	06/08/2020 02	**20**			
								19/08/2020 09	22/08/2020b 05	**4**			
								25/08/2020 09	25/08/2020 16	**1**			
								06/09/2020 11	11/09/2020 23	**6**			
								15/09/2020 13	19/09/2020 12	**5**			
								22/09/2020 22	28/09/2020 05	**7**			
25	Barak	APGhat	Assam	18.83	19.83	20.14	16/07/2020 09	12/07/2020 22	19/07/2020 08	**8**	15/07/2020 18	17/07/2020 10	3
								24/07/2020 07	26/07/2020 11	**3**			
26	Katakhal	Matizuri	Assam	19.27	20.27	20.9	07/10/2020 04	12/07/2020 14	15/07/2020 05	**4**	13/07/2020 07	14/07/2020 00	2
								03/08/2020 02	04/08/2020 17	**2**	06/10/2020 19	07/10/2020 22	2
								05/10/2020 03	08/10/2020 12	**4**			
27	Barak	Badarpurghat	Assam	15.85	16.85	17.07	16/07/2020 16	12/07/2020 06	27/07/2020 04	**16**	15/07/2020 23	17/07/2020 14	**3**
								30/07/2020 19	01/08/2020 02	**3**			
								07/10/2020 03	07/10/2020 23	**1**			
28	Kushiyara	Karimganj	Assam	13.94	14.94	16.07	16/07/2020 21	03/06/2020 07	09/06/2020 00	**7**	28/06/2020 19	29/06/2020 09	2
								19/06/2020 08	20/06/2020 14	**2**	12/07/2020 10	26/07/2020 23	15
								25/06/2020 15	05/08/2020 23	**42**	30/07/2020 15	01/08/2020 11	3
								11/08/2020 13	18/08/2020 05	**8**	06/10/2020 15	09/10/2020 00	4
								05/10/2020 06	10/10/2020 20	**6**			
29	Manu	Kailashar	Tripura	24.34	25.34	23.93	28/05/2020 10						
30	Gumti	Sonamura	Tripura	11.50	12.50	10.79	13/07/2020 21						
31	Manas	Mathanguri	Assam	98.10	99.10	96.65	11/07/2020 23						
32	Manas	Manas NH- Crossing	Assam	47.81	48.42	49.26	08/09/2020 15	27/05/2020 02	27/05/2020 15	**1**	26/06/2020 00	28/06/2020 14	3
								25/06/2020 12	29/06/2020 05	**5**	11/07/2020 10	14/07/2020 05	4
								01/07/2020 18	04/07/2020 06	**4**	19/07/2020 11	20/07/2020 01	2
								09/07/2020 18	10/07/2020 13	**2**	31/07/2020 13	02/08/2020 00	3
								11/07/2020 00	14/07/2020 18	**4**	07/09/2020 22	09/09/2020 16	3
								18/07/2020 18	22/07/2020 04	**5**	15/09/2020 19	18/09/2020 04	4
								24/07/2020 14	25/07/2020 03	**2**			
								30/07/2020 18	02/08/2020 14	**4**			

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
33	Beki	Beki Rd. Bridge	Assam	44.10	45.10	45.96	12/07/2020 07	31/08/2020 12	31/08/2020 22	**1**			
								06/09/2020 12	10/09/2020 05	**5**			
								14/09/2020 20	18/09/2020 21	**5**			
								25/09/2020 23	26/09/2020 14	**2**			
								21/05/2020 15	29/05/2020 05	9	22/05/2020 13	23/05/2020 03	**2**
								01/06/2020 18	29/08/2020 01	90	18/06/2020 13	20/06/2020 17	**3**
								30/08/2020 06	01/09/2020 01	3	25/06/2020 09	29/06/2020 19	**5**
								02/09/2020 13	04/09/2020 01	3	02/07/2020 19	03/07/2020 10	**2**
								05/09/2020 09	30/09/2020 03	26	07/07/2020 11	08/07/2020 01	**2**
								02/10/2020 18	02/10/2020 22	1	09/07/2020 08	27/07/2020 16	**19**
								05/10/2020 13	08/10/2020 01	4	29/07/2020 10	02/08/2020 11	**5**
											11/08/2020 18	12/08/2020 16	**2**
											08/09/2020 04	08/09/2020 11	**1**
34	Gaurang	Kokrajhar	Assam	41.85	42.85	43.26	31/07/2020 15	19/06/2020 19	20/06/2020 05	**2**	11/07/2020 04	11/07/2020 12	1
								24/06/2020 08	30/06/2020 08	**7**	21/07/2020 03	22/07/2020 23	2
								01/07/2020 12	04/07/2020 15	**4**	30/07/2020 14	01/08/2020 04	3
								09/07/2020 09	14/07/2020 11	**6**	15/09/2020 11	16/09/2020 00	2
								14/07/2020 14	25/07/2020 17	**12**			
								26/07/2020 13	26/07/2020 23	**1**			
								27/07/2020 10	27/07/2020 21	**1**			
								29/07/2020 13	03/08/2020 03	**6**			
								10/08/2020 13	12/08/2020 02	**3**			
								31/08/2020 07	01/09/2020 01	**1**			
								06/09/2020 18	09/09/2020 16	**4**			
								11/09/2020 08	11/09/2020 16	**1**			
								12/09/2020 18	18/09/2020 17	**7**			
								23/09/2020 13	24/09/2020 15	**2**			
								25/09/2020 21	27/09/2020 04	**3**			
35	Sankosh	Golokganj	Assam	28.94	29.94	30.5	12/07/2020 08	17/06/2020 14	21/08/2020 23	**5**	26/06/2020 06	26/06/2020 12	**1**
								23/08/2020 17	25/08/2020 09	**3**	27/06/2020 19	28/06/2020 13	**2**
								08/09/2020 18	09/09/2020 19	**2**	11/07/2020 00	16/07/2020 07	**6**
								14/09/2020 06	19/09/2020 11	**6**	18/07/2020 13	20/07/2020 04	**3**
								24/09/2020 03	29/09/2020 15	**6**	21/07/2020 03	26/07/2020 06	**6**
											31/07/2020 04	02/08/2020 11	**3**
								18/06/2020 10	18/06/2020 21	**1**	10/07/2020 08	10/07/2020 09	1
								19/06/2020 08	20/06/2020 03	**2**	11/07/2020 11	11/07/2020 14	1
								25/06/2020 14	28/06/2020 18	**4**	12/07/2020 05	12/07/2020 22	1

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
36	Teesta	Domohani	W.B.	85.65	85.95	86.23	12/07/2020 12	03/07/2020 10	03/07/2020 23	**1**	22/07/2020 04	22/07/2020 06	1
								07/07/2020 08	07/07/2020 15	**1**			
								08/07/2020 08	08/07/2020 13	**1**			
								09/07/2020 23	13/07/2020 21	**5**			
								14/07/2020 07	14/07/2020 12	**1**			
								15/07/2020 14	15/07/2020 18	**1**			
								16/07/2020 20	16/07/2020 23	**1**			
								17/07/2020 11	17/07/2020 17	**1**			
								20/07/2020 12	21/07/2020 06	**2**			
								21/07/2020 21	22/07/2020 18	**1**			
								28/07/2020 06	28/07/2020 21	**1**			
								30/07/2020 09	31/07/2020 15	**2**			
								01/08/2020 08	01/08/2020 21	**1**			
								06/08/2020 06	06/08/2020 16	**1**			
								07/09/2020 06	08/09/2020 18	**2**			
								09/09/2020 06	09/09/2020 15	**1**			
								23/09/2020 04	24/09/2020 06	**2**			
37	Teesta	Mekhliganj	W.B.	65.45	65.95	66.07	12/07/2020 19	12/07/2020 12	13/07/2020 09	2	12/07/2020 17	13/07/2020 01	2
								22/07/2020 07	22/07/2020 21	1			
								31/07/2020 12	31/07/2020 15	1			
								01/08/2020 22	02/08/2020 01	2			
								06/08/2020 16	07/08/2020 01	2			
								10/08/2020 07	12/08/2020 14	3			
								07/09/2020 17	07/09/2020 21	1			
								09/09/2020 14	09/09/2020 23	1			
								23/09/2020 17	24/09/2020 09	2			
38	Jaldhaka	N H 31	W.B.	80.00	80.90	80.27	11/07/2020 10	02/07/2020 12	02/07/2020 20	1			
								03/07/2020 18	04/07/2020 03	2			
								10/07/2020 11	13/07/2020 05	4			
								20/07/2020 18	21/07/2020 13	2			
								22/07/2020 07	22/07/2020 21	1			
								23/09/2020 11	24/09/2020 05	2			
								25/09/2020 23	26/09/2020 05	2			
39	Jaldhaka	Mathabhanga	W.B.	47.70	48.20	48.57	22/07/2020 14	02/07/2020 21	03/07/2020 07	2	11/07/2020 20	12/07/2020 22	2
								11/07/2020 01	13/07/2020 09	3	22/07/2020 09	22/07/2020 18	1
								21/07/2020 04	21/07/2020 09	1			
								22/07/2020 07	23/07/2020 03	2			
								15/09/2020 01	16/09/2020 06	2			
								23/09/2020 22	24/09/2020 13	2			

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	From	From	To	No.of days	From	To	No.of days
40	Torsa	Ghughumari	W. B.	39.80	40.41	40.35	12/07/2020 00	16/06/2020 16	17/06/2020 06	2			
								24/06/2020 20	28/06/2020 16	5			
								02/07/2020 06	04/07/2020 09	3			
								10/07/2020 13	13/07/2020 18	4			
								20/07/2020 19	22/07/2020 22	3			
								12/09/2020 14	12/09/2020 19	1			
								14/09/2020 18	18/09/2020 06	5			
								23/09/2020 14	24/09/2020 06	2			
								27/09/2020 07	27/09/2020 18	1			
41	Radak-I	Tufanganj	W. B.	34.22	35.30	35.76	13/07/2020 12	25/06/2020 15	30/06/2020 21	6	03/07/2020 13	03/07/2020 16	1
								02/07/2020 16	05/07/2020 11	4	12/07/2020 18	14/07/2020 16	3
								11/07/2020 11	16/07/2020 13	6	15/09/2020 18	16/09/2020 23	2
								18/07/2020 16	20/07/2020 10	3			
								21/07/2020 17	23/07/2020 12	3			
								31/07/2020 05	02/08/2020 10	3			
								14/09/2020 20	19/09/2020 03	6			
								24/109/2020 01	29/09/2020 00	6			
42	Teesta	Malli Bazaar	Sikkim	223.00	224.00	218.32	11/07/2020 06						
43	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	349.29	06/08/2020 06						
44	Teesta	Singtam	Sikkim	377.07	377.57	375.13	02/07/2020 14						
45	Torsa	Hasimara	West Bengal	116.30	116.90	116.2	11/07/2020 16						

Annex XI

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
1	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.53	1586.45	1585.02	28/08/2020 16	-	-	-	-	-	-
2	Jhelum	Sangam	Jammu & Kashmir	1590.30	1592.00	1590.02	28/08/2020 07	-	-	-	-	-	-
3	Jhelum	Safapora	Jammu & Kashmir	1580.00	1580.80	1579..61	29/08/2020 03	-	-	-	-	-	
4	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	122.5	27/08/2020 03	27/08/2020 03	27/08/2020 05	1	-	-	-
5	Subernarekna	Rajghat	Odisha	9.45	10.36	10.96	28/08/2020 03	27/08/2020 12	29/08/2020 18	3	28/08/2020 01	29/08/2020 08	2
6	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	8.4	27/08/2020 12	26/08/2020 14	29/08/2020 01	4	27/08/2020 08	28/08/2020 05	2
7	Baitarni	Anandpur	Odisha	37.44	38.36	40.9	27/08/2020 06	26/08/2020 07	28/08/2020 14	3	26/08/2020 08	28/08/2020 06	3
8	Baitarni	Akhuapada	Odisha	17.83	17.83	20.06	27/08/2020 17	20/08/2020 23	22/08/2020 09	3	20/08/2020 23	22/08/2020 09	3
								26/08/2020 11	29/08/2020 15	4	26/08/2020 11	29/08/2020 15	4
9	Brahmani	Jenapur	Odisha	22.00	23.00	23.46	28/08/2020 17	27/08/2020 08	30/08/2020 04	4	28/08/2020 00	29/08/2020 02	2
10	Rushikuluya	Purushottampur	Odisha	15.83	16.83	16.36	14/10/2020 08	14/10/2020 01	15/10/2020 02	1	-	-	-
11	Vamsadhara	Gunupur	Odisha	83.00	84.00	83.02	14/10/2020 19	14/10/2020 18	14/10/2020 20	1	-	-	-
12	Vamsadhara	Kashinagar	Odisha	54.10	54.60	54.88	14/10/2020 13	21/09/2020 23	22/09/2020 12	2	13/10/2020 23	15/10/2020 08	3
								13/10/2020 19	17/10/2020 15	5	-	-	-
								18/10/2020 00	18/10/2020 15	1	-	-	-
13	Mahanadi	Naraj	Odisha	25.41	26.41	26.96	31/08/2020 17	22/08/2020 19	23/08/2020 07	2	29/08/2020 03	02/09/2020 03	5
								27/08/2020 03	04/09/2020 04	9	-	-	-
14	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	11.33	31/08/2020 15	29/08/2020 21	02/09/2020 04	5	-	-	-
15	Mahanadi	Nimapara	Odisha	9.85	10.76	10.14	31/08/2020 22	30/08/2020 14	02/09/2020 08	4	-	-	-
16	Godavari	Atreyapuram	Andhra Pradesh	14.00	15.50	14.16	18/08/2020 14	18/08/2020 06	19/08/2020 03	2	-	-	-
17	Godavari	Kopergaon	Maharashtra	490.90	493.68	489.8	20/09/2020 20	-	-	-	-	-	-
18	Godavari	Gangakhed	Maharashtra	374.00	375.00	372.19	27/09/2020 16	-	-	-	-	-	-
19	Godavari	Nanded	Maharashtra	353.00	354.00	348.9	28/09/2020 03	-	-	-	-	-	-
20	Godavari	Kaleswaram	Telangana	103.50	104.75	103.58	02/09/2020 12	02/09/2020 03	02/09/2020 15	1	-	-	-
21	Godavari	Eturunagaram	Telangana	73.32	75.82	75.44	17/08/2020 05	15/08/2020 23	18/08/2020 14	4	-	-	-
								20/08/2020 09	23/08/2020 02	4	-	-	-
								02/09/2020 16	03/09/2020 04	2	-	-	-
22	Godavari	Dummagudam	Telangana	53.00	55.00	57	17/08/2020 13	16/08/2020 04	18/08/2020 21	3	16/08/2020 13	18/08/2020 05	3
								20/08/2020 13	23/08/2020 06	4	21/08/2020 07	21/08/2020 22	1
23	Godavari	Bhadrachalam	Telangana	45.72	48.77	51.38	17/08/2020 18	15/08/2020 05	24/08/2020 05	10	16/08/2020 15	18/08/2020 15	3
								-	-	-	21/08/2020 01	22/08/2020 09	2
24	Wardha	Sirpur Town	Telangana	159.95	160.95	157.8	31/08/2020 08	-	-	-	-	-	-
25	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	44.79	18/08/2020 04	15/08/2020 08	24/08/2020 20	10	15/08/2020 22	24/08/2020 09	10
26	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	18.82	18/08/2020 10	14/08/2020 17	17/08/2020 16	4	-	-	-
								19/08/2020 00	21/08/2020 15	3	-	-	-
27	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	16.74	18/08/2020 12	15/08/2020 13	25/08/2020 10	11	17/08/2020 15	19/08/2020 15	3
								-	-		21/08/2020 21	23/08/2020 10	3

Annex XI

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
28	Wainganga	Bhandara	Maharashtra	245.50	245.70	250.61	30/08/2020 19	29/08/2020 03	01/09/2020 06	4	29/08/2020 04	01/09/2020 05	4
29	Wainganga	Pauni	Maharashtra	226.73	227.73	232.75	31/08/2020 01	29/08/2020 06	01/09/2020 03	4	29/08/2020 10	01/09/2020 02	4
30	Wardha	Balharsha	Maharashtra	171.50	174.00	166.51	31/08/2020 01	-	-	-	-	-	-
31	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	542.5	21/08/2020 22	20/08/2020 04	23/08/2020 03	4	20/08/2020 10	22/08/2020 21	3
32	Krishna	Arjunwad	Maharashtra	542.07	543.29	538.99	19/08/2020 07	-	-	-	-	-	-
33	Bhima	Deongaon	Karnataka	402.00	404.50	409	18/10/2020 00	20/09/2020 10	21/09/2020 08	2	15/10/2020 13	20/10/2020 01	6
								15/10/2020 06	21/10/2020 14	7	-	-	-
34	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	310.87	22/09/2020 06	19/08/2020 21	20/08/2020 16	2	-	-	-
								11/09/2020 04	11/09/2020 08	1	-	-	-
								22/09/2020 00	22/09/2020 22	1	-	-	-
								23/09/2020 12	24/09/2020 05	2	-	-	-
								27/09/2020 06	28/09/2020 01	2	-	-	-
								22/10/2020 09	22/10/2020 17	1	-	-	-
35	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	272.4	20/08/2020 16	-	-	-	-	-	-
36	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	10.43	15/10/2020 14	14/10/2020 07	14/10/2020 21	**1**	-	-	-
								15/10/2020 08	16/10/2020 06	**2**	-	-	-
37	Pennar	Nellore	Andhra Pradesh	15.91	17.28	16.15	27/11/2020 16	27/11/2020 13	27/11/2020 17	**1**	-	-	-
								29/11/2020 06	29/11/2020 06	**1**	-	-	-
38	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat	44.09	45.34	42.3	14/09/2020 15	-	-	-	-	-	-
39	Mahi	Wanakbori	Gujarat	71.93	74.98	72.93	31/08/2020 00	30/08/2020 17	31/08/2020 10	2			
40	Naramada	Mandla	Madhya Pradesh	437.20	437.80	439.04	19/08/2020 00	17/08/2020n 10	18/08/2020 05	2	18/08/2020 16	19/08/2020 09	2
								18/08/2020 14	19/08/2020 12	1	28/08/2020 23	29/08/2020 14	2
								28/08/2020 18	29/08/2020 21	2	-	-	-
41	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	299.6	29/08/2020 23	22/08/2020 12	22/08/2020 16	**1**	29/08/2020 01	01/09/2020 06	4
								28/08/2020 23	01/09/2020 11	**5**	-	-	-
											-	-	-
42	Naramada	Garudeswar	Gujarat	30.48	31.09	33.1	01/09/2020 15	30/08/2020 20	02/09/2020 00	**4**	30/08/2020 21	01/09/2020 23	3
43	Naramada	Bharuch	Gujarat	6.71	7.31	10.72	01/09/2020 22	30/08/2020 06	03/09/2020 00	5	30/08/2020 08	02/09/2020 22	4
44	Tapi	Surat	Gujarat	8.50	9.50	6.4	24/08/2020 20	-	-	-	-	-	-
45	Damanganga	Vapi Town	Gujarat	18.20	19.20	17	05/08/2020 04	-	-	-	-	-	-
46	Damanganga	Daman	Dadra & Nagar Have	2.60	3.40	2.2	07/06/2020 15	-	-	-	-	-	-
47	Cauvery	Musiri	Tamilnadu	82.11	83.11	82	21/10/2020 10	-	-	-	-	-	-
48	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	124.37	19/09/2020 23	-	-	-	-	-	-
49	Bhavani	Savandapur	Tamilnadu	184.50	185.50	181.65	10/09/2020 00	-	-	-	-	-	-

Annex XI

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2020 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2020		Flood period above warning level			Flood period above danger level		
						Level in metres	Time	From	To	No. of days	From	To	No. of days
50	Sabari	Chinturu	Andhra Pradesh	41.50	43.50	44.91	18/08/2020 05	16/08/2020 10	19/08/2020 18	4	21/08/2020 06	23/08/2020 01	3
51	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	10.41	15/10/2020 12	28/09/2020 17	29/09/2020 18	2	-	-	-
								15/10/2020 01	20/10/2020 07	6	-	-	-
52	Periyar	Neeleswaram	Kerala	9.00	10.00	7.59	07/08/2020 04	-	-	-	-	-	-
53	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	9.27	07/08/2020 23	07/08/2020 07	09/08/2020 05	3	07/08/2020 19	08/08/2020 06	2
54	Pamba	Malakkara	Kerala	6.00	7.00	7.27	08/08/2020 03	07/08/2020 16	10/08/2020 12	4	07/08/2020 21	08/08/2020 09	2
55	Godavari	Nasik	Maharashtra	558.10	559.60	556.21	12/06/2020 19	-	-	-	-	-	-
56	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	7.05	27/08/2020 02	16/06/2020 08	17/06/2020 00	2	16/06/2020 08	17/06/2020 00	2
								29/06/2020 10	30/06/2020 00	2	29/06/2020 10	30/06/2020 00	2
								07/07/2020 12	07/07/2020 23	1	07/07/2020 12	07/07/2020 23	1
								24/07/2020 15	25/07/2020 00	2	24/07/2020 15	25/07/2020 00	2
								16/08/2020 03	18/08/2020 03	3	16/08/2020 03	18/08/2020 03	3
								19/08/2020 08	31/08/2020 09	13	19/08/2020 08	31/08/2020 09	13
								02/09/2020 14	03/09/2020 03	2	02/09/2020 14	03/09/2020 03	2
								22/09/2020 04	23/09/2020 02	2	22/09/2020 04	23/09/2020 02	2
								27/09/2020 11	28/09/2020 05	2	27/09/2020 11	28/09/2020 05	2
								03/10/2020 07	09/10/2020 12	7	03/10/2020 07	09/10/2020 12	7
57	Banas	Abu Road	Rajasthan	258.00	259.00	256.76	23/08/2020 07	-	-	-	-	-	-
58	Vaigai	Madurai	Tamilnadu	131.50	132.50	131.29	02/10/2020 13	-	-	-	-	-	-

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