GOVERNMENT OF INDIA
CENTRAL WATER COMMISSION

Silchar (Assam) flood in June 2022

FLOOD FORECASTING AND WARNING NETWORK
PERFORMANCE APPRAISAL REPORT 2022

NEW DELHI - 110066 **July, 2024**

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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 2022, the flood forecasting services are expanded to 333 stations which comprised of 199 level and 134 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 36 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 and also monitors the flood situation and enters data in **http://india-water.gov.in/wims** website. During Flood Season 2022, level forecasts were issued for 146 stations out of 199 stations and inflow forecasts were issued for 89 reservoir/ dam/barrages out of 134 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 2022 flood season, 11 Flood Forecast stations flowed in Extreme Flood situation. Severe Flood situation was witnessed in 95 Flood Forecasting Stations and 42 Flood forecast stations witnessed Above Normal Flood Situation. The major flood events this year was the Extreme Floods witnessed in Assam, Bihar, Uttar Pradesh, Telangana, Rajasthan and Andhra Pradesh state.

During the year 2022, 11558 forecasts were issued out of which 10845 forecasts (93.83%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2022 were 6779 out of which 6476 (95.53%) was within the limit of accuracy of ± 0.15 m. The number of inflow forecasts issued were 4779 out of which 4369 (91.42%) 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 Andhra Pradesh, Tamilnadu, Karnataka, Kerala, Puduchherry, Uttar Pradesh and Bihar 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 2021 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 under FMO 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 2022 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 incorporate in the next edition.

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New Delhi
July ,2024

(P Manroi Scott)
Member (RM)

CONTENTS

EXECUTIVE SUMMARY

0.1 METEOROLOGICAL SITUATION

During 2022, the performance of southwest monsoon is given as below.

- The southwest monsoon seasonal rainfall during June to September for the country as a whole had been above normal (105 -110% of Long Period Average (LPA)). (LPA-- Long Period Average)

- Quantitatively, the 2022 all India monsoon seasonal rainfall during 1 June to 30 September 2022 had been 92.5 cm against LPA of 87.0 cm based on data of 1971-2020 (106% of its LPA).

- The southwest monsoon seasonal (June to September) rainfall over the four homogeneous regions was Normal over Northwest India (101%). Seasonal rainfall was below normal over East and Northeast India (82%) and above normal over central India (119%), and South Peninsula India (122%).

- The southwest monsoon seasonal (June to September) rainfall over the monsoon core zone, which consists of most of the rainfed agriculture regions in the country had been above normal (>106% of LPA).

- Out of the total 36 meteorological subdivisions, 18 subdivisions constituting 43% of the total area of the country received normal seasonal rainfall, 12 subdivisions received excess rainfall (40% of the total area) and 6 subdivisions (17% of the total area) received deficient seasonal rainfall. These 6 Met subdivisions which received deficient rainfall are Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Jharkhand, Bihar, East Uttar Pradesh and West Uttar Pradesh. Out of these 6 Subdivisions, 4 lie in northeast India and 2 lie in Northwest India.

- The rainfall over country as a whole was 92%, 117%, 104% and 108% of LPA during June, July, August and September, respectively.

0.2 FLOOD SITUATION

Extreme flood situation was witnessed in 11 Flood Forecasting stations, Severe Flood situation was witnessed in 95 Flood Forecasting Stations and 42 Flood forecast stations witnessed Above Normal Flood Situation. No flood forecasts were issued for 98 flood forecasting stations which include 53 level forecasting stations and 45 inflow forecasting stations. Out of the 134 reservoirs in the network, inflow forecasts were issued at 89 reservoirs and in 45 reservoirs the inflows did not exceed the criteria for issuing inflow forecasts. The significant flood event of this

year was the Extreme Floods witnessed in Assam, Bihar, Uttar Pradesh, Telangana, Rajasthan and Andhra Pradesh state.

0.3 FLOOD FORECASTING PERFORMANCE

11,558 forecasts were issued during the year 2022, out of which 10,845 forecasts (93.83%) were found to be within the limits of accuracy. 6779 level forecasts were issued during the year 2022 out of which 6476 (95.53%) were within the limit of accuracy of ±0.15 m. 4779 inflow forecasts were issued out of which 4369 (91.42%) 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 reports were sent to all beneficiaries including State Governments through e-mail on a daily basis. In addition, long term i.e. 5 day advisory forecast was also disseminated through online portal in automated mode using IMD rainfall forecast and global GPM rainfall data.

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 Engineers' offices (including one CE, Flood Management, at CWC headquarters)	15
6.	No. of Superintending Engineers' offices (including one Flood Forecast Monitoring Directorate at CWC headquarter)	20
7.	No. of Flood Forecasting Divisions (As of 2022)	36
8.	No. of states including union territories covered under Flood Forecasting Programme	25
9.	No. of forecasting sites	333
10.	No. of gauge and gauge & discharge sites	1569
11.	No. of Telemetry Stations installed	1043
13.	No. of forecasts issued in flood season 2018	6851
14.	No. of forecasts issued in flood season 2019	9754
15.	No. of forecasts issued in flood season 2020	11721
16.	No. of forecasts issued in flood season 2021	10617
17.	No. of forecasts issued in flood season 2022	11558

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 RBA) of the country has been provided with reasonable protection against flood of a low magnitude due to technological and economical constraints but there is no protection from floods of higher magnitude. Since the 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 INDIA

Flood Forecasting has been recognized as the most important and cost effective non-structural measure for flood management. Recognizing this, flood forecasting of river Yamuna at Delhi was suggested by the Reddy Committee set up by the then Hon'ble Prime Minister, Govt. of India to manage floods in Delhi. Accordingly in the year 1958, CWC commenced the flood forecasting services in a small way by establishing a 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, with this, total number of forecasting sites aggregating 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 2022 in the network of Central Water Commission are shown in the **Table -1.1** and **Fig 1.1.** The details of year wise expansion of Flood Forecasting Stations are shown in **Annex –I** (2017-2022).

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

Year	Cumulative No. of Flood Forecasting Sites
1958	01
1965	02
1969	43
1977	77
1980	84
1985	145
1987	147
1990	157
2001	159
2002	161
2003	166
2004	172

2005	173
2006	175
2015	176
2016	199
2017	226
2018	249
2019	325
2020	328
2021	331
2022	333

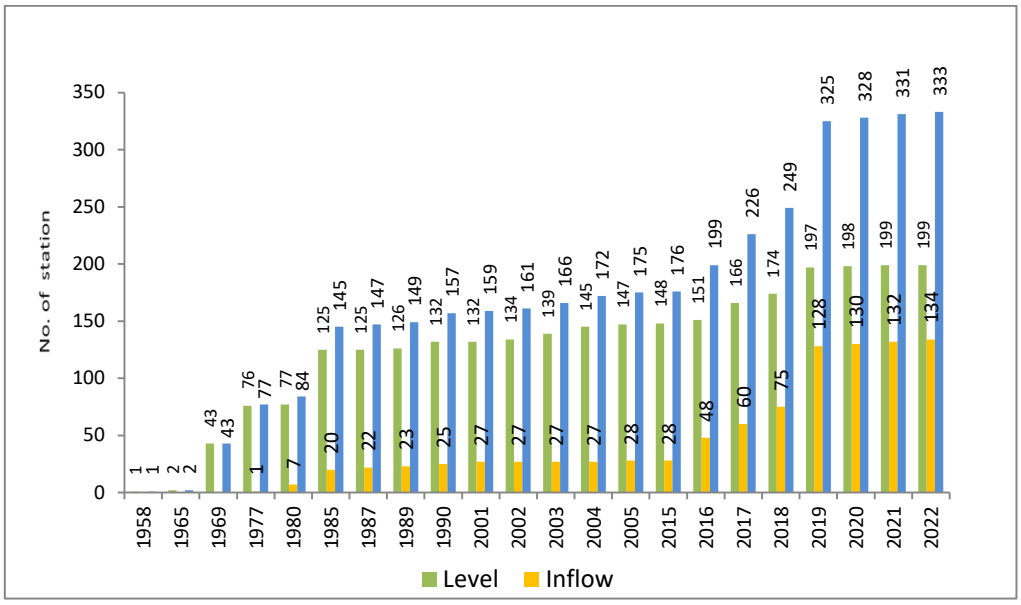
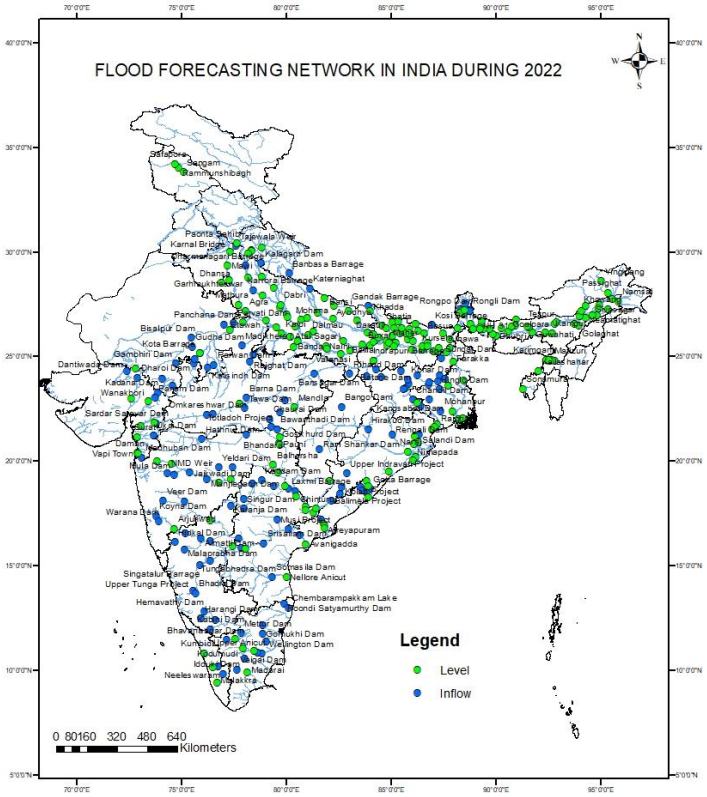


Fig 1.1: Year wise expansion of Flood Forecasting stations

The 'National Flood Forecasting and Warning Network' of Central Water Commission, which comprised of 333 flood forecasting sites including 134 inflow forecasting sites in flood season 2022 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**.



Map - 1: Flood Forecasting Network in India

Table - 1.2: 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	96	40	**136**
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	25	**43**
14	Krishna	5	19	**24**
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		**199**	**134**	**333**

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	12	14
13	Maharashtra	8	14	22
14	Odisha	12	7	19
15	Rajasthan	4	11	15
16	Sikkim	3	5	8
17	Tamil Nadu	4	11	15
18	Telangana	5	9	14
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		**199**	**134**	**333**

Central Water Commission through its 29 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 3 different categories, depending upon the severity of floods i.e. based on floods magnitudes.

(i) ABOVE NORMAL FLOOD

The river stage is said to be in **'ABOVE NORMAL'** situation at any Hydrological Observation station 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 river is in a '**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 so far at any water level station.

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 modeling 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 (6 hourly updates) and extreme (3 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 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

1.4.1 CAP ALERT THROUGH C-DOT IN ASSOCIATION WITH NDMA:

Common Alert Protocol (CAP) alerts are generated through an application developed by Centre for Development of Telematics (C-DoT) in association with NDMA. CAP alerts was first implemented during 2021 for Tamilnadu as a pilot project. In 2022 CAP alerts were issued pan India level through dedicated website https://platform.sachetdashboard.ndma.gov.in/. These alerts will be initially dispatched to the first beneficiary viz. SDMAs, who will in turn make

understandable warnings to warn the general public. CWC (HQ) uploaded the alerts related to the level forecast to the dedicated website. In 2022, CWC disseminated 165 CAP alerts to concerned SDMA's.

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 **is shown in Annex – II**. The basin-wise as well as state-wise details of level and inflow sites during the flood season 2022, is shown at**, Annex – III (A & B)** and **Annex – IV (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 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, 1043 telemetry stations have been installed.

The telemetry data received was mainly used by the divisions for formulating flood forecast. The telemetry data is also directly transferred to WIMS as central repository. Expansion of telemetry network is shown in **Fig 1.2** and **Table - 1.4.**

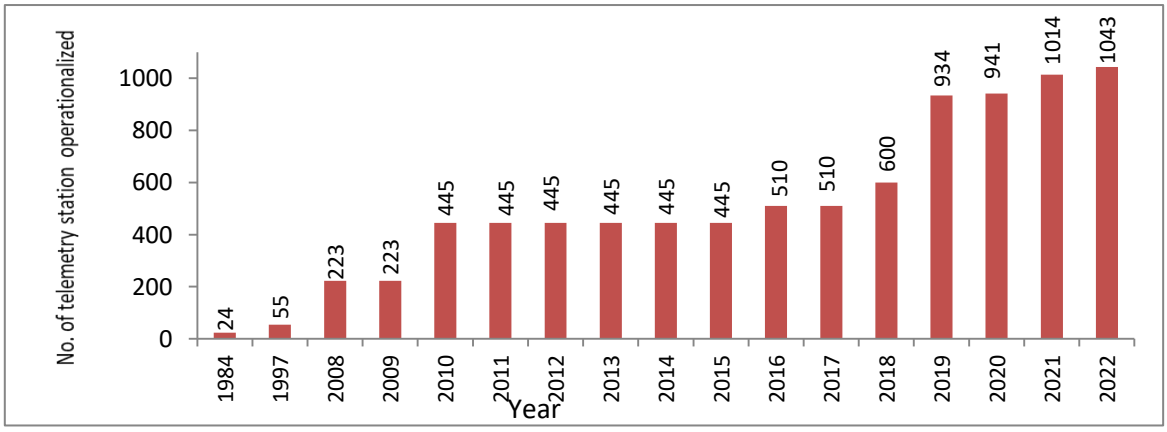


Fig. 1.2: Expansion of Telemetry Network

Table 1.4: TELEMETRY STATUS

Plan	No. of Stations with telemetry	Basins	No.
IX	55	Chambal	
		Upper Mahanadi Basin	
X	168	Godavari	63
		Krishna	41
		Brahmaputra	21
		Damodar	20
		Yamuna	15
		Mahanadi	8
XI	222	Indus	4
		Ganga	63
		Yamuna	25
		Narmada & Tapi	76
		Mahanadi	36
		Brahmaputra	14
		Godavari	4
XII	515	Brahmaputra	67
		Yamuna	51
		Godavari	25
		Pennar	5
		Krishna	15
		Eastern River	30
		Teesta	50
		Narmada	12
		Ganga	153
		Chenab	4
		Mahi Tapi	24
		Southern River	38
		Cauvery	32
		Wainganga	9
XIV	83 (Under 125)	Ganga	42
		Krishna	12
Earth Receiving Centre		: **3** (New Delhi, Jaipur, Burla)	
Modelling Centre		: **27** (Agra, Asansol, Bengaluru, Bhubaneshwar, Burla, Bhopal, Chennai, Haridwar, Dibrugarh, Gandhinagar, Gangtok, Guwahati, Hyderabad (2 Nos.- one each for Krishna and Godavari basins), Jaipur, Jalpaiguri, Nagpur, Two at Lucknow, Bhusawal, Maithon, New Delhi (2 Nos.- One each at headquarter and Yamuna basin), Patna, Shimla, Surat and Varanasi.	

1.7 DAMAGE DUE TO FLOODS/ HEAVY RAINS BETWEEN 1953 TO 2022

The damage due to floods for the entire country was Rs. 25116.43 Crore during the flood season 2022. The average annual damage to crops, houses and public utilities from the year 1953 to 2022 as reported by the States/ UTs is of the order of Rs. 7055 Crore. The maximum annual damage reported was Rs. 57291.098 Crore during 2015.

Comparative details showing the details of damages occurred during the flood season 2020 to 2022 on different accounts, received from the revenue authorities of the State Governments are given in the **Table - 1.5**.

Table 1.5: Damages occurred during flood season 2020 to 2022

Sl. No.	Items	Flood Damages				Flood Damages (1953 - 2022)	
		2020	2021	2022	Average (1953-2022)	Maximum	
						Year	Damage
1	Area affected (mha)	6.90	16.75	1.6	7.38	1978	17.50
2	Population affected (millions)	27.43	38.57	14.31	32.34	1978	70.45
3	Damage to Crops (mha)	6.55	7.79	5.47	4.11	2005	12.30
4	Damage to crops (Rs. Crore)	5626.02	22809.18	5954.74	2235.82	2021	22809.18
5	Damage to houses (numbers)	237196	461205	270327	1202701	2015	3959191
6	Damage to houses (Rs. Crore)	272.10	3960.07	1685.33	883.74	2009	10809.80
7	Cattle lost (number)	47463	64880	60742	90548	1979	618248
8	Human lives lost (numbers)	1815	1371	668	1671	1977	11316
9	Damage to public Utilities (Rs. Crores)	5458.01	25243.61	5955.01	3759.32	2013	38937.84
10	Total damages to crops, houses & public utilities (Rs. crores)	21189.17	49617.62	25116.43	7054.74	2015	57291.10

*Flood damage statistics as available for States included are Andhra Pradesh, Assam, Jharkhand, Kerala, Maharashtra, Odisha and Meghalaya.

1.8 ANALYSIS OF PERFORMANCE OF FLOOD FORECASTING NETWORK

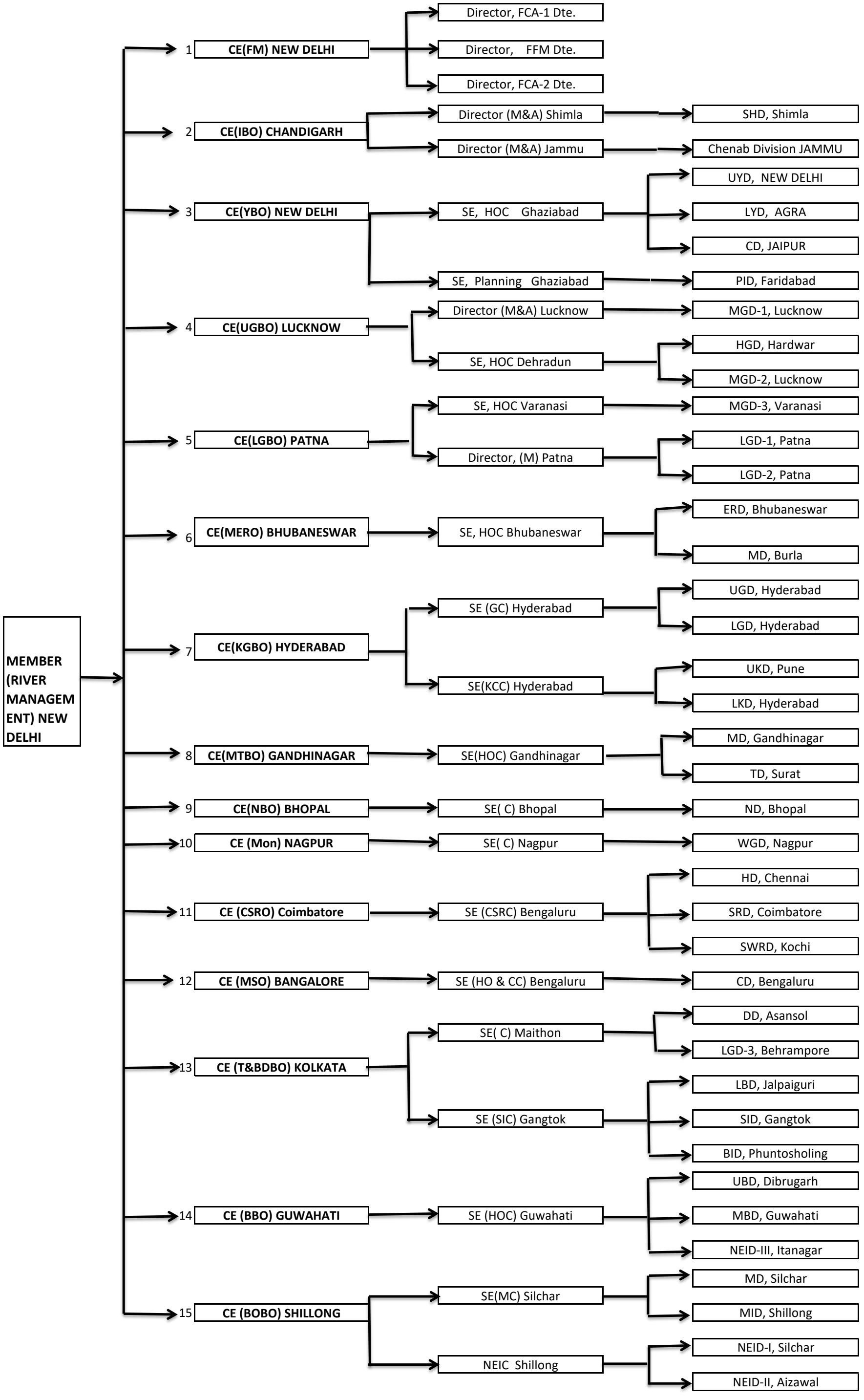
CWC carried out analysis and appraisal of the forecasting work, at the end of monsoon season. Based on this, measures for improvements are identified. A summary of the performance of the work carried out by the field divisions during the flood season 2022 has been presented in **Chapter - 4**. While 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. 20 Circle Offices and 36 Divisions in its field formations carry out flood forecasting activities. Chief Engineer (Flood Management) and Flood Forecast Monitoring Directorate monitor the Flood Forecasting activities at headquarters. CWC 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 **Fig. 1.3.** List of flood forecasting stations are in **Table - 1.6.**

ORGANISATIONAL CHART OF FLOOD FORECASTING AND WARNING SET UP OF CENTRAL WATER COMMISSION Fig-1.3



NOTE:- Chief Office-15, Directorate-3, Circle Office-20, Division Office-38(36 involved in Flood Forecasting & Monitoring)

Table 1.6: List of Flood Forecast Stations											
1	Sangam	57	Varanasi	113	Jainagar	169	Tufanganj	225	Mandla	281	Rajahmundry (Rly Bridge)
2	Rammunshibagh	58	Lucknow (Hanuman Setu)	114	Jhanjarpur	170	NH 31 (Jaldhaka)	226	Barna Dam	282	Dowlaiswaram Barrage
3	Safapora	59	Rae Bareilly	115	Sonebarsa	171	Hasimara	227	Bargi Dam	283	Atreyapuram
4	Srinagar	60	Jaunpur	116	Baltara	172	Ghugumari	228	Tawa Dam	284	Koyna Dam
5	Ganganagar	61	Ghazipur	117	Kursela	173	Mathabanga	229	Hoshangabad	285	Warna Dam
6	Rishikesh	62	Buxar	118	Sahibganj	174	Teesta III HEP	230	Indira Sagar Dam	286	Arjunwad
7	Haridwar	63	Ballia	119	Taibpur	175	Rangit-III HEP Dam	231	Omkareswar Dam	287	Hippargi Barrage
8	Dharmanagari Barrage	64	Banbasa Barrage	120	Dhengraghat	176	Teesta V HEP	232	Sardar Sarovar Dam	288	Hidkal Dam
9	Garhmukhteshwar	65	Katarniaghat Barrage	121	Jhawa	177	Singtam	233	Garudeswar	289	Almatti Dam
10	Narora Barrage	66	Elginbridge	122	Araria	178	Rongpo Dam	234	Bharuch	290	Malaprabha Dam
11	Kachlabridge	67	Ayodhya	123	Farakka	179	Rongli Dam	235	Hathnur Dam	291	Narayanpur Dam
12	Fatehgarh	68	Kakardhari	124	Massanjore Dam	180	Melli Bazar	236	Ukai Dam	292	Vir Dam
13	Kalagarh Dam	69	Balrampur	125	Tilpara Barrage	181	Jorethang	237	Surat	293	Ujni Dam
14	Moradabad	70	Bansi	126	Narayanpur	182	Domohani Bridge	238	Madhuban Dam	294	Deongaon Bridge
15	Bareilly	71	Birdghat (Gorakhpur)	127	Sikatia Barrage	183	Mekhliganj	239	Vapi	295	PD Jurala Project
16	Dabri	72	Turtipar	128	Gheropara	184	AP Ghat (Silchar)	240	Daman	296	Upper Tunga
17	Kannauj	73	Darauli	129	Tenughat Dam	185	Matizuri	241	Nasik	297	Bhadra Dam
18	Ankinghat	74	Gangpur Siswan	130	Tilaiya Dam	186	Badarpurghat	242	N M D Weir	298	Tungabhadra Dam
19	Kanpur	75	Chhappra	131	Konar Dam	187	Karimganj	243	Kopergaon	299	Singatlur Barrage
20	Dalmau	76	Bansagar Dam	132	Panchet Dam	188	Kailashahar	244	Mula Dam	300	Mantralayam
21	Phaphamau	77	Rihand Dam	133	Maithon Dam	189	Sonamura	245	Jaikwadi Dam	301	Sunkesula Barrage
22	Paonta Sahib	78	Annaraj Dam	134	Durgapur Barrage	190	Getlasud Dam	246	Manjlegaon Dam	302	Kurnool
23	Hathnikund Barrage	79	Bhirawa Dam	135	Sundar Dam	191	Chandil Dam	247	Gangakhed	303	Srisailam Dam
24	Karnal Bridge	80	Inderpuri Barrage	136	Harinkhola	192	Galudih Barrage	248	Yeldari Barrage	304	Musi Dam
25	Mawi	81	Inderpuri	137	Hinglow Dam	193	Jamshedpur	249	Nanded	305	Dr KLRS Pulichintala Dam
26	Dhansa	82	Koelwar	138	Kangsabati Dam	194	Rajghat	250	Karanja Dam	306	Prakasam Barrage
27	Delhi Railway Bridge	83	Maner	139	Mohanpur	195	Mathani Rd Bridge	251	Singur Dam	307	Avanigadda
28	Mathura	84	Patna (Dighaghat)	140	Yingkiong	196	Govindpur (NH5 Road Bridge)	252	Nizamsagar Dam	308	Somasila Dam
29	Agra	85	Gandak Barrage	141	Pasighat	197	Salandi Dam	253	Sriramsagar Dam	309	Nellore
30	Etawah	86	Khadda	142	Dholla Bazar	198	Anandpur	254	Kaddam Project	310	Poondi Reservoir
31	Gandhisagar Dam	87	Chatia	143	Dibrugarh	199	Akhuapada	255	Sripada Yellampally Project	311	Chembarampakkam Lake
32	Rana Pratap Sagar Dam	88	Dumariaghat	144	Namsai	200	Rengali Dam	256	U Wainganga Project	312	Sathanur Dam

Table 1.6: List of Flood Forecast Stations											
33	Kota Barrage	89	Rewaghat	145	Naharkatia	201	Jenapur	257	Chaurai/Machchagora Rsvr	313	Gomukhi Dam
34	Kota City	90	Hajipur	146	Chenimari (Khowang)	202	Ravi Shankar Dam	258	Bawanthadi Reservoir	314	Wellington Dam
35	Bisalpur Dam	91	Patna Gandhighat	147	Nanglamoraghat	203	Bango Dam	259	Totladoh Project	315	Harangi Dam
36	Kalisindh Dam	92	Amanat Dam	148	Sibsagar	204	Hirakud Dam	260	Bhandara	316	Hemavathy Dam
37	Parwan Dam	93	Batane Dam	149	Neamatighat	205	Naraj	261	Gosikhurd Dam	317	Kabini Dam
38	Gambhiri Dam	94	Sripalpur	150	Chouldhuaghat	206	Alipingal	262	Pauni	318	K R Sagar Dam
39	Panchana Dam	95	Hathidah	151	NH Xing Ranganadi	207	Nimapara	263	U Wardha Prjoject	319	Mettur Dam
40	Gudha Dam	96	Munger	152	Badatighat	208	Purushottampur	264	Issapur/Upper Penganga	320	Bhavanisagar Dam
41	Parwati Dam	97	Lalbeghiaghat	153	Golaghat	209	Gunupur	265	Balharsha	321	Savandapur
42	Dholpur	98	Ahirwalia	154	Numaligarh	210	Kashinagar	266	Sirpur Town	322	Kodumudi
43	Manderial	99	Sikandarpur (Muzzafarpur)	155	Jiabharali NT Road Crossing	211	Gotta Barrage	267	Kaleswaram	323	Kodaganar Dam
44	Auraiya	100	Samastipur	156	Tezpur	212	Thottapalli reservoir	268	Laxmi Barrage	324	Musiri
45	Kalpi	101	Rosera	157	Kampur	213	Madduvalasa Rsvr	269	U Indravati Project	325	Upper Anicut
46	Hamirpur	102	Khagaria	158	Dharamtul	214	Narayanpuram Anicut	270	Jagdalpur	326	Grand Anicut
47	Rajghat Dam	103	Bhagalpur	159	Guwahati	215	Srikakulam	271	PVN Rao Kanthapally Projct	327	Vaigai Dam
48	Madikhera	104	Kahalgaon	160	Puthimari NH Crossing	216	Dantiwada Dam	272	Eturunagaram	328	Madurai
49	Matatila Dam	105	Kosi Barrage	161	Pagladiya NT RdCrossing	217	Abu Road	273	Dummagudem	329	Kumbidi
50	Mohana	106	Basua	162	Mathanguri	218	Dharoi Dam	274	Bhadrachalam	330	Idduki Dam
51	Shahjina	107	Dheng Bridge	163	Beki Road Bridge	219	Shubhash Bridge (Ahmedabad)	275	Kolab Project	331	Idamalayar Dam
52	Banda	108	Runisaidpur	164	Manas NH Crossing	220	Mahi Bajajsagar Dam	276	Machkund Project	332	Neeleswaram
53	Chillaghat	109	Benibad	165	Goalpara	221	Som Kamla Amba Dam	277	Balimela Project	333	Malakkara
54	Naini	110	Kamtaul	166	Kokrajhar	222	Kadana Dam	278	Chinturu		
55	Chhatnag (Allahabad)	111	Ekmighat	167	Dhubri	223	Panam Dam	279	Kunavaram		
56	Mirzapur	112	Hayaghat	168	Golokganj	224	Wanakbori Weir	280	Indirasagar		

CHAPTER – 2

ROLE OF INDIA METEOROLOGICAL DEPARTMENT IN FLOOD FORECAST ACTIVITIES

2.1 ROLE OF INDIA METEOROLOGICAL DEPARTMENT

India Meteorological Department (IMD) is the nodal agency for issuing river sub-basin-wise Quantitative Precipitation Forecast (QPF). Central Water Commission (CWC) is the nodal agency for issuing Flood Forecast in the country. Flood forecasting, therefore, is the joint responsibility of IMD & CWC and there is a close coordination between the two departments in this activity (fig. - 2.1). Flood Meteorological Offices (FMOs) of IMD provide hydrometeorological support mainly in terms of river sub-basin-wise 'Quantitative Precipitation Forecast (QPF)' through QPF & Hydro-met Bulletins. QPF bulletins and Hydromet Bulletins are issued at 0930hrs IST and at 1230hrs IST respectively. This special river sub-basin-wise forecast for a lead time of 7-days (forecast for 5 days and outlook for subsequent 2 days) are issued daily during flood season. QPF bulletins are further modified in the evening, if situation demands. These Bulletins 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.

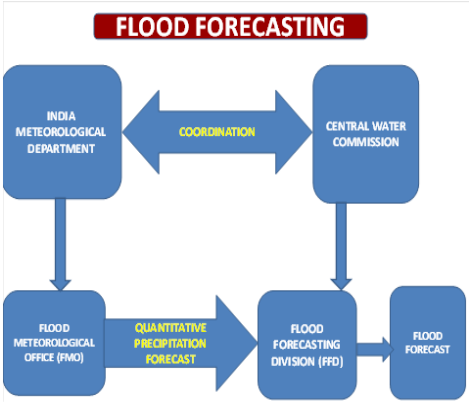


Fig.: 2.1 Coordination in Flood Forecast

The input of Hydro-met Bulletin are as follows;

a. Prevailing synoptic situations
b. River sub-basin wise QPF and probabilistic QPF for day-1, day-2, day-3, day-4 and day-5 for the categories as follows:
   i) 0 mm (ii) 0.1-10mm (iii) 11-25mm (iv) 26-50mm (v) 51-100mm (vi) >100mm
c. River sub-basin-wise outlook for the subsequent two days
d. River sub-basin-wise Heavy rainfall warnings
e. River sub-basin-wise Intensity and Spatial distribution of rainfall
f. Station-wise recorded significant rainfall
g. River sub-basin-wise past 24hrs realized rainfall

IMD has established 15 Flood Meteorological Offices (FMOs) at different parts of flood prone areas of the country which are located at Agra, Ahmedabad, Asansol, Bhubaneswar, DVC, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Srinagar, Chennai, Bengaluru, Patna and Thiruvananthapuram (fig. 2.2). They cater to the river catchments of Yamuna, Narmada, Tapi, Ajoy, Mayurakshi and Kangsabati, Mahanadi, 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 viz., Barakar and Damodar. Flood Meteorological Offices of IMD provide hydrometeorological support to Flood Forecasting Divisions (FFDs) of Central Water Commission (CWC) to help them issue 'Flood warnings/Flood alerts'.

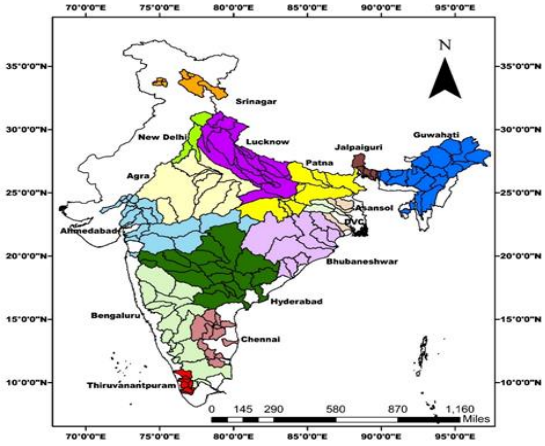


Fig.: 2.2 Flood Meteorological Offices

2.2 MODEL BASED QUANTITATIVE PRECIPITATION FORECAST

a. Deterministic Forecast

River sub-basin-wise Quantitative Precipitation Forecast (QPF) using deterministic dynamical models viz., WRF ARW (3kmx3 km) & NCUM-R(4kmx4km) based on 00utc for day-1 to day-3, GFS (12kmx12km) & NCUM-G (12kmx12km) based on 00 utc for day-1 to day-7 are uploaded on the IMD's website at http://hydro.imd.gov.in/hydrometweb/for 153 flood prone river sub-basins. Maps are shown in Fig.2.3 below.

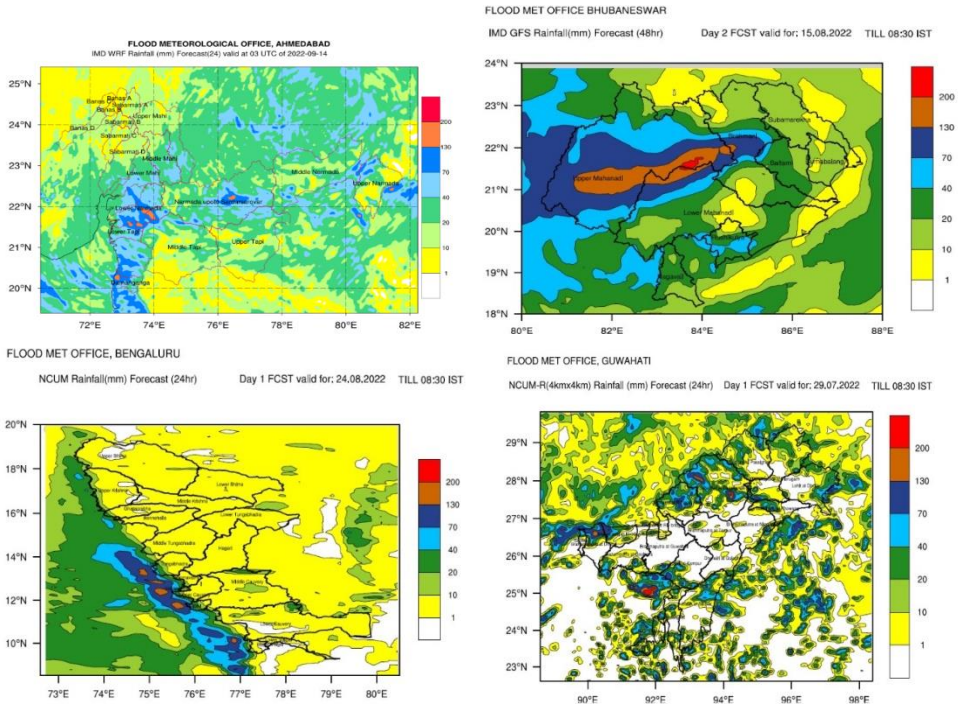


Fig. 2.3: River sub-basin-wise QPF of WRF, NCUM-R, GFS and NCUM-G

b. Probabilistic Forecast

River sub-basin-wise dynamical ensemble models viz. GEFS and NEPS based Probabilistic QPF are generated daily for day-1 to day-5 and uploaded in the IMD website at http://hydro.imd.gov.in/hydrometweb/, which has been found very useful in case of heavy rainfall events. An example is shown in Figs. 2.4 given below;

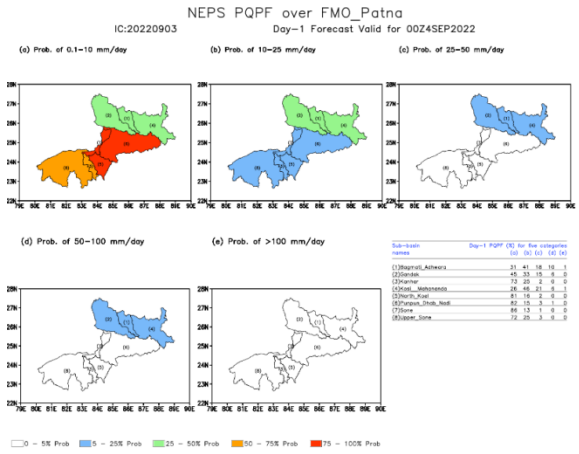


Fig. 2.4: River sub-basin-wise Probabilistic QPF of NEPS

c. Dynamical model forecast data Support to CWC

Deterministic dynamical model based gridded daily rainfall forecast (WRF & GFS) are provided operationally to CWC for use in the flood forecasting model.

2.3 District-wise Rainfall Monitoring Scheme (DRMS)

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 along with the color codes for graphical representation;

CATEGORY	% DEPARTURES OF RAINFALL	COLOUR CODE
Large Excess (LE or L. Excess)	> = 60%	
Excess (E)	>= 20% and <= 59%	
Normal (N)	>= - 19% and <= + 19%	
Deficient (D)	>= - 59% and <= - 20%	
Large Deficient (LD or L. Deficient)	>= - 99% and <= - 60%	
No Rain (NR)	= - 100%	
No Data (*)	Data Not Available	

For Southwest Monsoon season 2022, rainfall statistics was generated for 36 States and UTs, 36 Met subdivisions by compiling data from 703 districts using 5200 DRMS stations across Indian subcontinent. These statistics are generated on near real time basis at the temporal domain from daily, weekly, monthly, seasonal to annual.

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 1971 to 2020 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 87 cm.

2.4 SOUTH WEST MONSOON

India receives 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 of 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.

2.5 HIGHLIGHTS OF SOUTH-WEST MONSOON 2022

- The southwest monsoon seasonal rainfall during June to September for the country as a whole had been above normal (105 -110% of LPA).
- Quantitatively the 2022 all India monsoon seasonal rainfall during 1 June to 30 September 2022 had been 92.5 cm against long period average of 87.0 cm based on data of 1971-2020 (106% of its Long Period Average (LPA)).
- The southwest monsoon seasonal (June to September) rainfall over the four homogeneous regions is Normal over Northwest India (101%). Seasonal rainfall is below normal over East and Northeast India (82%) and above normal over central India (119%), and South Peninsula India (122%).

- The southwest monsoon seasonal (June to September) rainfall over the monsoon core zone, which consists of most of the rainfed agriculture regions in the country had been above normal (>106% of LPA).
- Out of the total 36 meteorological subdivisions, 18 subdivisions constituting 43% of the total area of the country received normal seasonal rainfall, 12 subdivisions received excess rainfall (40% of the total area) and 6 subdivisions (17% of the total area) received deficient season rainfall. These 6 Met subdivisions which received deficient rainfall are Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Jharkhand, Bihar, East Uttar Pradesh and West Uttar Pradesh. Out of these 6 Subdivisions, 4 lie in northeast India and 2 lie in Northwest India.
- The rainfall over country as a whole was 92%, 117%, 104% and 108% of LPA during June, July, August and September respectively.

Fig. 2.5: Sub-division wise rainfall map in South west monsoon season 2022

2.6 ONSET AND ADVANCE OF SOUTHWEST MONSOON 2022

The South West Monsoon (SWM) arrived over Andaman Sea on 16th May 2022. The SWM onset over Kerala on 29 May against the normal date of 01st 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 the entire country on 02nd July against the normal date of 08th July, about 6 days ahead its normal date (8th July). Fig. 2.6 shows the isochrones of advance of monsoon 2022.

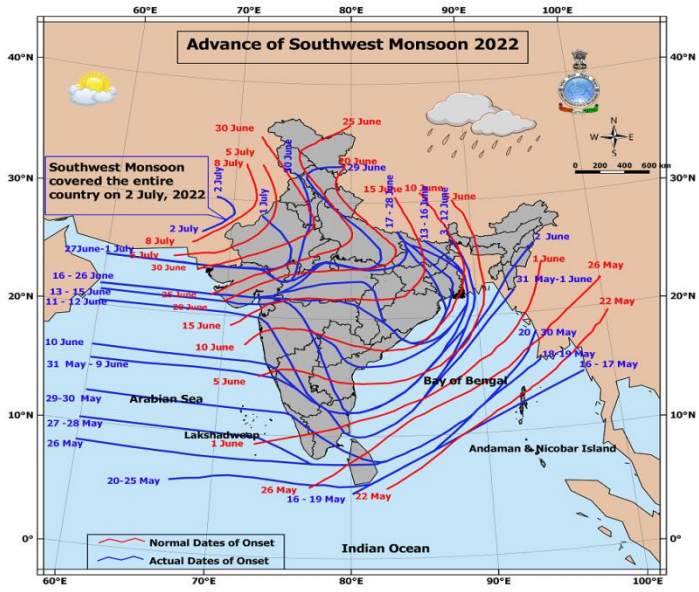


Fig. 2.6: Progress of Southwest Monsoon – 2022

2.7 CHIEF SYNOPTIC FEATURES

In all, 12 Low Pressure areas formed, 1 of which intensified into as a Deep Depression over northwest and adjoining northeast Bay of Bengal during 19-20 August and 5 into Depression and 6 Low Pressure area**/**Well Marked Low pressure areas during the monsoon season.

Month/ System	CS	Deep Depression	Depression	Low Pressure Area / WML	Total
June	0	0	0	1	1
July	0	0	1	3	4
August	0	1	3	0	4
September	0	0	1	2	3

2.8 Withdrawal of Southwest Monsoon 2022:

In view of 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, the withdrawal of southwest monsoon has commenced on 20th September against normal date of 17th September; it has further withdrawn from entire Punjab & Chandigarh; some parts of Jammu & Kashmir, Himachal Pradesh, West Uttar Pradesh and Haryana; entire Delhi; some more parts of Rajasthan on 29th; it has further withdrawn from remaining parts of Uttarakhand, Uttar Pradesh & Gujarat; most parts of Madhya Pradesh and some parts of Bihar, Jharkhand, Chhattisgarh & Maharashtra on 14th; it has further withdrawn from entire Bihar, entire Sikkim, entire Meghalaya, entire Madhya Pradesh, some parts of Assam, Tripura and West Bengal, some more parts of Vidarbha, Chhattisgarh and Maharashtra on 15th; it has further withdrawn from some more parts of Vidarbha, Chhattisgarh; many parts of Odisha; remaining parts of Jharkhand, West Bengal, Assam, Tripura; entire Mizoram, Manipur, Nagaland, Arunachal Pradesh and many parts of North Bay of Bengal on 20th; it has further withdrawn from some more parts of Vidarbha; remaining

parts of Chhattisgarh, Odisha & North Bay of Bengal; some parts of Telangana, Coastal Andhra Pradesh & Central Bay of Bengal on 21st; It then withdrew from the entire country on 23rd October 2022 against its normal on 15th October (fig. 2.7).

The date of withdrawal of southwest monsoon 2022 from the entire country is the eight most delayed monsoon withdrawal (on or after 23rd October) during 1975-2021.

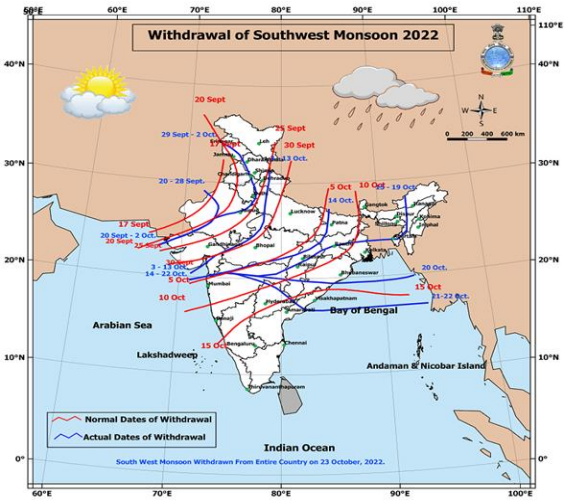


Fig. 2.7: Withdrawal of Southwest Monsoon – 2022

2.9 HIGH IMPACT WEATHER EVENTS

Fig. 2.8 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.

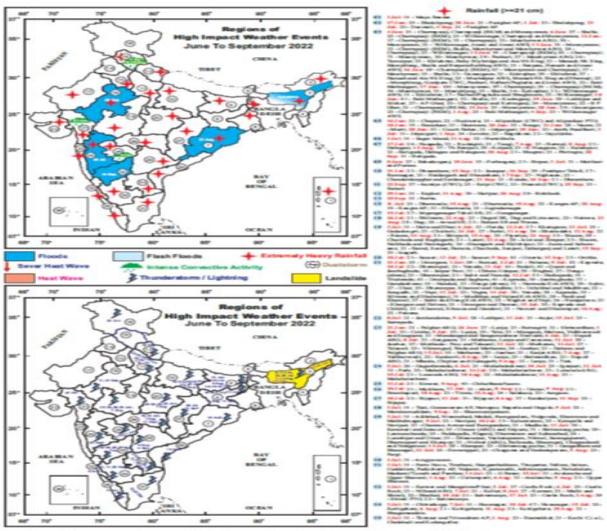


Fig. 2.8 : Location of Extremely and Very Heavy Rainfall Heavy Rainfall Events occurred during Monsoon

2.10 RAINFALL DISTRIBUTION

The realized 2022 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 2022**	
		Rainfall (mm)	**Rainfall (% of LPA)**
All India	868.6	924.8	106
Northwest India	587.6	594.3	101
Central India	978.0	1160.4	119
East & Northeast India	1367.3	1126.7	82
South Peninsula	716.2	874.6	122
Monthly & second half of monsoon season rainfall (All India)			
Month	**LPA (mm)**	**Actual Rainfall for 2022**	
		Rainfall (mm)	**Rainfall (% of LPA)**
June	165.3	152.2	92
July	280.5	327.2	117
August	254.9	264.0	104
September	167.9	181.4	108
August +September	422.8	445.4	105

As seen in the table above, the 2022 season rainfall over the country as a whole (106% of LPA) was more than the long period average (LPA). The 2022 seasonal rainfalls over three of the four geographical regions of the country (except East & Northeast India) were more than the respective LPAs. The highest rainfall (122% of LPA) was received by South Peninsula and lowest rainfall (82% of LPA) was received by East & Northeast India. Central India and Northwest India received season rainfalls of 119% of LPA and 101% of LPA respectively. The monthly rainfall over the country as a whole were more than LPA during the months of season (117% of LPA in July, 104% of LPA in August, 108% of LPA in September) and were less than LPA during the months of the season (92% of LPA in June).

Country as a whole received rainfall of 108% of LPA during the first half (92% of LPA in June and 117% of LPA in July), which was more than that during the second half (105% of LPA) with 104% of LPA in August and 108% of LPA in September. Thus, among the four months, rainfall deficiency was highest during June and rainfall was excess in July and September.

2.11 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 North East 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), 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 subdivision with 48% (443.3 mm) of its annual rainfall realised during this season and hence its performance is a key factor for this regional agricultural activity.

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) and 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 contribute significantly to NEM rainfall. As such, the NEM season assumes importance from the agricultural as well as cyclone disaster management perspectives.

Prior to the commencement of NEM rains, after the withdrawal of SWM upto 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 date of onset of NEM over Coastal TN (CTN) and south CAP is 20th October.

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.

2.12 ONSET PHASE

During October 2022, La Nina conditions prevailed over the equatorial Pacific Ocean and IOD was negative during the start season (October). MJO was insignificant during the first half of the month and was in phase-6-7 the later half of the month. As such, large scale setting was not favourable for NEM activity and commencement of NEM over the southern peninsular India was delayed.

2.13 SYNOPTIC SCALE WEATHER SYSTEMS DURING THE NEM-2022 SEASON

6 among the Low pressure systems formed over North Indian Ocean (NIO) during the season, had influenced the Northeast Monsoon activity of 2022. These are the well marked Low Pressure area over Bay of Bengal (09th October–13th Octoberr 2022), Depression over Bay of Bengal (20th-22nd December 2022), Depression over Bay of Bengal (22nd-25th Decemberr 2022), Deep Depression over Arabian sea (14th-17th October 2022), Cyclonic storm SITRANG (22nd-25th October 2022) and Severe Cyclonic storm MANDOUS (06th-10th December 202). Details of these systems including their brief life history are available in the Regional Specialised Meteorological Centre(RSMC) New Delhi website (https://rsmcnewdelhi.imd.gov.in/index.php).

2.14 OTHER SYNOPTIC SCALE WEATHER SYSTEMS

In addition to the Low pressure systems mentioned above, trough in easterlies, cyclonic circulations in the lower/middle tropospheric levels etc. have also contributed towards the rainfall activity during Northeast Monsoon Season 2022.

2.15 Summary

During the year 2022, the southwest monsoon withdrew from the Indian region on 23rd October and the Northeast monsoon of 2022 commenced over the southeastern parts of peninsular India on 29th October against the normal date of 20th October. All the five subdivisions benefitted by the NEM (TN, CAP, RYS, SIK & KER) received normal to excess rainfall during the season (October to December). There were two cyclones – (i) **CS *SITRANG*** over the Bay of Bengal

during 22nd-25th October which crossed Bangaladesh coast and (ii) **SCS *MANDOUS*** over the Bay of Bengal during 06th-10th December that crossed north Tamilnadu, Puducherry and adjoining south Andhra Pradesh coasts near Mahabalipuram as a Cyclonic Storm with maximum sustained wind speed of 65-75 kmph gusting to 85 kmph during the midnight of 09th-10th December; a Deep Depression over Arabian Sea during 14th-17th December which formed from the remnant of the cyclone MANDOUS and weakened over the sea; and two Depressions over the Bay of Bengal (i) during 20th -22nd December that weakened off south Andhra Pradesh coast and (ii) during 22nd-25th December that crossed Sri Lanka coast. There were 18 days of *active* to *vigorous* monsoon conditions over TN, KER & SIK during the season. There were 51 days of *isolated heavy* rainfall activity with 20 days of *isolated very heavy* rain including 04 days of *isolated extremely heavy rainfall* activity over TN. *Extremely heavy* rain also occurred over RYS on one day. Associated with the passage of a Well Marked Low Pressure Area (WML) over Bay of Bengal during 09th-13th November across TN, extremely heavy rainfall were reported from Mayiladuthurai district (Sirkazhi: **44cm**, Kollidam: **32cm**) & Cuddalore district (Chidambaram: **31cm**, Annamalai Nagar :**28 cm**, Bhuvanagiri : **21 cm)** on 12th November and associated with the passage of the cyclone ***MANDOUS*** isolated *extremely heavy* rainfall were reported from Thiruvannamalai district in TN (Vembakkam: **25 cm**) and Chittoor district in RYS (Srilakahasti: **23 cm** & Thottambedu: **22 cm**) on 10th December. After the Depression over the Bay of Bengal during 22nd-25 December, with the gradual decrease in rainfall activity, cessation of NEM 2022 rainfall over peninsular India was declared on 12th January 2023.

2. 16 South Asia Flash Flood Guidance System (SAsiaFFGS)

Flash floods are among the world's deadliest natural disasters with more than 5,000 lives lost annually and result in significant social, economic and environmental impacts. Accounting for approximately 85% of the flooding cases, flash floods also have the highest mortality rate (defined as the number of deaths per number of people affected) among different classes of flooding (e.g., riverine, coastal). Flash floods have a different character than river floods, notably short time scales and occurring in small spatial scales, which make forecasting of flash floods quite a different challenge than traditional flood forecasting approaches. In forecasting of flash floods, we are concerned foremost with the forecast of occurrence, and herein have focused on two causative events: **1. Heavy rainfall and 2. Rainfall on saturated soils.**

Flash floods occur throughout the world, and the time thresholds vary across regions from minutes to several hours depending on land surface, geomorphological and hydro climatological characteristics of the region. However, for the majority of these areas there exists no formal process for flash flood warnings. There is a lack of general capacity to develop effective warnings for these quick response events.

Definition of Flash Flood: Flash floods are floods of short duration with a relatively high peak discharge usually less than 6 hours between the occurrence of rainfall and the peak flood. In other words, any hydrometeorological disasters and heavy or excessive rainfall associated hazards in a short period of time that produce immediate runoff creating a flood of short duration within minutes or few hours during or after the rainfall.

WMO defines flash flood as "A flood of short duration with a relatively high peak discharge". **American Meteorological Society defines flash flood** as "A flood that rises and falls quite rapidly with little or no advance warning, usually the result of intense rainfall over a relatively small area". In nutshell, Flash floods are defined as events that are the result of heavy or excessive amounts of rainfall within a short period of time, usually less than 6 hours, causing stream waters to rise and fall quite rapidly. **Flash floods are a hydro-meteorological hazard** unlike other weather-related events with specific geographic locations; every location where rainfall occurs has the potential to produce a deadly flash flood. As a forecaster, one is aware that flash floods are not always the result of meteorological conditions. Although heavy rainfall is usually a

factor, it is the interaction between the meteorological conditions and hydrologic characteristics of the watershed where the rain is occurring that may result in a flash flood.

Background of Flash Flood Guidance System

As part of WMO"s Flood Forecasting Initiative and on the basis of a 4-party Memorandum of Understanding signed by the World Meteorological Organization (WMO); US NOAA National Weather Service (US NWS); the Hydrologic Research Center (HRC), San Diego, USA; and U.S. Agency for International 59 Development/Office of U.S. Foreign Disaster Assistance (USAID/OFDA), the signatories have established a cooperative initiative for the Flash Flood Guidance System with Global Coverage Project.

South Asia Flash Flood Guidance System (SAsiaFFGS)

The South Asia Flash Flood Guidance System (SAsiaFFGS) was fully operational in 2020, covering Bangladesh, Bhutan, India, Nepal and Sri Lanka. The India Meteorological Department (IMD) was selected as the regional center to provide forecast products and data to the participating countries, provide good IT infrastructure i.e., computation and dissemination server for smooth data exchange and internet connection, Issue flash flood guidance bulletins for each member country on daily basis and conduct verification studies in collaboration with the NMHSs and WMO.

Flash Flood Guidance Bulletins are issued based on 00,06,12 and 18 UTC operationally. The Guidance is issued in terms of Flash Flood Threat for next 06 hours (Fig 2.9) and Flash Flood Risk for next 12,24 and 26 hours (Fig. 2.10).

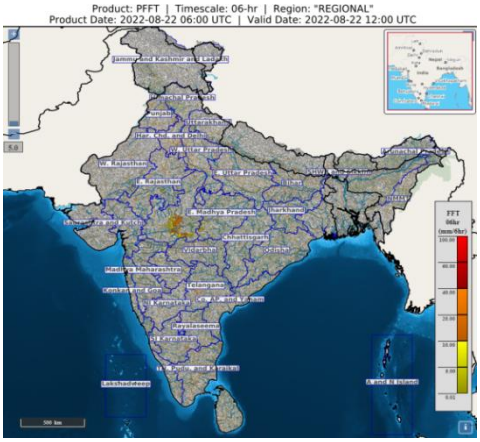


Fig 2.9: SAsiaFFGS Flash Flood Threat (FFT) product

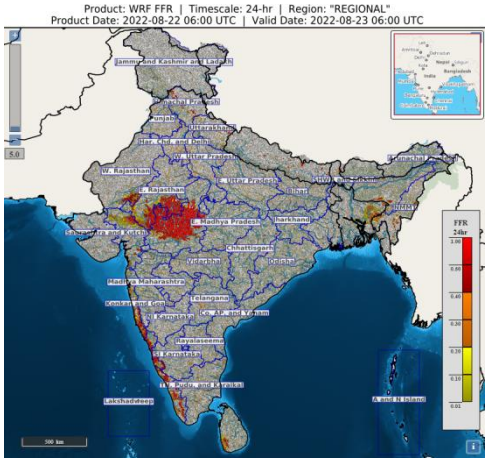


Fig 2.10: SAsiaFFGS Flash Flood Risk (FFR) product

Chapter -3

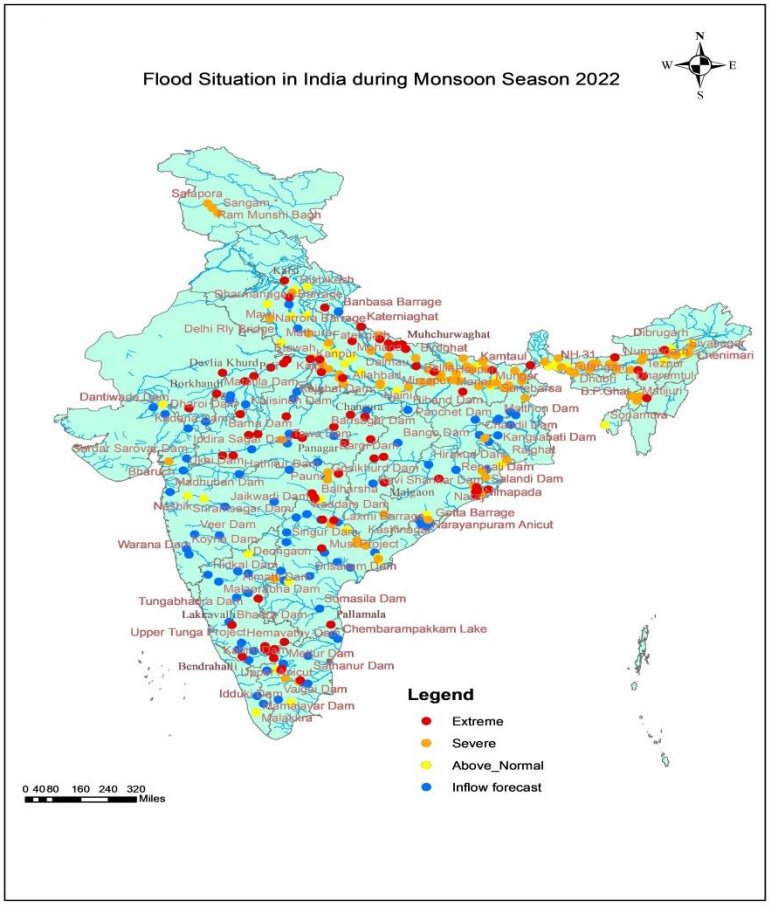
SIGNIFICANT FLOOD EVENTS

3.1 GENERAL

The Flood Forecasting Activity was expanded to 333 locations which includes 134 inflow forecasting sites. Desired hydro-meteorological data was observed/collected, during the flood season 2022 for these stations. Flood situation is monitored with respect to Warning Level (WL), Danger Level (DL) & previous Highest Flood Level (HFL).

3.2 AN OVERVIEW OF FLOOD EVENTS

Extreme flood situation (water level at or above previous HFL) were witnessed in 11 Flood Forecasting Stations in the State of Assam, Bihar, Uttar Pradesh, Telangana, Andhra Pradesh and Rajasthan. Severe flood events (water level at or above DL and below HFL) were witnessed in 95 stations and above normal floods (water level at or above WL and below DL) were witnessed at 42 stations and inflow forecasts were issued in 89 Stations. **Map 2** below shows the flood situation in the country during the year 2022.



Map 2: Flood situation in India during 2022

The number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2022 are shown in **Fig 3.1.**

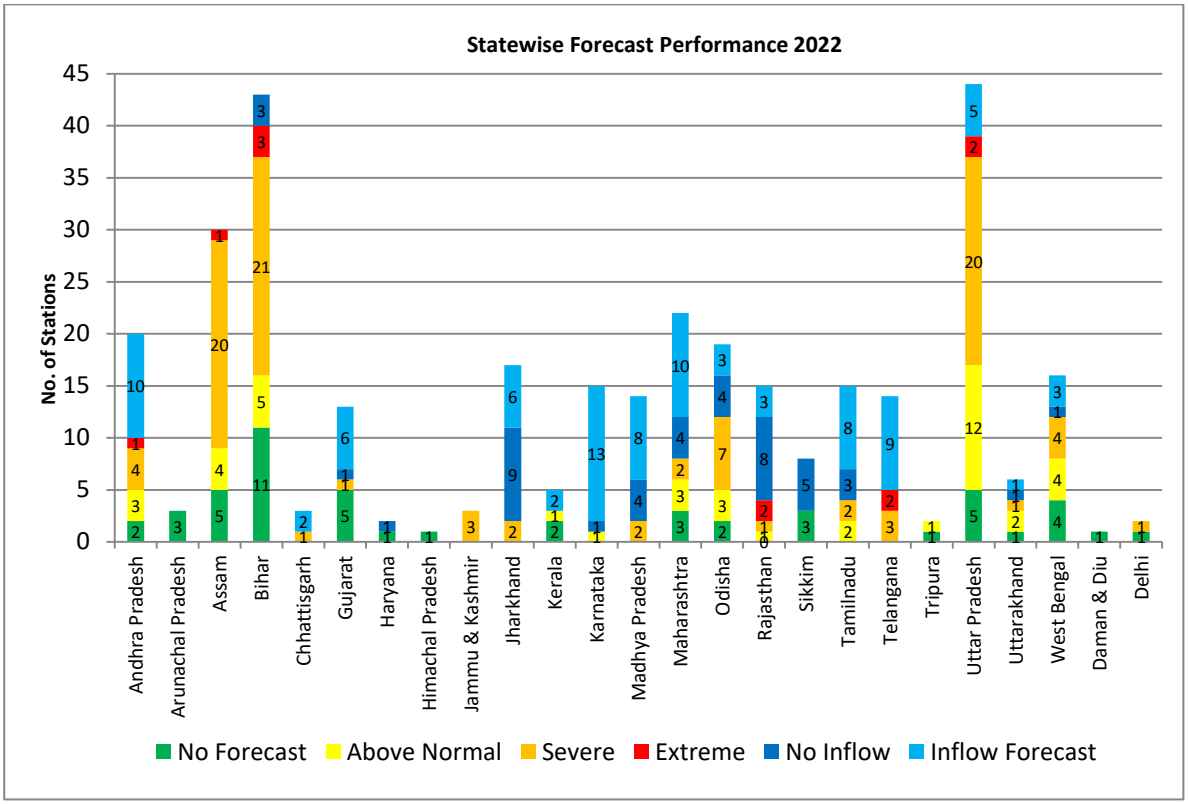


Fig 3.1 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2022.

State-wise flood situation, in terms of number of stations exceeding WL, DL, HFL and inflow exceeding threshold value at dams/barrages, has been tabulated in the following **Table 3.1**

Table 3.1

State/UT	Levels Exceeded				Inflow Exceeded	
	> WL	> DL	> HFL	Below (< WL) No Forecast	Dams/ Barrages	No forecast
1	2	3	4	5	6	7
Andhra Pradesh	3	4	1	2	10	0
Arunachal Pradesh	0	0	0	3	0	0
Assam	4	20	1	5	0	0
Bihar	5	21	3	11	0	3
Chhattisgarh	0	1	0	0	2	0
Gujarat	0	1	0	5	6	1
Haryana	0	0	0	1	0	1
Himachal Pradesh	0	0	0	1	0	0
Jammu & Kashmir	0	3	0	0	0	0
Jharkhand	0	2	0	0	6	9

Kerala	1	0	0	2	2	0
Karnataka	1	0	0	0	13	1
Madhya Pradesh	0	2	0	0	8	4
Maharashtra	3	2	0	3	10	4
Odisha	3	7	0	2	3	4
Rajasthan	1	1	2	0	3	8
Sikkim	0	0	0	3	0	5
Tamil Nadu	2	2	0	0	8	3
Telangana	0	3	2	0	9	0
Tripura	1	0	0	1	0	0
Uttar Pradesh	12	20	2	5	5	0
Uttarakhand	2	1	0	1	1	1
West Bengal	4	4	0	4	3	1
Daman & Diu	0	0	0	1	0	0
Delhi	0	1	0	1	0	0
Total	**42**	**95**	**11**	**51**	**89**	**45**

Basin wise information in terms of number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2022 are shown in **Fig. 3.2.**

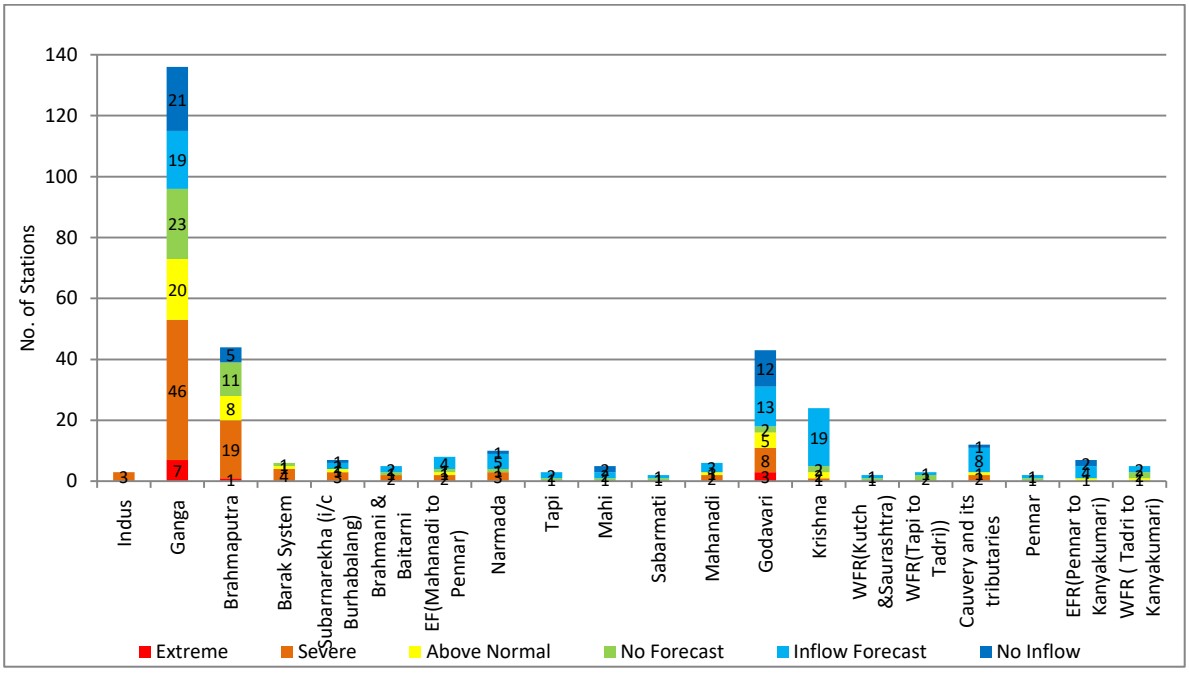


Fig 3.2 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2022 in different Basins

Basin-wise flood situation, in terms of number of stations in extreme, severe, above normal flood situation and inflow exceeding threshold value at dams/barrages, has been tabulated in the following **Table 3.2**

Table 3.2

Basin	Level				Inflow	
	Extreme Flood	Severe Flood	Above Normal	Below WL	Inflow Forecast	No Inflow
Indus	0	3	0	0	0	0
Ganga	7	46	20	23	19	21
Brahmaputra	1	19	8	11	0	5
Barak System	0	4	1	1	0	0
Subarnarekha (i/c Burhabalang)	0	3	1	0	2	1
Brahmani & Baitarni	0	2	0	1	2	0
EF(Mahanadi to Pennar)	0	2	1	1	4	0
Narmada	0	3	0	1	5	1
Tapi	0	0	0	1	2	0
Mahi	0	0	0	1	2	2
Sabarmati	0	0	0	1	1	0
Mahanadi	0	2	1	0	3	0
Godavari	3	8	5	2	13	12
Krishna	0	1	2	2	19	0
WFR(Kutch &Saurashtra)	0	0	0	1	1	0
WFR(Tapi to Tadri))	0	0	0	2	1	0
Cauvery and its tributaries	0	2	1	0	8	1
Pennar	0	0	0	1	1	0
EFR(Pennar to Kanyakumari)	0	0	1	0	4	2
WFR (Tadri to Kanyakumari)	0	0	1	2	2	0
Total	11	95	42	51	89	45

Details of flooding situation indicating districts affected and duration of different category of flood at a forecasting station during 2022 can be seen at **Annex – V**.

3.2.1 EXTREME FLOOD SITUATION

Extreme floods, exceeding previous highest flood levels (HFL), were observed in eleven sites namely **Kampur** in Nagaon district of Assam, **Taibpur** in Kishanganj district, **Basua** in Supaul district, **Darauli** in Siwan district of Bihar, **Kaleswaram** in Bhupalpally district, **Sirpur(T)** in Kumarambheem district of Telangana, **Chinturu** in Alluri Sitharama raju district of Andhra Pradesh, **Balrampur** in Balrampur district, **Bansi** in Siddarthnagar district of Uttar Pradesh and **Manderial** in Karauli district, **Dholpur** in Dholpur district of Rajasthan during the year 2022.

78 Flood Monitoring Stations flowed in Extreme Flood Situation in Arunachal Pradesh, Assam, Bihar, Karnataka, Telangana, Tamil Nadu, Andhra Pradesh, Maharashtra, Madhya Pradesh, Uttarakhand, Rajasthan, Odisha, Chhattisgarh and Uttar Pradesh state.

Month wise number of flood forecast and monitoring stations witnessed Extreme Flood is shown in **Fig. 3.3**.

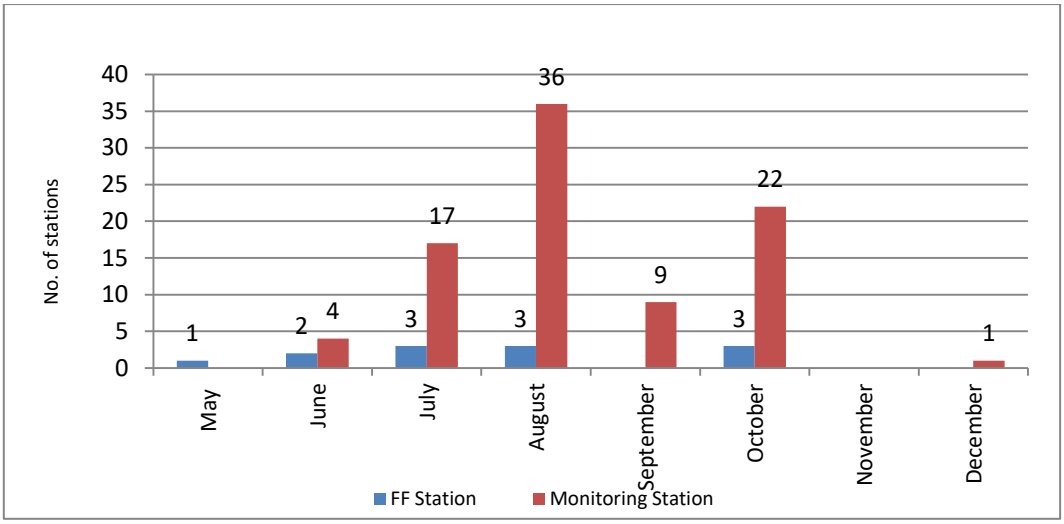


Fig. 3.3: Month wise number of flood forecasting/monitoring stations witnessed extreme floods during 2022

3.3 EXTREME FLOOD SITUATION (2019-2022)

It is observed that during the last 4 years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamil Nadu in addition to existing flood prone states like Assam, Bihar, Odisha and Uttar Pradesh. **Fig 3.4** shows graph showing state wise extreme flood situation during the year 2019 to 2022.

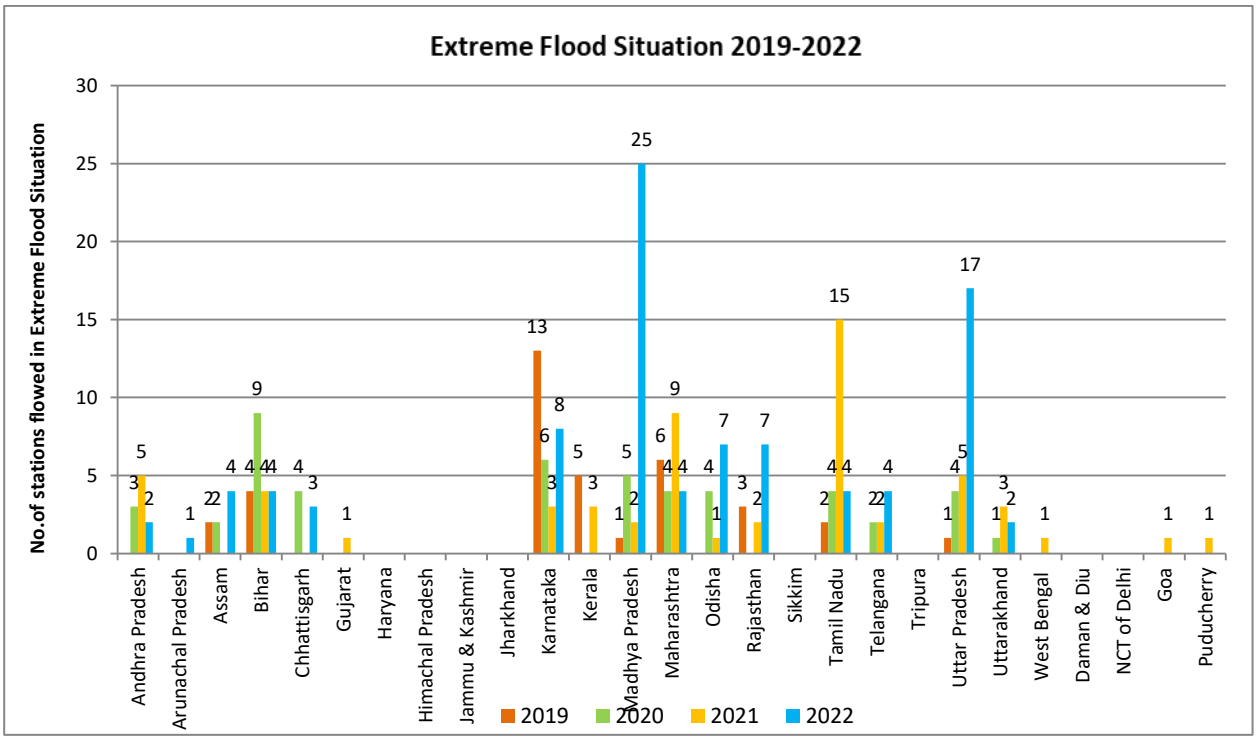


Fig. 3.4: State wise extreme flood situation during the years 2019 to 2022

3.4 MAJOR FLOOD EVENTS DURING LAST 10 YEARS

Year	States	Remarks
2011	**Odisha**	During the month of September Hirakud Dam received very heavy inflow and released huge quantum of water to downstream which causes unprecedented floods in delta area of Mahanadi.
2013	**Uttarakhand**	Very heavy to exceptionally very heavy rainfall recorded during the period 14th to 18th June 2013 in Uttarakhand due to cloudbursts which caused devastating floods and landslides. Due to this heavy rainfall, the glacier melts and Chorabari lake received large amount of water. This sudden increase of pressure broke the moraine embankment and the lake emptied in a few minutes, taking a large amount of debris and huge boulders along with water which led to heavy flood in Uttarakhand.
2014	**Jammu & Kashmir**	During the month of September extremely heavy rainfall occurred in Jhelum, Chenab and Tawi basin which causes the devastating flood.
2015	**Chennai**	During November heavy to very heavy rainfall occurred by NE monsoon system in Chennai due to which the lakes and reservoirs in Chennai got filled up and water was released from these reservoirs which leads to flood in Chennai.
2018	**Kerala**	During the Second and third week of August Kerala received extremely heavy rainfall. Due to back to back extremely heavy rainfall extreme flood situation occurred in Kerala.
2019	**Karnataka**	On first week of August Karnataka received 5 times more rainfall than the normal rainfall which causes intensified flood in Karnataka.
2020	**Assam**	During the month of July, Assam and Meghalaya received 30% more rainfall compared to normal rainfall. This excess rainfall causes flood in Assam.
2021	**Tamil Nadu , Andhra Pradesh**	Due to low pressure in Bay of Bengal occurred in November heavy to very heavy rainfall occurred in Andhra Pradesh. Due to this heavy rainfall Annamaya Dam receives high inflow and has breached. Overtopping and breach of Annamaya Dam leads to flood in the downstream areas.
2022	**Silchar(Assam)**	In the month of May 2022, parts of Silchar namely Rongpur and its adjacent areas were flooded due to heavy rainfall in the catchment area. Due to this river water overflowed the banks at many places and also overtopped some of the dykes of the Barak dyke system and flood water entered in some of the areas of Silchar. The dyke at Bethukandi which is located upstream of Annapurnaghat site was damaged and river water entered Silchar Town.

CHAPTER - 4

FLOOD FORECAST PERFORMANCE

4.1 INTRODUCTION

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 AND ITS ACCURACY

The flood forecasting activities like data collection, forecast formulation and its dissemination during 2022 covered various river basins and States. A total of 11558 forecast were issued during 2022. The performance of flood forecasting Division wise, Major Basin wise, State wise are given in **Annex -VI to VIII** and Flood forecasting performance for the period from 2000 to 2022 are given in **Annex -IX.**

4.3.1 RIVER BASIN-WISE DETAILS OF FLOOD FORECASTING ACTIVITES & ACCURACY OF FORECAST

The Basin-wise details of flood forecasting activity and accuracy of forecast was given in the **Table 4.1** and fig 4.1.

Table 4.1

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2022

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	% o Accuracy	Total No.	Within limits	%of Accuracy	Total No.	Within limits	% of Accu-racy
1	Indus and its tributaries	3	3	0	0	0	0	14	7	50.00	0	0	-	14	7	50.00
2	Ganga & tributaries	136	96	40	44	23	21	3739	3584	95.85	556	467	83.99	4295	4051	94.32
3	Brahmaputra	44	39	5	16	11	5	1727	1698	98.32	0	0	-	1727	1698	98.32
4	Barak and others	6	6	0	1	1	0	283	280	98.94	0	0	-	283	280	98.94

5	Subarnarekha including Burhabalang	7	4	3	1	0	1	98	92	93.88	15	13	86.67	113	105	92.92
6	Brahmani and Baitarni	5	3	2	1	1	0	18	13	72.22	14	10	71.43	32	23	71.88
7	Eastflowing rive between Maha nadi and Pennar	8	4	4	1	1	0	62	51	82.26	19	19	100.00	81	70	86.42
8	Narmada	10	4	6	2	1	1	65	65	100.00	227	225	99.12	292	290	99.32
9	Tapi	3	1	2	1	1	0	0	0	-	251	248	98.80	251	248	98.80
10	Mahi	5	1	4	3	1	2	0	0	-	9	9	100.00	9	9	100.00
11	Sabarmati	2	1	1	1	1	0	0	0	-	30	27	90.00	30	27	90.00
12	Mahanadi	6	3	3	0			34	32	94.12	87	77	88.51	121	109	90.08
13	Godavari	43	18	25	16	4	12	446	404	90.58	495	482	97.37	941	886	94.16
14	Krishna	24	5	19	2	2		112	86	76.79	1945	1804	92.75	2057	1890	91.88
15	West flowing rivers of Kutch and saurashtra including Luni	2	1	1	1	1	0	0	0	-	12	10	83.33	12	10	83.33
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	26	26	100.00	26	26	100.00
17	Cauvery and tributaries	12	3	9	1	0	1	174	160	91.95	952	839	88.13	1126	999	88.72
18	Pennr	2	1	1	1	1	0	0	0	-	49	39	79.59	49	39	79.59
19	East flowing rivers between Pennar and Kanyakumari	7	1	6	2	0	2	4	3	75.00	81	66	81.48	85	69	81.18
20	West Flowing river Tadri to Kanyakumari	5	3	2	2	2	0	3	1	33.33	11	8	72.73	14	9	64.29
Total		**333**	**199**	**134**	**98**	**53**	**45**	**6779**	**6476**	**95.53**	**4779**	**4369**	**91.42**	**11558**	**10845**	**93.83**

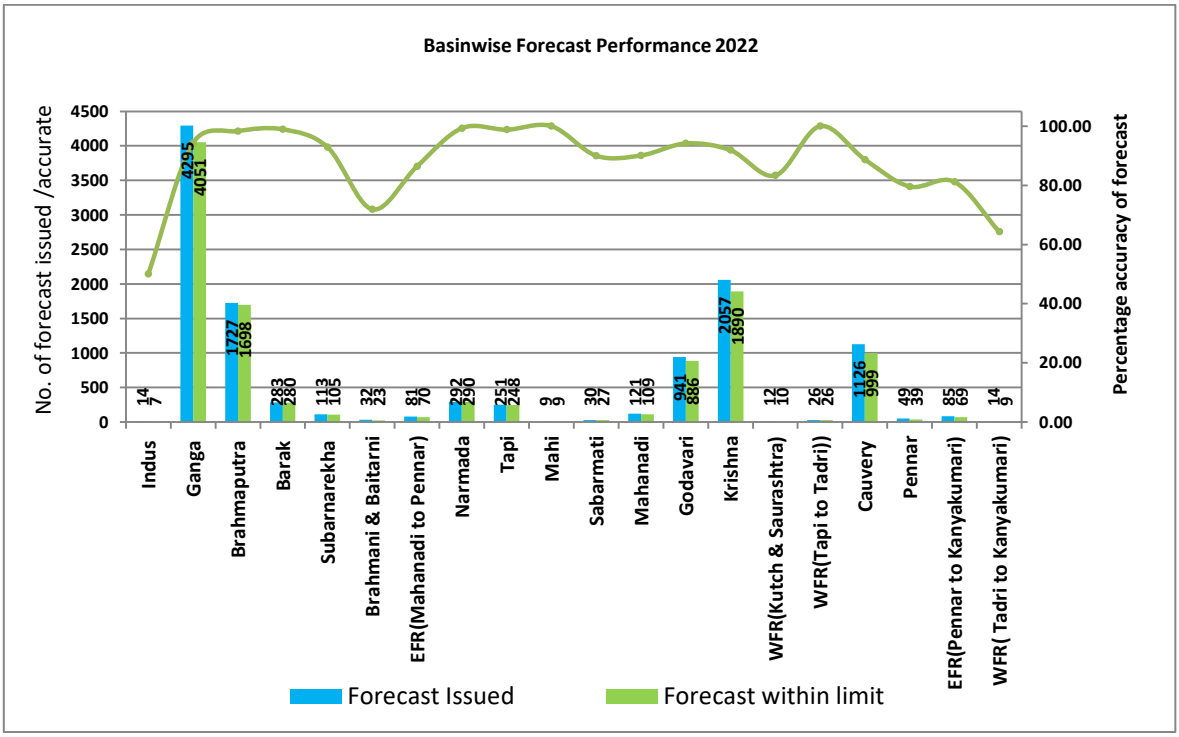


Fig 4.1: Basinwise Forecast performance during 2022

4.3.2 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 details of flood forecasting activity and accuracy of forecast was given in the **Table 4.2** and fig 4.2.

Table 4.2
Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2022

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	2	2	0	297	266	89.56	956	902	94.35	1253	1168	93.22
2	**Arunachal Pradesh**	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
3	**Assam**	30	30	0	5	5	0	1831	1820	99.40	0	0	-	1831	1820	99.40
4	**Bihar**	43	40	3	14	11	3	2429	2384	98.15	0	0	-	2429	2384	98.15
5	**Chattisgarh**	3	1	2	0	0	0	18	17	94.44	10	6	60.00	28	23	82.14
6	**Gujarat**	13	6	7	6	5	1	23	23	100.00	352	344	97.73	375	367	97.87
7	**Haryana**	2	1	1	1	0	1	1	0	0.00	0	0	-	1	0	0.00
8	**Himachal Pradesh**	1	1	0	0	0	0	1	0	0.00	0	0	-	1	0	0.00
9	**Jammu & Kashmir**	3	3	0	0	0	0	14	7	50.00	0	0	-	14	7	50.00
10	**Jharkhand**	17	2	15	9	0	9	75	73	97.33	160	154	96.25	235	227	96.60
11	**Karnataka**	15	1	14	1	0	1	9	5	55.56	1225	1149	93.80	1234	1154	93.52
12	**Kerala**	5	3	2	2	2	0	3	1	33.33	11	8	72.73	14	9	64.29
13	**Madhya Pradesh**	14	2	12	4	0	4	42	42	100.00	139	111	79.86	181	153	84.53
14	**Maharashtra**	22	8	14	9	5	4	60	48	80.00	243	213	87.65	303	261	86.14
15	**Odisha**	19	12	7	6	2	4	189	171	90.48	91	81	89.01	280	252	90.00
16	**Rajasthan**	15	4	11	9	1	8	48	19	39.58	35	16	45.71	83	35	42.17
17	**Sikkim**	8	3	5	8	3	5	0	0	-	0	0	-	0	0	-
18	**Tamil Nadu**	15	4	11	3	0	3	178	163	91.57	727	614	84.46	905	777	85.86
19	**Telangana**	14	5	9	0	0	0	193	169	87.56	507	486	95.86	700	655	93.57
20	**Tripura**	2	2	0	1	1	0	4	4	100.00	0	0	-	4	4	100.00
21	**Uttar Pradesh**	44	39	5	5	5	0	1025	967	94.34	236	199	84.32	1261	1166	92.47
22	**Uttarakhand**	6	4	2	3	2	1	8	3	37.50	6	6	100.00	14	9	64.29
23	**West Bengal**	16	12	4	5	4	1	288	265	92.01	81	80	98.77	369	345	93.50
24	**Daman & Diu**	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
25	**NCT, DELHI**	2	2	0	1	1	0	43	29	67.44	0	0	-	43	29	67.44
Total		**333**	**199**	**134**	**98**	**53**	**45**	**6779**	**6476**	**95.53**	**4779**	**4369**	**91.42**	**11558**	**10845**	**93.83**

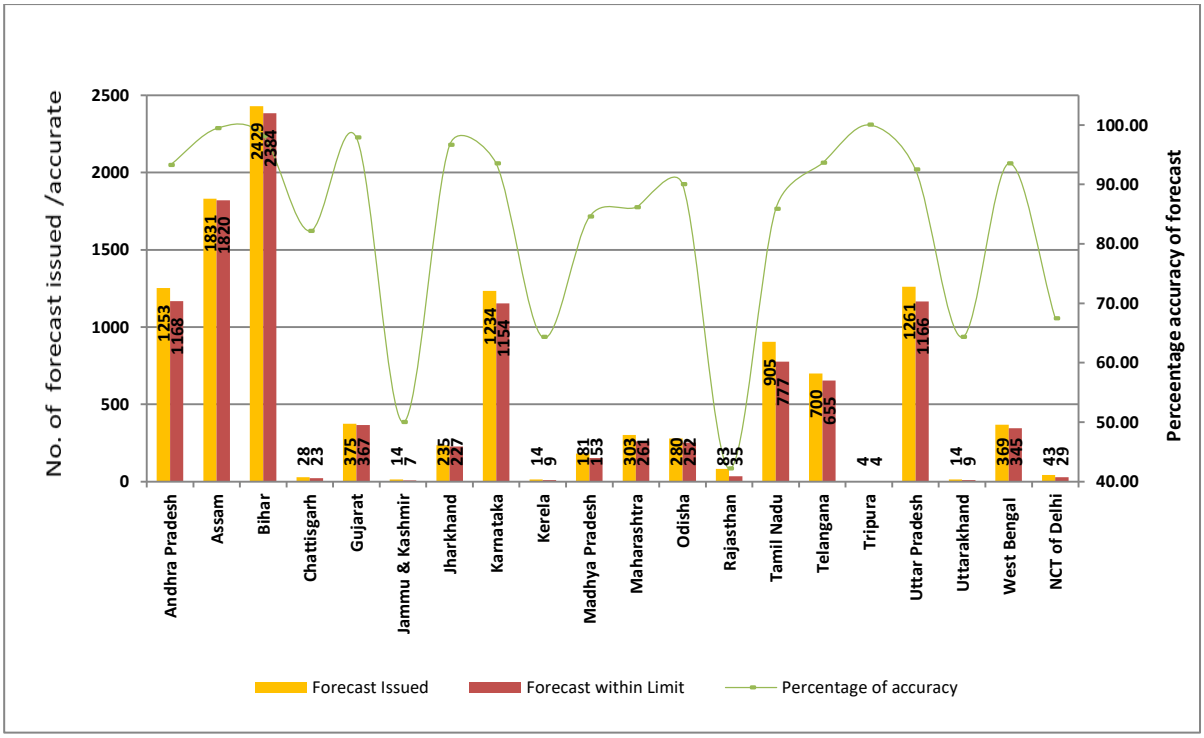


Fig. 4.2: State-wise Flood Forecast Performance during 2022

Details of Extreme flood events in the various river systems covered under the Flood Forecasting & Warning Network are given in **Annex–X** for the year 2022**.** Severe and Above Normal flood events are given at **Annex - XI to XIII,** for the year 2022.

4.4 AN OVERVIEW OF FLOOD FORECASTING PERFORMANCE

Central Water Commission has a flood forecasting network distributed over 20 major river systems The overall forecast performance was 93.83% for the country as a whole. Out of 333 sites, at 78 sites forecast performance was 100% accurate. The flood forecasting performance of the level forecasting as well as inflow forecasting sites from 2011 to 2022 is given in **Fig. 4.3.** Also, performance accuracy during 2022 of the sites where flood forecast was issued is attached as **Table 4.3**

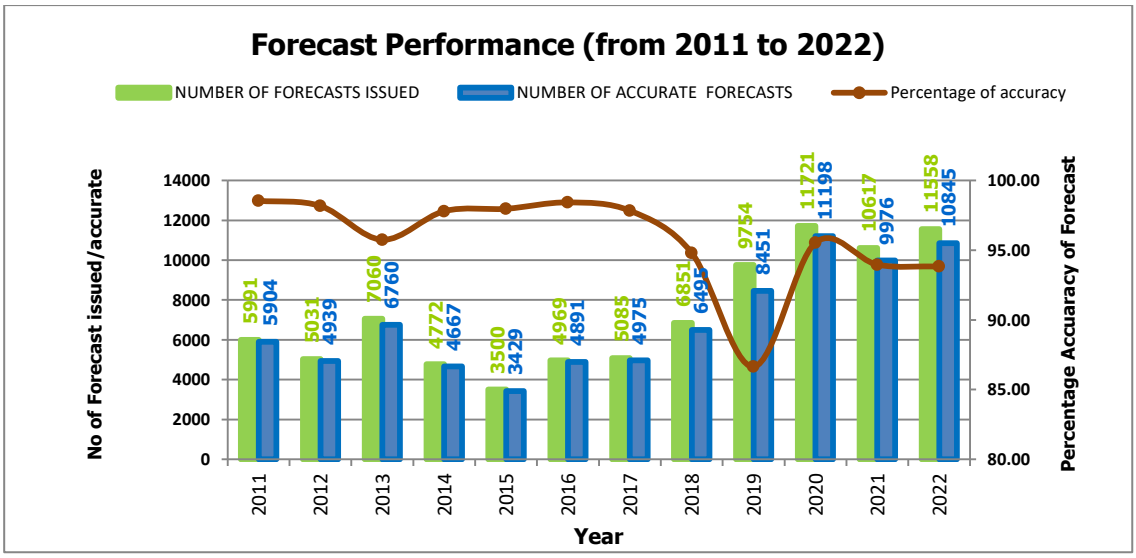


Fig. 4.3: Flood Forecast Performance from 2011 to 2022

Table 4.3: Performance accuracy during 2022 at flood forecasting sites of CWC

Sl. No.	Details	No. of Sites	%
1	Sites with performance accuracy between 0.0% to 25%	8	3.40%
2	Sites with performance accuracy between 25.1% to 50%	16	6.81%
3	Sites with performance accuracy between 50.1% to 75%	27	11.49%
4	Sites with performance accuracy between 75.1% to 99.99%	106	45.11%
5	Sites with 100% performance accuracy	78	33.19%
6	Total sites where forecasts were issued	**235**	**100%**

4.5 ACCURACY ANALYSIS REPORT:

Central Water Commission (CWC) through its field divisions collects hydrological and hydro-meteorological data on real–time basis during the flood season every year. Using these data, flood/inflow forecasts are formulated for 333 locations (199 Level and 134 Inflow Forecast Stations) and disseminated to various user agencies through Fax/e-mail/SMS and Website. In addition to the data collected from the network of CWC stations, the meteorological data and Quantitative Precipitation Forecast (QPF) received from India Meteorological Department are also utilised in formulation of flood forecast.

Under the conventional set up, the methodology used is generally either the basin persistence based mathematical/statistical techniques, co-axial graphs or mathematical models using rainfall data received from Indian Meteorological Department (IMD) or the rainfall data collected by CWC. The Level forecasts are issued whenever the water levels at CWC Flood Forecasting Station exceeds or expected to exceed the Warning Level (which is usually 1.0 m below the Danger Level but depends on the threat perception of the location) specified for the Flood Forecasting Station.

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.

Depending upon the above criteria the statewise last 5 years (2018-2022) accuracy performance report in tabular form is given below.

Forecast Performance (2018-2022) **Table 4.4**

Sl. No	Name of the Major River basin	Overall Forecast														
		2018			2019			2020			2021			2022		
		Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)
1	Andhra Pradesh	226	195	**86.28**	717	429	**59.83**	756	689	**91.14**	734	678	**92.37**	1253	1168	**93.22**
2	Arunachal Pradesh	73	72	**98.63**	30	30	**100.00**	130	129	**99.23**	49	49	**100.00**	0	0	-
3	Assam	2170	2156	**99.35**	2183	2168	**99.31**	3094	3081	**99.58**	1419	1415	**99.72**	1831	1820	**99.40**
4	Bihar	1225	1213	**99.02**	2186	2155	**98.58**	3223	3192	**99.04**	3317	3248	**97.92**	2429	2384	**98.15**
5	Chattisgarh	13	10	**76.92**	43	34	**79.07**	17	14	**82.35**	0	0	-	28	23	**82.14**
6	Daman n Diu	0	0	-	1	1	**100.00**	0	0	-	0	0	-	0	0	-
7	Gujarat	19	17	**89.47**	317	308	**97.16**	184	180	**97.83**	86	84	**97.67**	375	367	**97.87**
8	Haryana	1	1	**100**	2	2	**100.00**	0	0	-	0	0	-	1	0	**0.00**
9	Himachal Pradesh	0	0	-	4	2	**50.00**	0	0	-	0	0	-	1	0	**0.00**
10	Jammu & Kashmir	15	15	**100**	2	2	**100.00**	0	0	-	1	0	-	14	7	**50.00**
11	Jharkhand	153	152	**99.35**	140	131	**93.57**	364	339	**93.13**	625	565	**90.40**	235	227	**96.60**
12	Karnataka	760	664	**87.37**	1162	954	**82.10**	883	793	**89.81**	1012	933	**92.19**	1234	1154	**93.52**
13	Kerala	-	-	-	30	24	**80.00**	34	26	**76.47**	4	2	**50.00**	14	9	**64.29**
14	Madhya Pradesh	29	12	**41.38**	356	91	**25.56**	235	190	**80.85**	55	44	**80.00**	181	153	**84.53**
15	Maharashtra	31	30	**96.77**	277	198	**71.48**	153	136	**88.89**	147	122	**82.99**	303	261	**86.14**
16	NCT, DELHI	35	33	**94.29**	7	6	**85.71**	0	0	-	27	19	**70.37**	43	29	**67.44**
17	Odisha	203	199	**98.03**	233	216	**92.70**	266	239	**89.85**	200	170	**85.00**	280	252	**90.00**
18	Rajasthan	0	0	-	146	59	**40.41**	59	32	**54.24**	91	60	**65.93**	83	35	**42.17**
19	Sikkim	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
20	Tamilnadu	581	488	**83.99**	571	538	**94.22**	445	370	**83.15**	634	486	**76.66**	905	777	**85.86**
21	Telangana	86	63	**73.26**	219	113	**51.60**	335	310	**92.54**	323	302	**93.50**	700	655	**93.57**
22	Tripura	12	11	**91.67**	0	0	-	0	0	-	0	0	-	4	4	**100.00**
23	Uttar Pradesh	866	840	**97**	812	696	**85.71**	911	880	**96.60**	1370	1308	**95.47**	1261	1166	**92.47**
24	Uttarakhand	45	37	**82.22**	11	6	**54.55**	22	21	**95.45**	35	25	**71.43**	14	9	**64.29**
25	West Bengal	308	287	**93.18**	305	288	**94.43**	610	577	**94.59**	488	466	**95.49**	369	345	93.50
Total		6851	6495	**94.8**	**9754**	**8451**	**86.64**	**11721**	**11198**	**95.54**	**10617**	**9976**	**93.96**	**11558**	**10845**	**93.83**

Reasons for Low accuracy:

1. There are mainly two types of sites :-
   (i) Located on flashy rivers. In flashy rivers, the rate of change in river level is sudden/abrupt and sharp in magnitude.
   (ii) Located on unflashy rivers. Here the rate of change in river level is not so sudden or sharp.

Applying the same criteria of accuracy to all the forecasting sites on main stream Ganga in Bihar and to the forecasting sites at Haridwar on Ganga in Uttarakhand is not logically correct. It is observed that in Bihar the rate of rise and fall in the level of river Ganga is very gentle and even and within 15cm only which is the permissible limit of deviation (Table 4.5). Whereas the rate of rise and fall at Haridwar is more than 15 cm. (Table 4.6) Similarly it is observed that the rate of rise and fall of Water Level at Anandpur on the river Baitarni in Odisha is more than 15 cm during forecast time (Table 4.7).

Rate of Rise and fall of Water Level at Dighaghat in Bihar

Table 4.5

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
29/08/2022 21:00:00.00	50.53	0
29/08/2022 22:00:00.00	50.53	1
29/08/2022 23:00:00.00	50.54	1
30/08/2022 00:00:00.00	50.55	1
30/08/2022 01:00:00.00	50.56	1
30/08/2022 02:00:00.00	50.57	1
30/08/2022 03:00:00.00	50.58	1
Event 2		
01/09/2022 20:00:00.00	50.74	0
01/09/2022 21:00:00.00	50.74	0
01/09/2022 22:00:00.00	50.74	0
01/09/2022 23:00:00.00	50.74	0
02/09/2022 00:00:00.00	50.74	-1
02/09/2022 01:00:00.00	50.73	0
02/09/2022 02:00:00.00	50.73	0
02/09/2022 03:00:00.00	50.73	0
02/09/2022 04:00:00.00	50.73	-1
02/09/2022 05:00:00.00	50.72	0
Event 3		
18/10/2022 07:00:00.00	50.04	-2
18/10/2022 08:00:00.00	50.02	-1
18/10/2022 09:00:00.00	50.01	-1
18/10/2022 10:00:00.00	50	-1
18/10/2022 11:00:00.00	49.99	-1
18/10/2022 12:00:00.00	49.98	0
18/10/2022 13:00:00.00	49.98	-1
18/10/2022 14:00:00.00	49.97	

Rate of Rise and fall of Water Level at Haridwar in Uttarakhand

Table 4.6

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
20/08/2022 01:00:00.00	291.88	40
20/08/2022 02:00:00.00	292.28	7
20/08/2022 03:00:00.00	292.35	47
20/08/2022 04:00:00.00	292.82	128
20/08/2022 05:00:00.00	294.1	58
20/08/2022 06:00:00.00	294.68	-68
Event 2		
20/08/2022 09:00:00.00	293.95	-24
20/08/2022 10:00:00.00	293.71	-15
20/08/2022 11:00:00.00	293.56	-25
20/08/2022 12:00:00.00	293.31	-21

Rate of Rise and fall of Water Level at Anandpur in Odisha

Table 4.7

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
14/08/2022 16:00:00.00	36.76	16
14/08/2022 17:00:00.00	36.92	19
14/08/2022 18:00:00.00	37.11	16
14/08/2022 19:00:00.00	37.27	23
14/08/2022 20:00:00.00	37.5	16
14/08/2022 21:00:00.00	37.66	13
14/08/2022 22:00:00.00	37.79	16
Event 2		
20/08/2022 11:00:00.00	34.19	20
20/08/2022 12:00:00.00	34.39	35
20/08/2022 13:00:00.00	34.74	30
20/08/2022 14:00:00.00	35.04	76
20/08/2022 15:00:00.00	35.8	74
20/08/2022 16:00:00.00	36.54	66
20/08/2022 17:00:00.00	37.2	52
20/08/2022 18:00:00.00	37.72	38
20/08/2022 19:00:00.00	38.1	28
20/08/2022 20:00:00.00	38.38	23
20/08/2022 21:00:00.00	38.61	18
20/08/2022 22:00:00.00	38.79	11

Event 3		
21/08/2022 09:00:00.00	38.81	-17
21/08/2022 10:00:00.00	38.64	-7
21/08/2022 11:00:00.00	38.57	-36
21/08/2022 12:00:00.00	38.21	-19
21/08/2022 13:00:00.00	38.02	-17
21/08/2022 14:00:00.00	37.85	-20
21/08/2022 15:00:00.00	37.65	-13
21/08/2022 16:00:00.00	37.52	-14

Thus applying the same criteria (±15cm) on both types of sites is technically incorrect.

2. It is not appropriate to compare the forecast performance accuracy of statistically insignificant number of forecasts. For example, Meghna Division Silchar issued 4 no. of forecast and all were within permissible limit with 100% accuracy whereas in Lower Godavari Division 467 no. of forecast were issued for various sites under its jurisdiction in 2022 with 442 no. within permissible limit with 94.5% which is less than 100%. This indicates that where the no. of forecasts issued are statistically insignificant in such cases the concerned division is likely to gain or lose in accuracy with a large swing. Out of 4 forecasts issued even if 1 forecast goes out the permissible limit then the accuracy will swing from 100% to 75%.

   Therefore, the accuracy percentage must be seen together with related no. of forecast.

3. Actual and forecasted rainfall received from by IMD is not so accurate, sometimes it varies largely, that resulted into the inaccurate level and inflow forecast. In addition, spatial and temporal distribution of rainfall of rainfall is not so sufficient to predict accurate catchment rainfall representation.

4. The absence of Rain gauge station in the intervening catchment between Base station and Forecast station due to which accounting accurate runoff from intervening catchment is very difficult.

5. Forecast at the sites located downstream of reservoir, also affected by the release from the dam. Mostly estimated release is not matching with the actual release from the dam.

CHAPTER – 5

Evaluation of 5 Day Flood Advisories (2021 and 2022 floods)

5.1 BACKGROUND

CWC is currently providing 5-day advisory flood forecast on its web portal https://aff.india-water.gov.in/ through pan India 1D rainfall-based mathematical modelling for 20 major river basins of the country covering 199 water level and 134 reservoir inflow forecast stations. This is a major paradigm shift in 2016 from the conventional Gauge-to-Gauge correlation to a more scientific modelling technique for flood forecasting. The system is totally in-house developed using modelling software's (MIKE 11, ArcGIS etc) for flood forecasting which is updated every three hours for all the stations simultaneously in automatic mode.

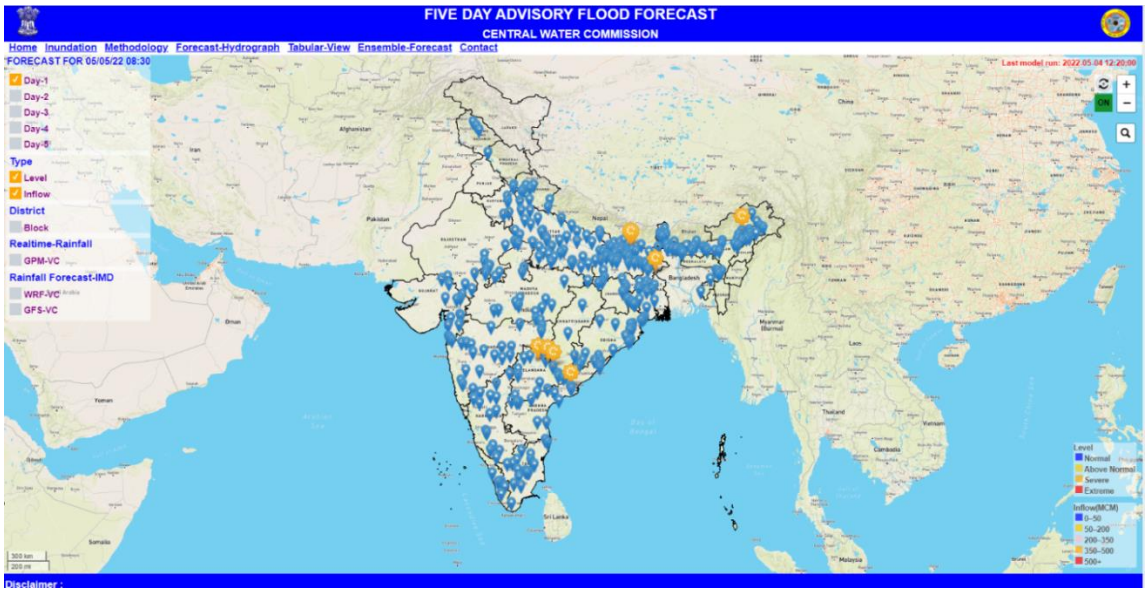


Fig 5.1 : Five day advisory flood forecast portal

5.2 Inputs for model

It uses both the hydrologic and hydrodynamic modelling techniques for real-time water level and inflow prediction in the major rivers and reservoirs respectively. This new intervention has increased the lead time to 120 hours (5 days), from 72 hours (3 days), for all the stations. The five day advance forecast is generated using various available rainfall data products like forecasted rainfall data GFS (Global Forecast System) and WRF (Weather Research and Forecasting) provided by IMD (Indian Meteorological Department), Rainfall estimates namely GSMaP (Global Satellite Mapping of Precipitation- JAXA product) & GPM (Global Precipitation Measurement- NASA & JAXA product) . The inputs for Model is shown in Fig 3.2

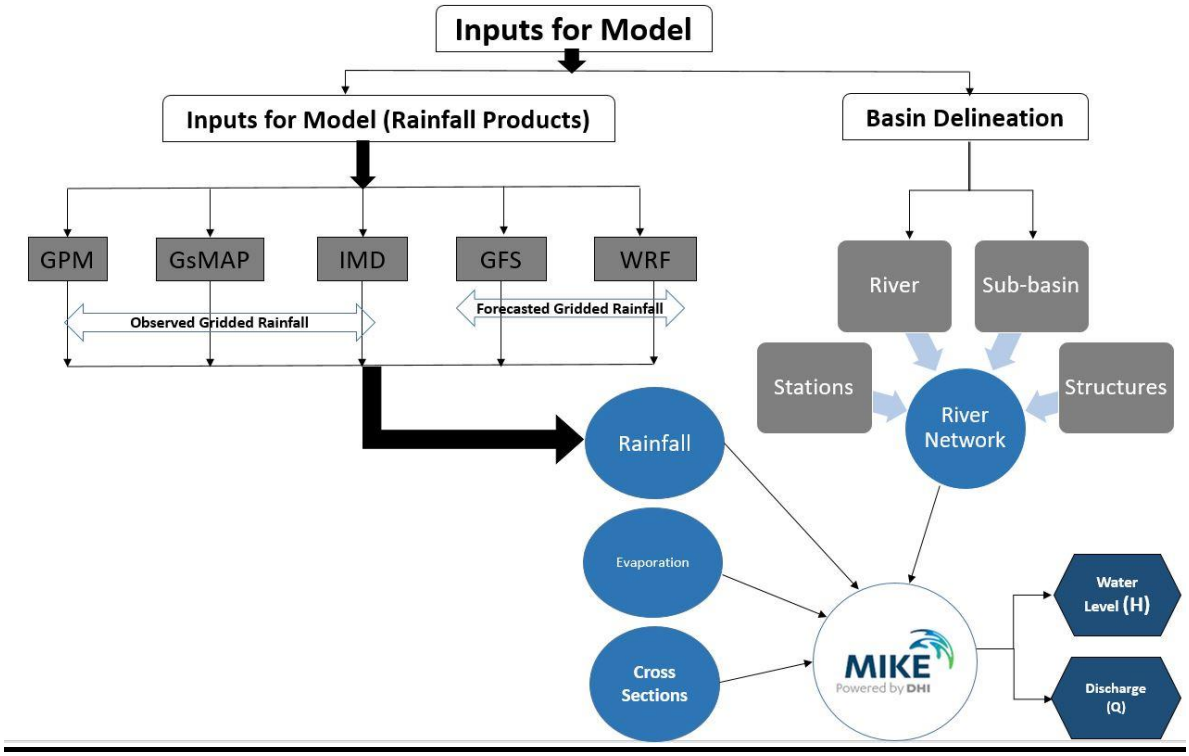


Fig 5.2 Inputs for Model

5.3 PERFORMANCE OF 5 DAYS FLOOD ADVISORY:

The accuracy of 5- day Flood Advisories depends on the accuracy of inputs i.e. observed rainfall for hind cast period and rainfall forecast for forecast period. The accuracy of 5 days Flood Advisory for Water Level (WL) has been evaluated for the 2021 and 2022 flood periods.

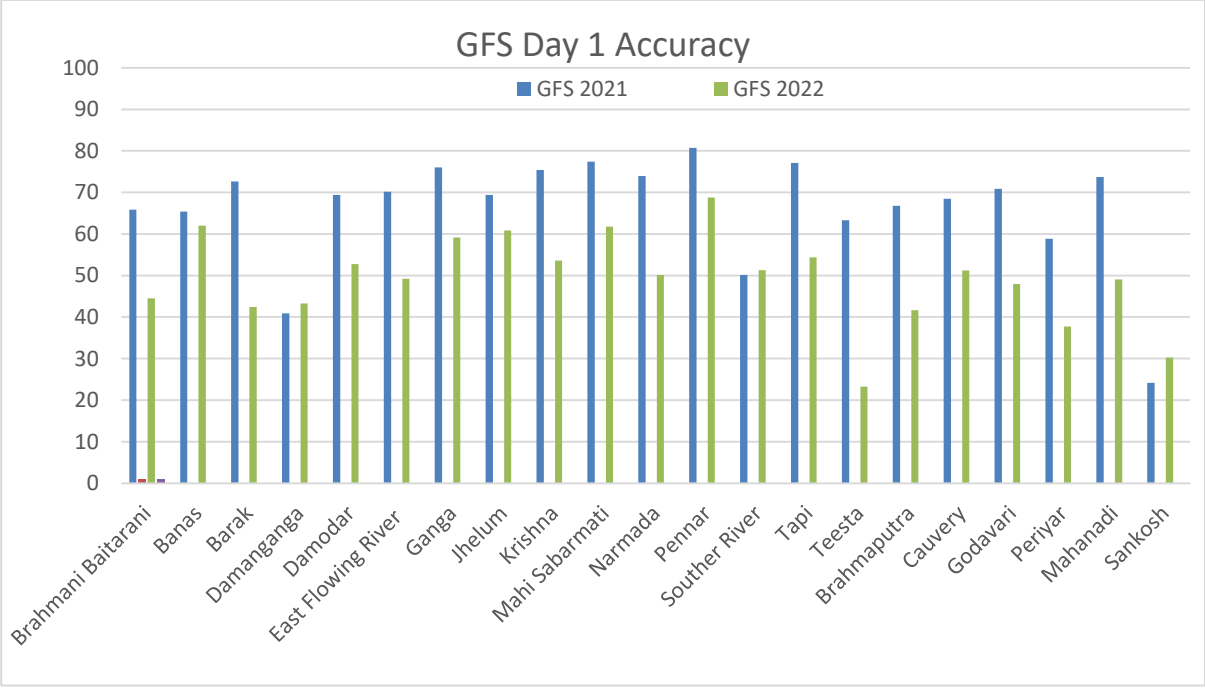


Chart 5.1

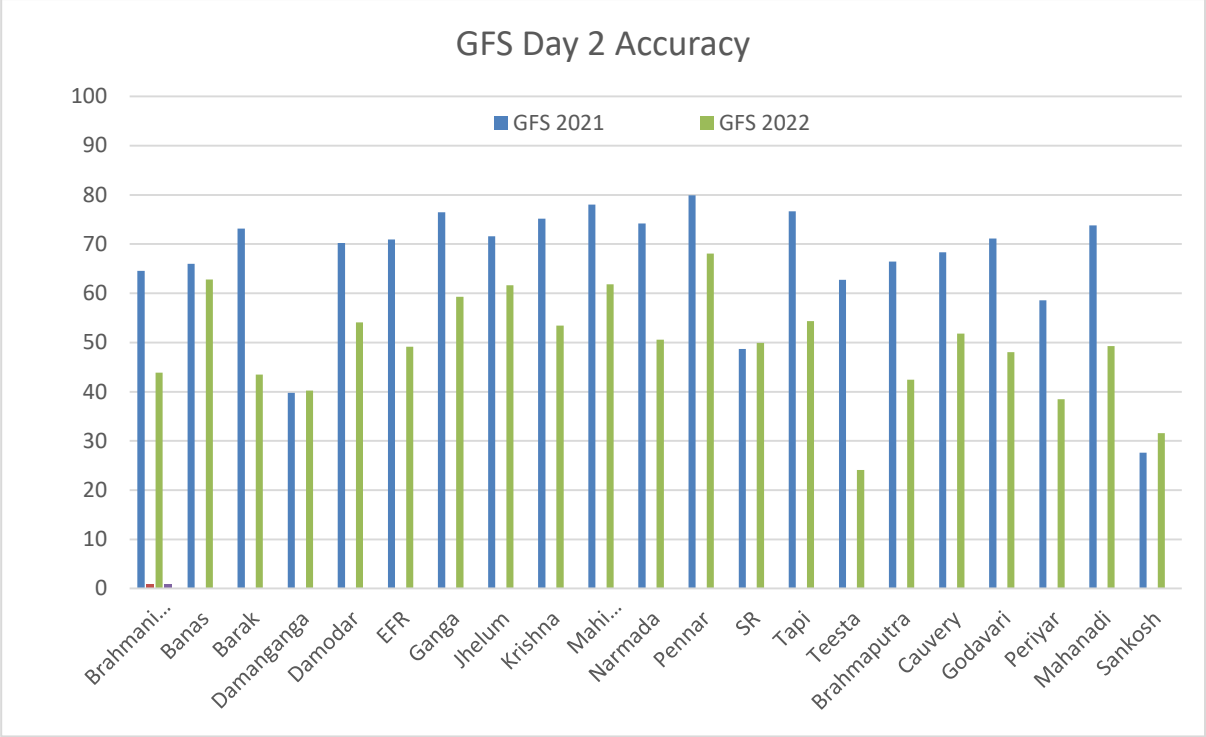


Chart 5.2

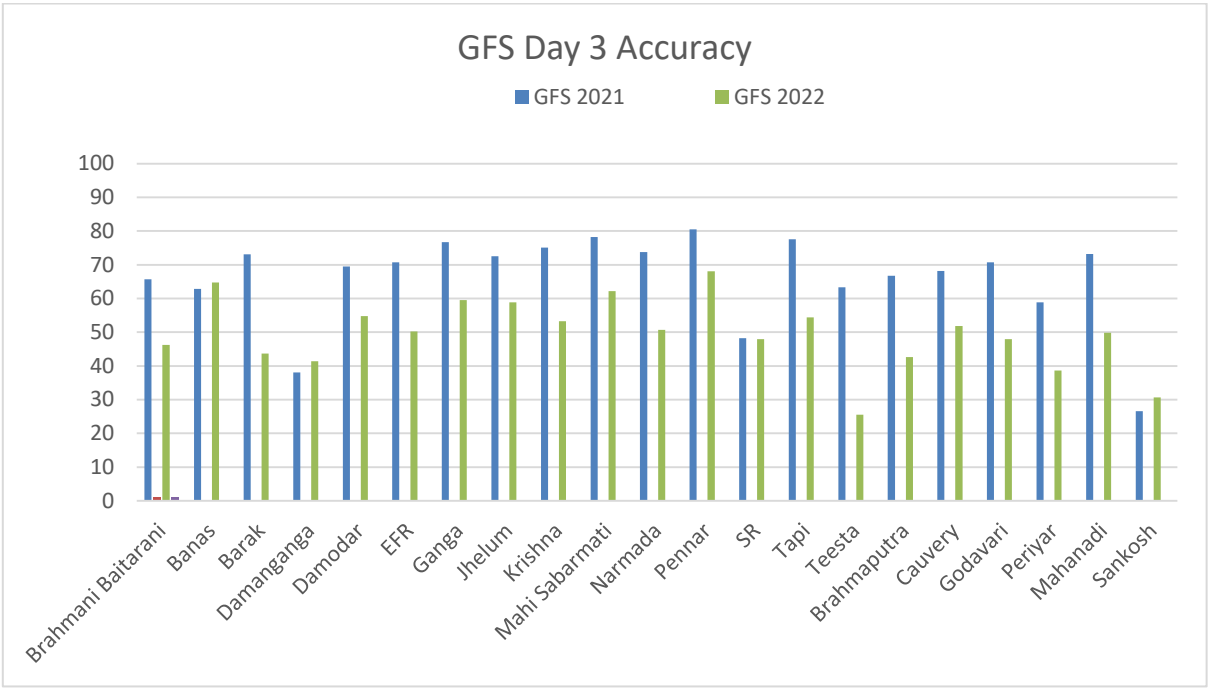


Chart 5.3

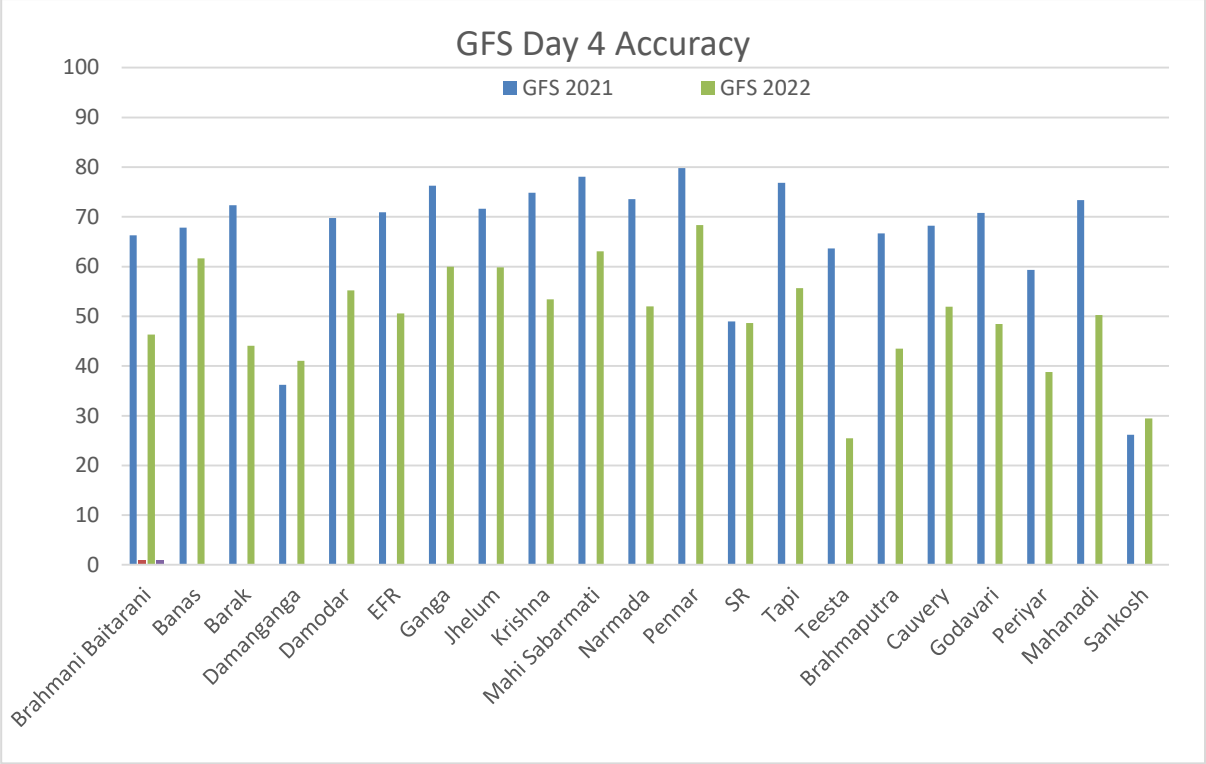


Chart 5.4

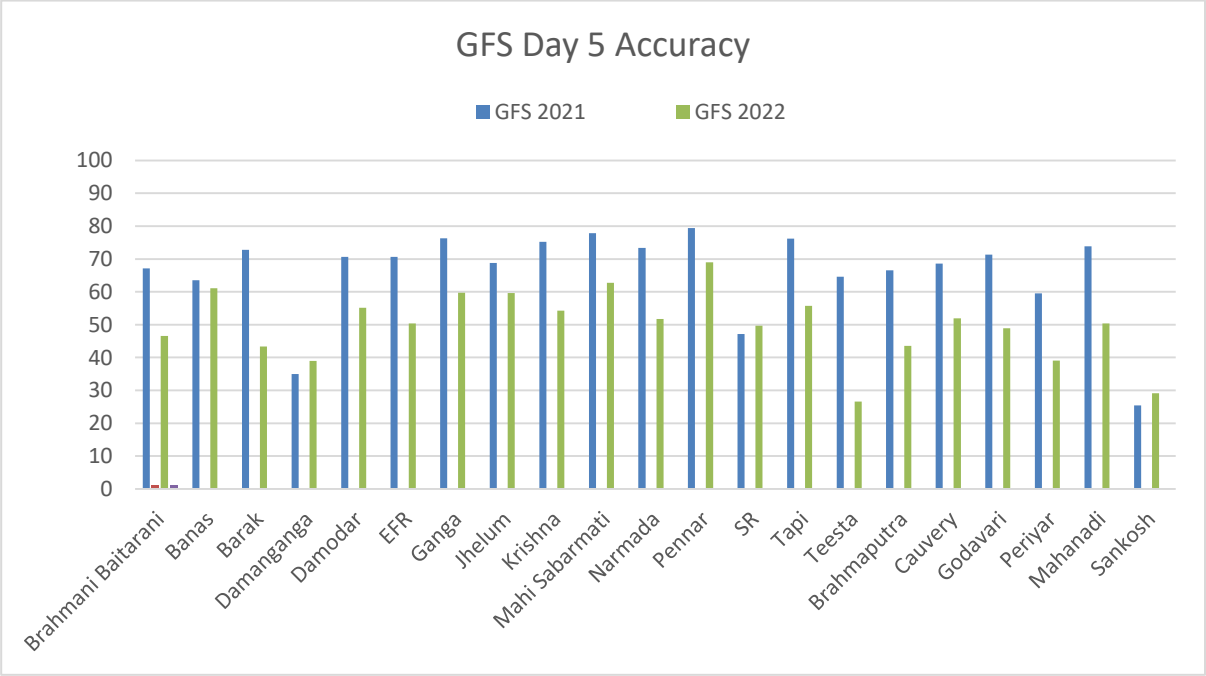


Chart 5.5

5.4. COMPARISON OF GFS RAINFALL & MODEL RESULT OF DAY1 TO DAY5 FOR THE YEAR 2021 & 2022

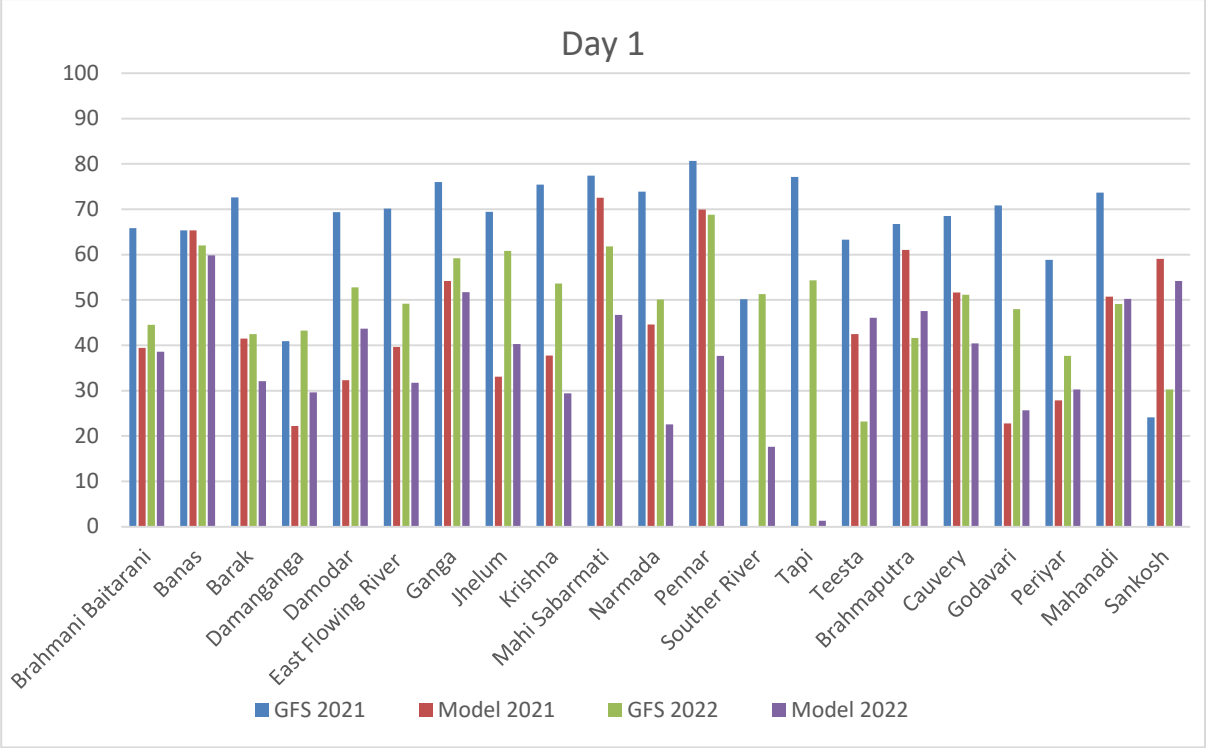


Chart 5.6

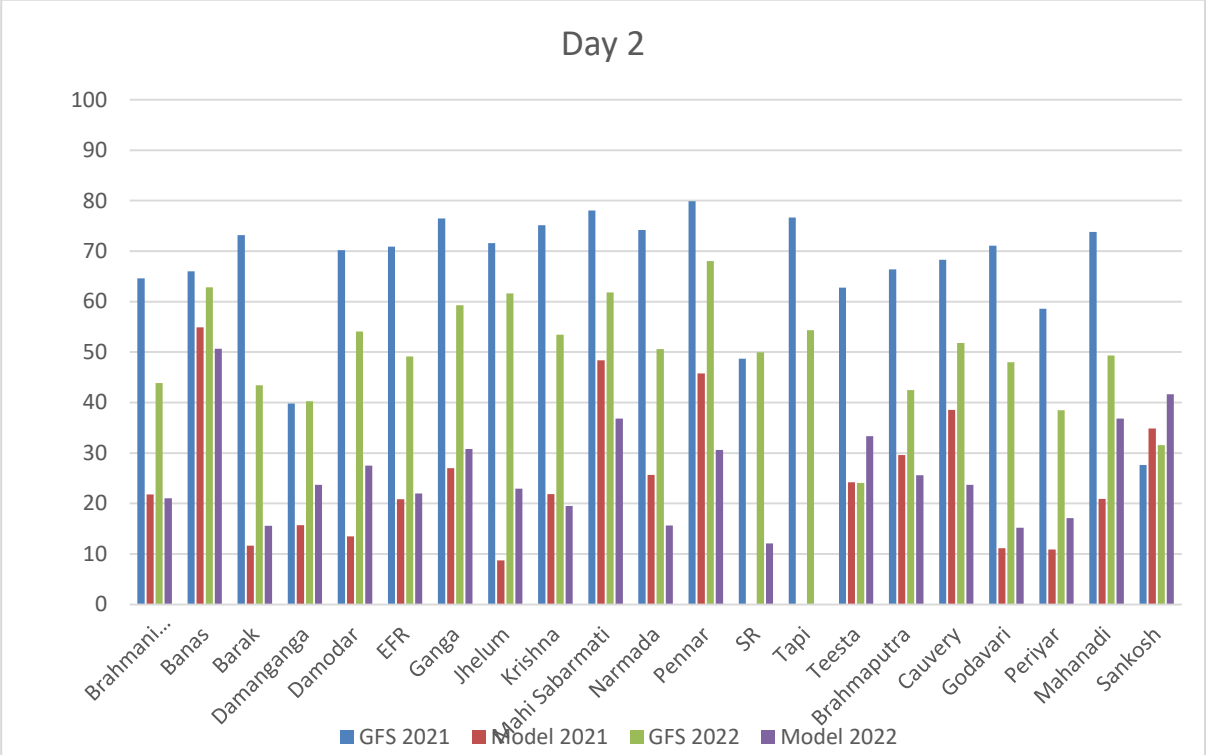


Chart 5.7

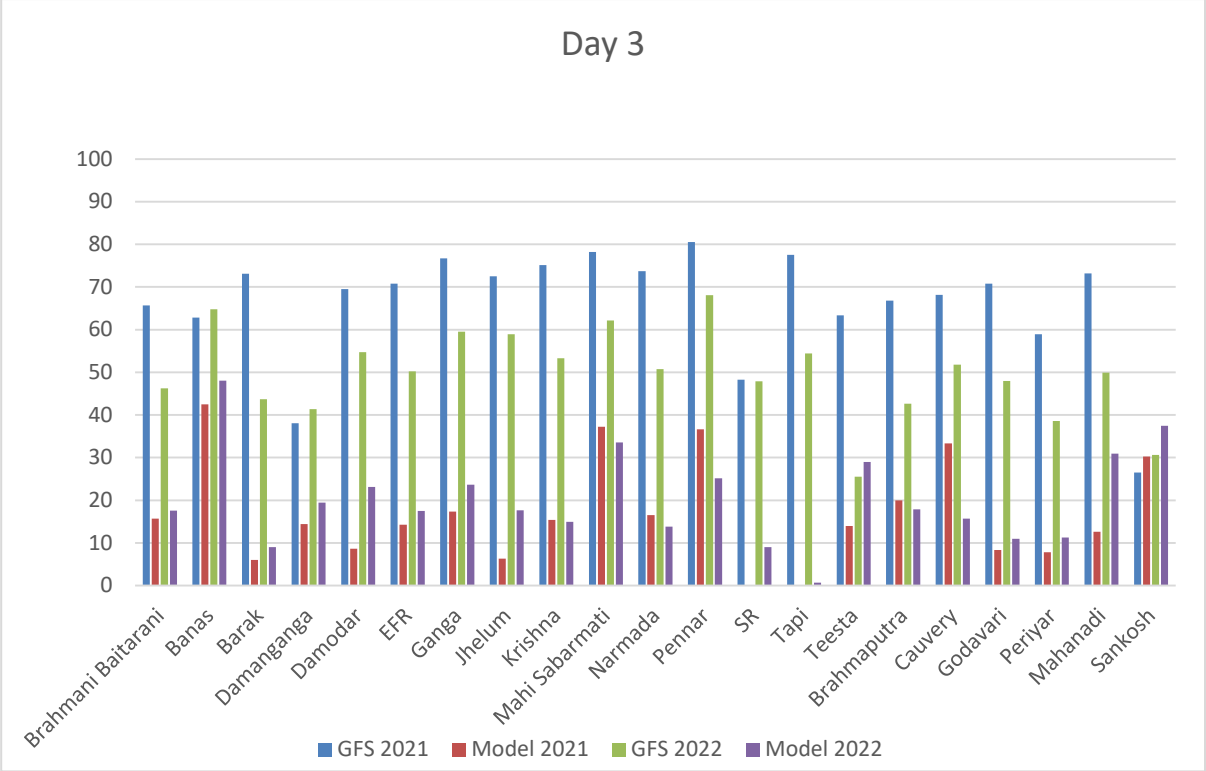


Chart 5.8

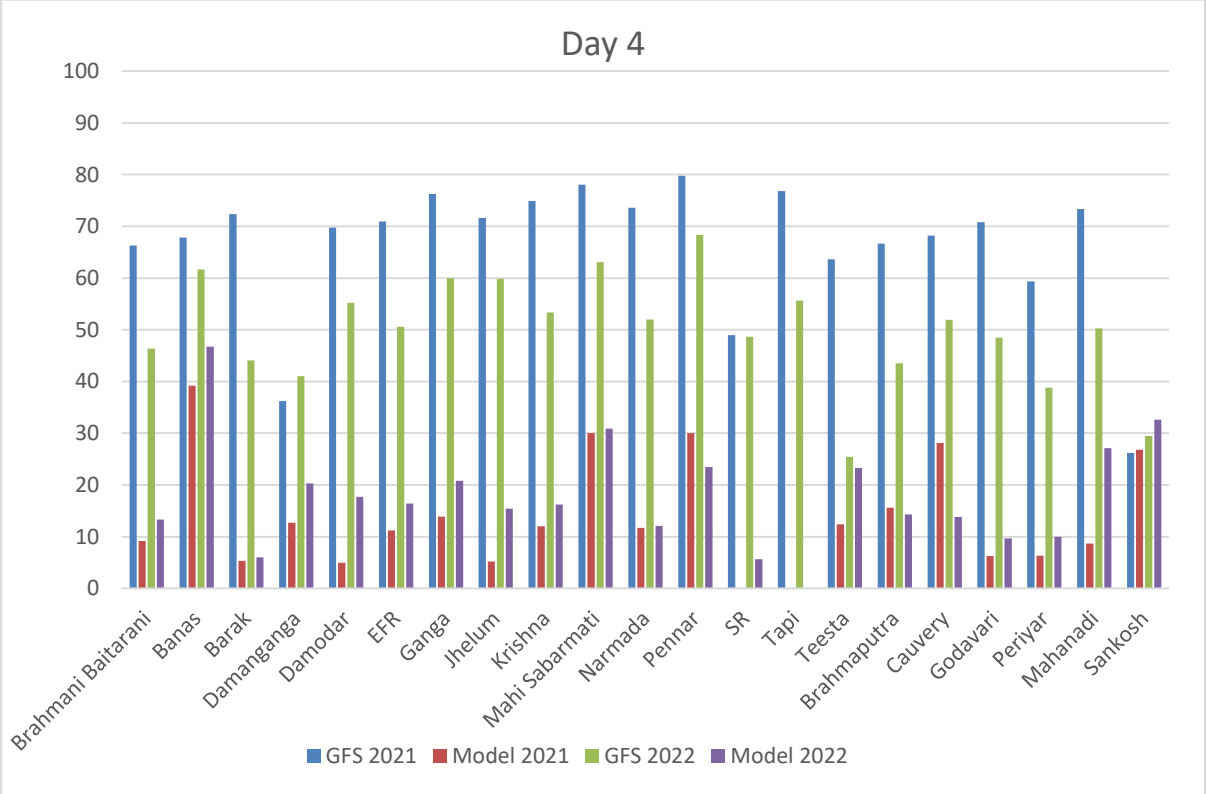


Chart 5.9

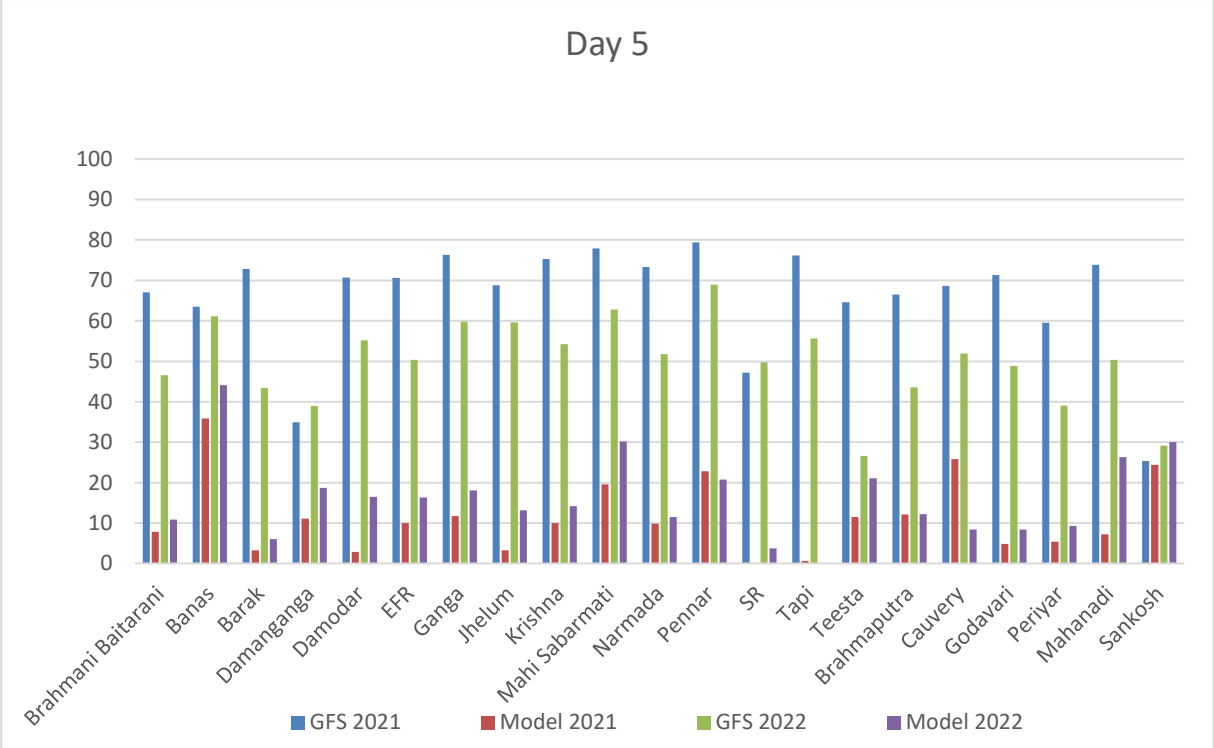

Day 5
100
90
80
70
60
50
40
30
20
10
0
Brahmani Baitarani
Banas
Barak
Damanganga
Damodar
EFR
Ganga
Jhelum
Krishna
Mahi Sabarmati
Narmada
Pennar
SR
Tapi
Teesta
Brahmaputra
Cauvery
Godavari
Periyar
Mahanadi
Sankosh
GFS 2021
Model 2021
GFS 2022
Model 2022

Chart5.10

CHAPTER – 6

ANALYSIS OF FLOOD EVENTS IN INDIA

6.1 INTRODUCTION

In India about 80% of the annual rainfall occurs during the period of South- West monsoon from June to September except some portion of the south eastern part of peninsular India where the main rain occurs during the period of North East Monsoon from October to December.

The variation in rainfall pattern in India from one region to another is very vast. Generally, the normal annual rainfall in North Eastern region is very high compared to Western part of India. Main Flood prone basins are Ganga and Brahmaputra and the states affected are Assam, Bihar, Uttar Pradesh and West Bengal.

However, it is observed that during the last 5 years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamilnadu in addition to existing flood prone states like Assam, Bihar, West Bengal and Uttar Pradesh. **Fig 6.1** and **Fig 6.2** shows graph showing state wise extreme and Severe flood situation during the year 2018 to 2022.

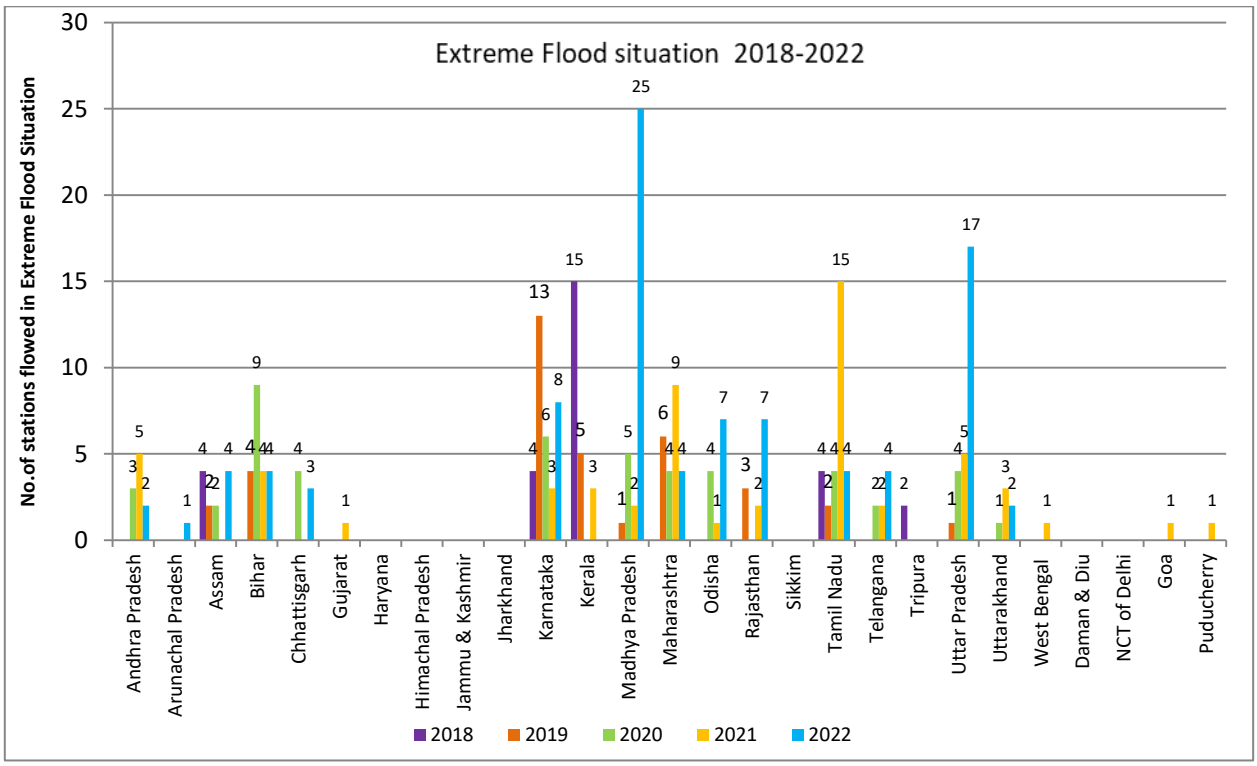


Fig. 6.1: State wise extreme flood situation during the years 2018 to 2022

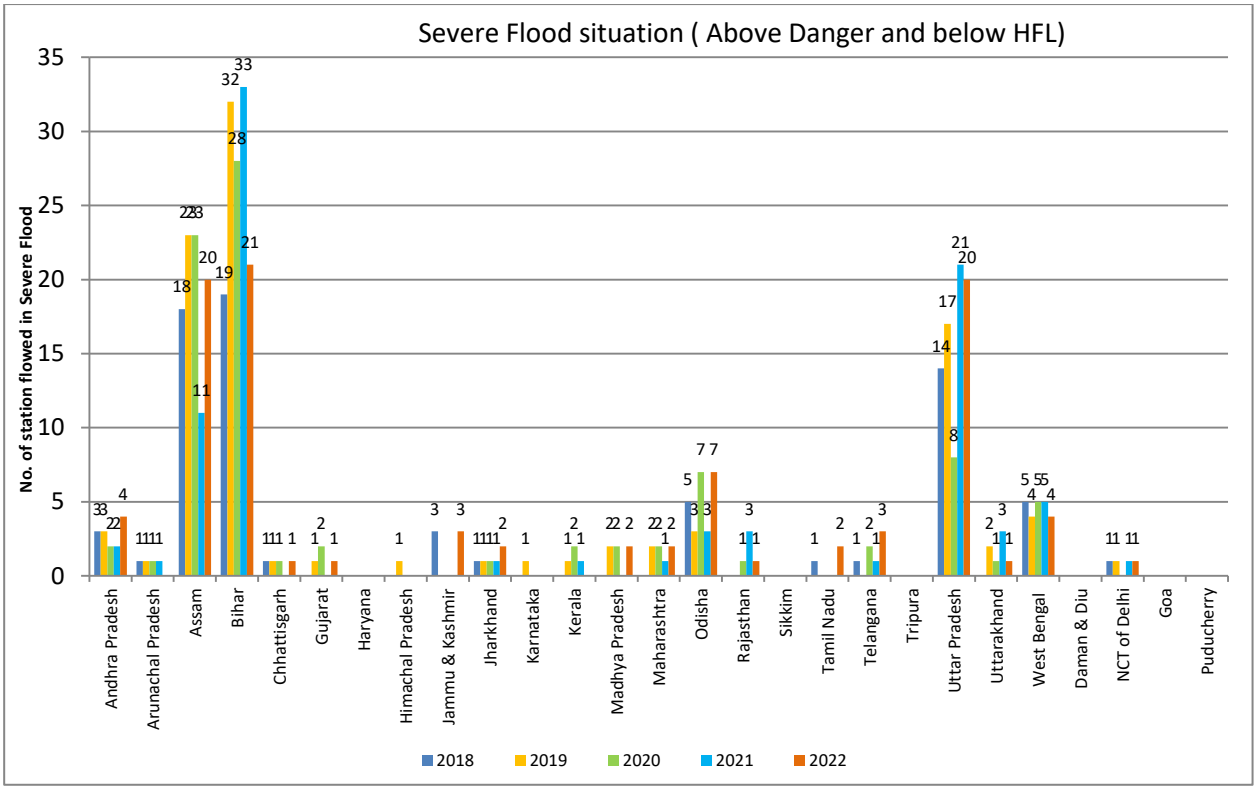


Fig. 6.2: State wise Severe flood situation during the years 2018 to 2022

6.2 STATE WISE FLOOD SITUATION IN INDIA DURING LAST 5 YEARS (2018-2022)

Under this section state-wise, no.of days on which river flowed in severe and extreme flood situation over various flood forecasting sites are presented.

6.2.1 ANDHRA PRADESH

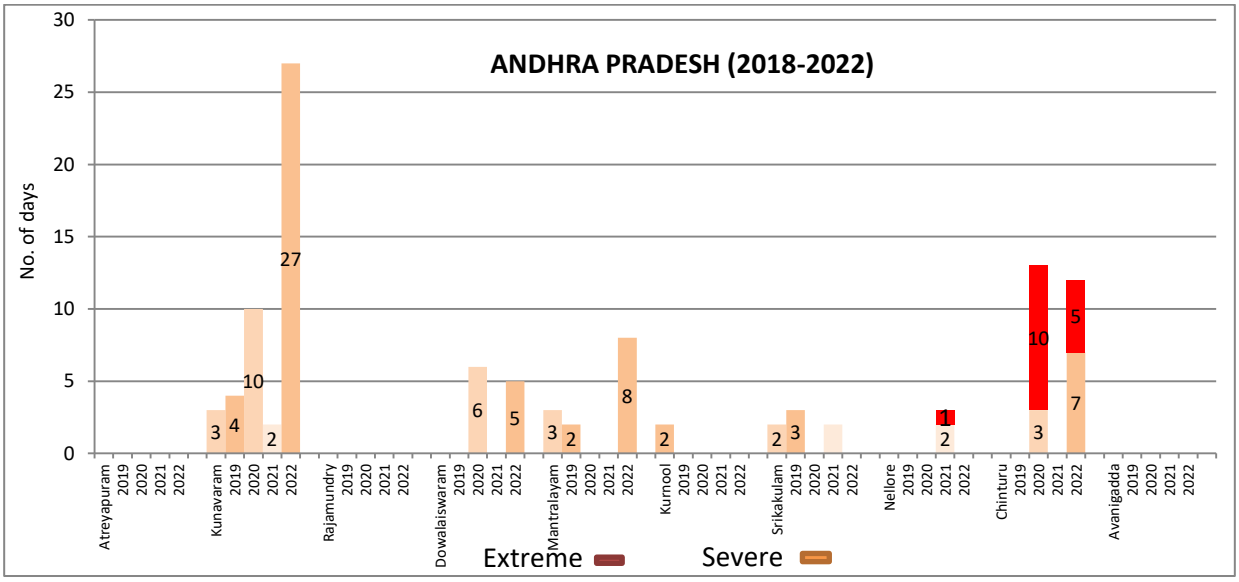
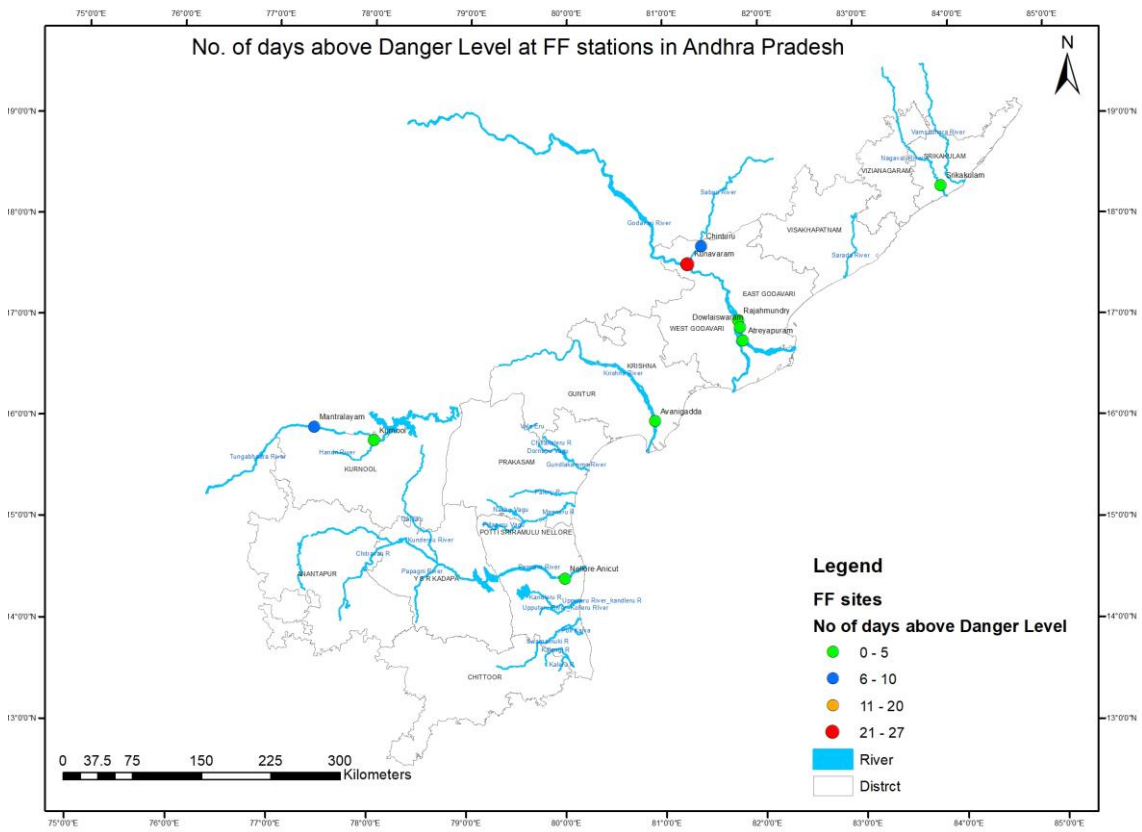


Fig 6.3

On analysis of 5 year extreme and severe situations it is observed that more no.of flood situations existed on Chinturu (on Sabari river) and Kunavaram sites over Godavari basin. This reflects the flood situations existed in Godavari and Sabari river in 2020 and 2022.

Flood situation in Andhra Pradesh during 2022 is shown in the **Map 6.1** given below.



Map 6.1

6.2.2 ARUNACHAL PRADESH

No CWC sites flowed in severe and extreme flood situations during last 5 years.

6.2.3 ASSAM

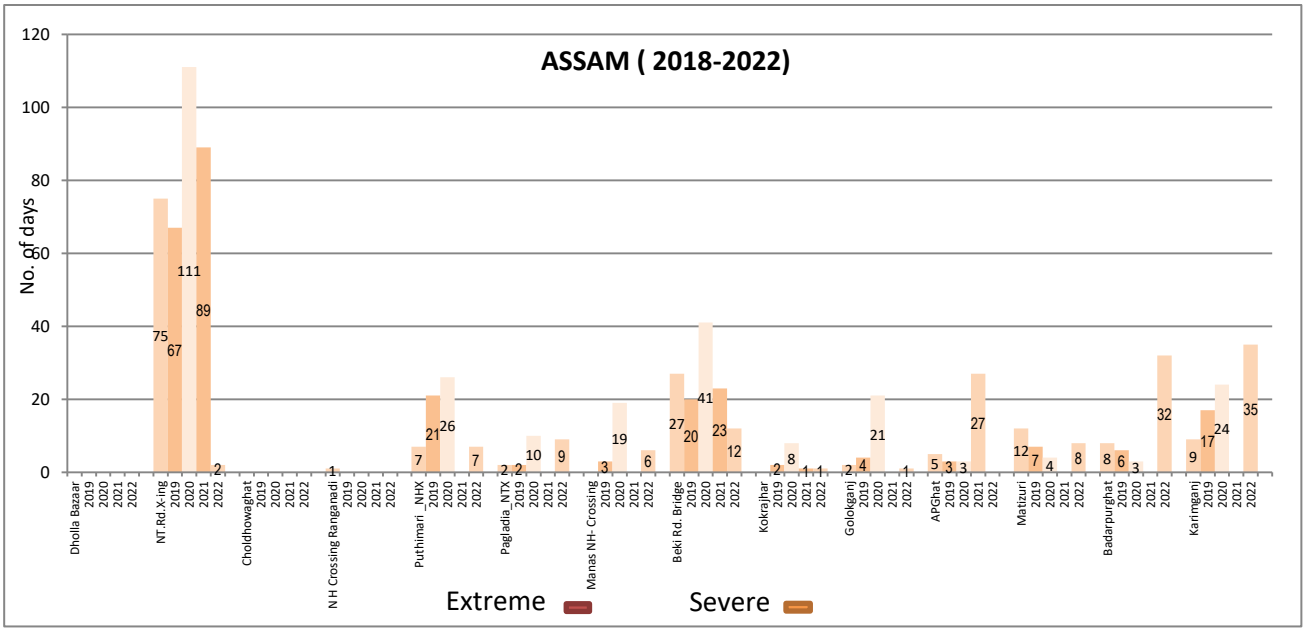


Fig 6.4(i)

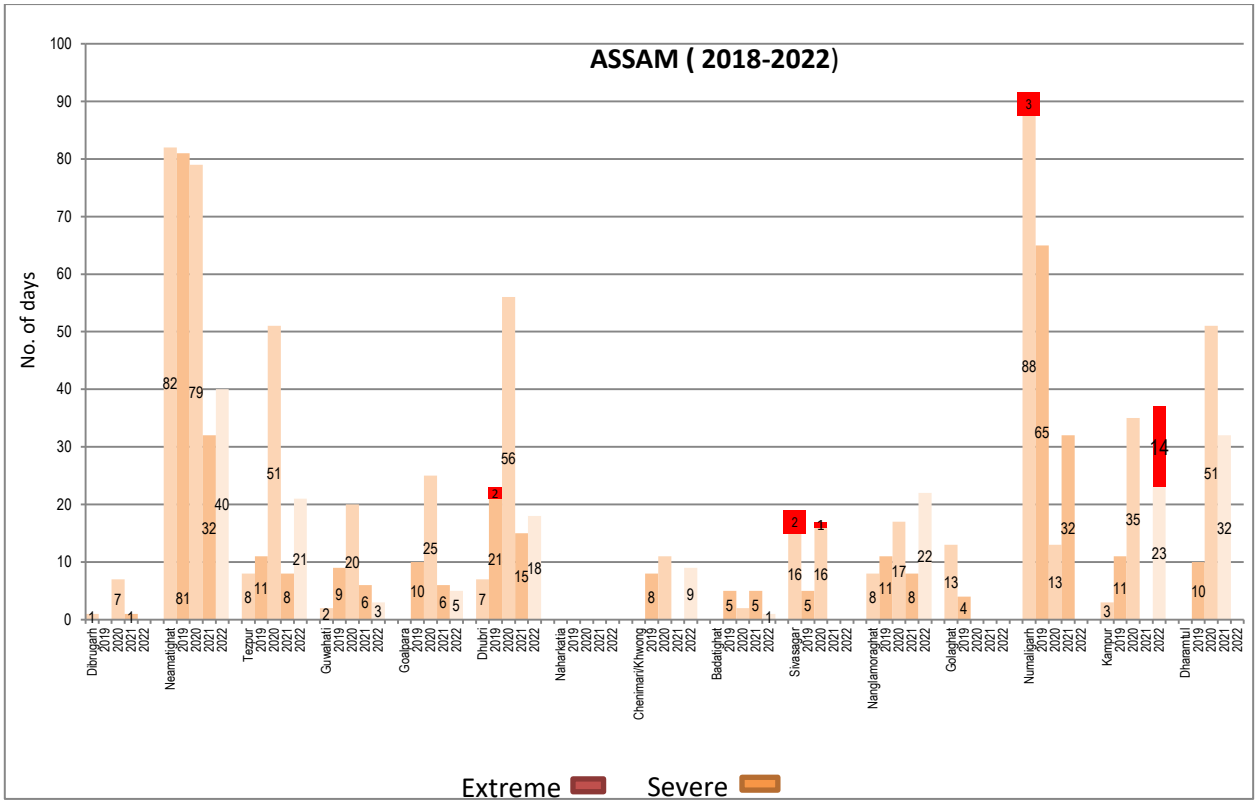
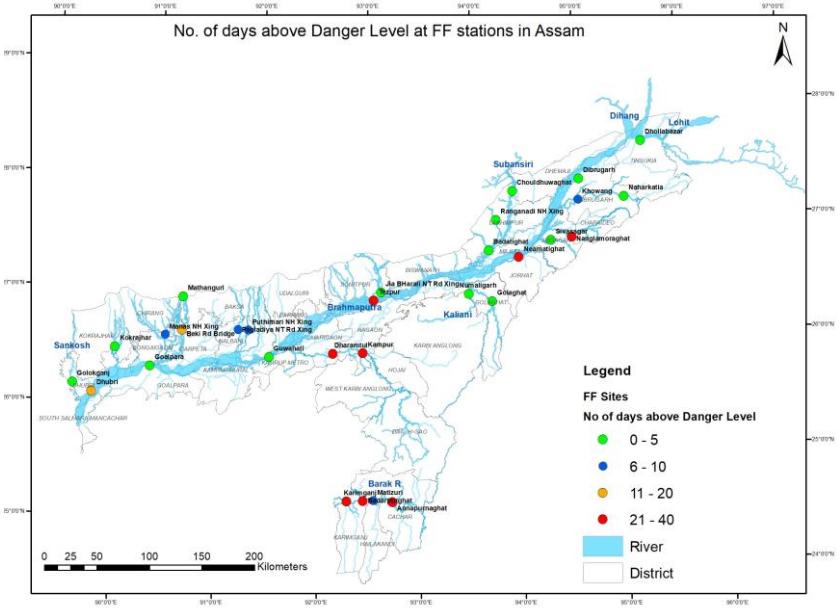


Fig 6.4(ii)

As per the plots more no.of severe and extreme flood situations occurred at sites

(1) NT Rd crossing Jiabharali over Jiabharali river, northern tributary of Brahamputra in Sonitpur district.
(2) Numaligh on Dhansiri river southern tributary of Brahamputra in Golaghat dist.
(3) Kampur and Dharamtul on Kopili river, southern tributary of Brahamputra in Nagaon and Marigaon districts respectively.
On Brahamputra main stem more no.of flood situations existed at sites Neamatighat (Jorhat dist.), Tezpur (Sonitpur dist.) and Dhubri (Dhubri dist.) in last 5 years.

Flood situation in Assam during 2022 is shown in the **Map 6.2** given below.



Map 6.2

6.2.4 BIHAR

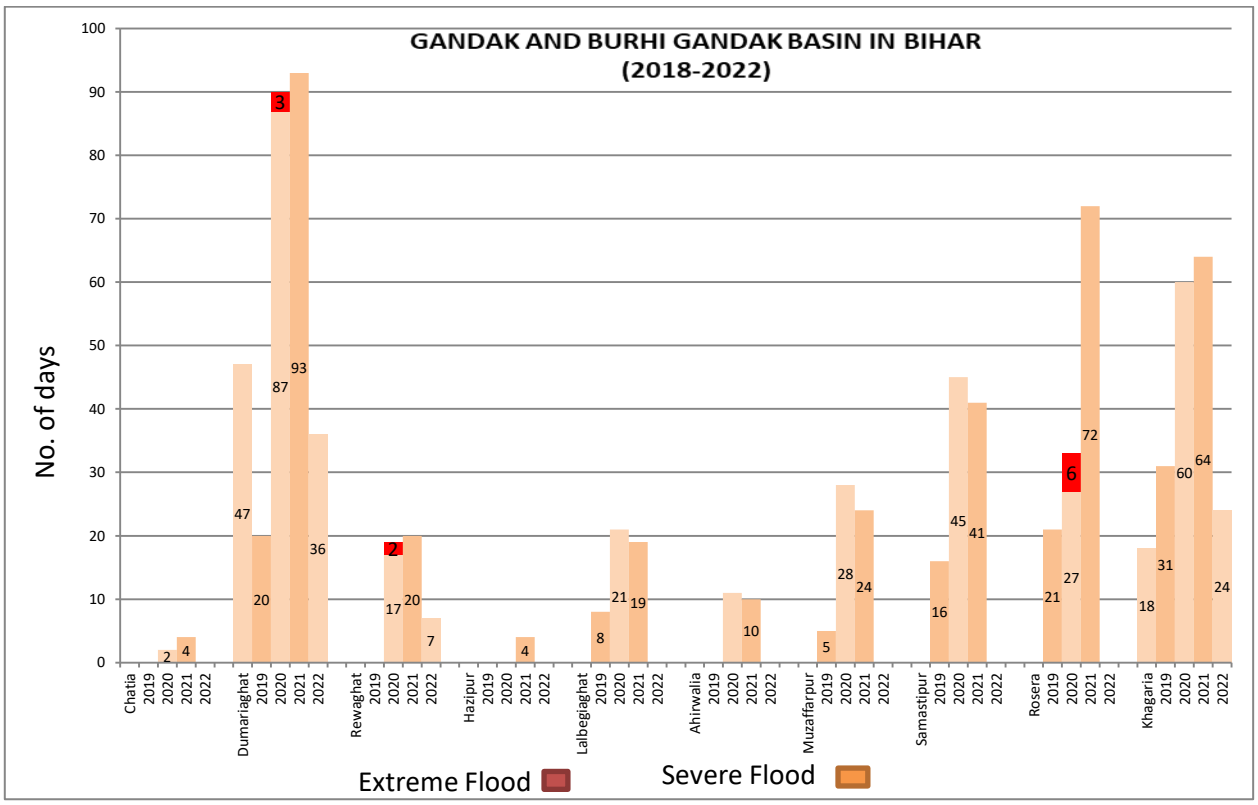


Fig 6.5(i)

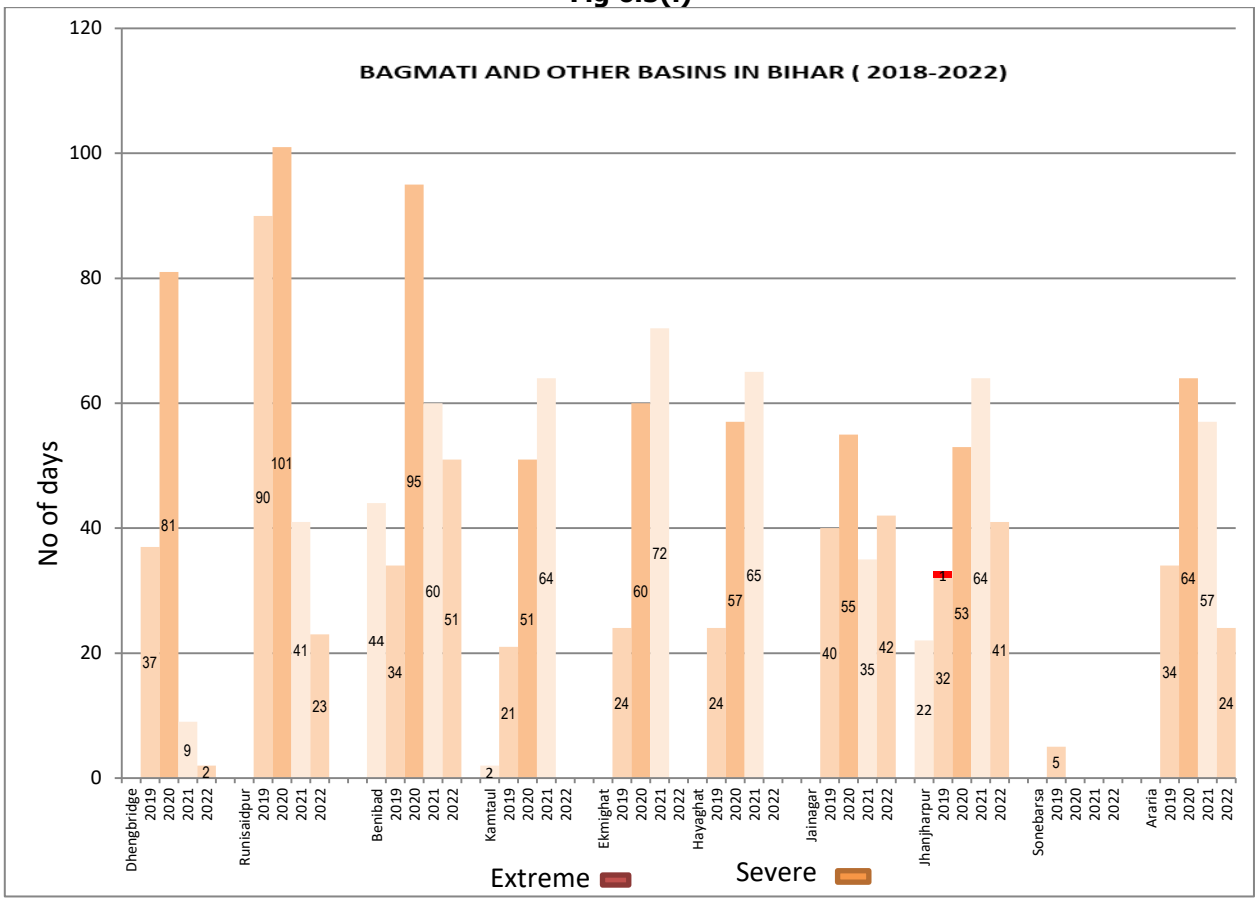


Fig 6.5(ii)

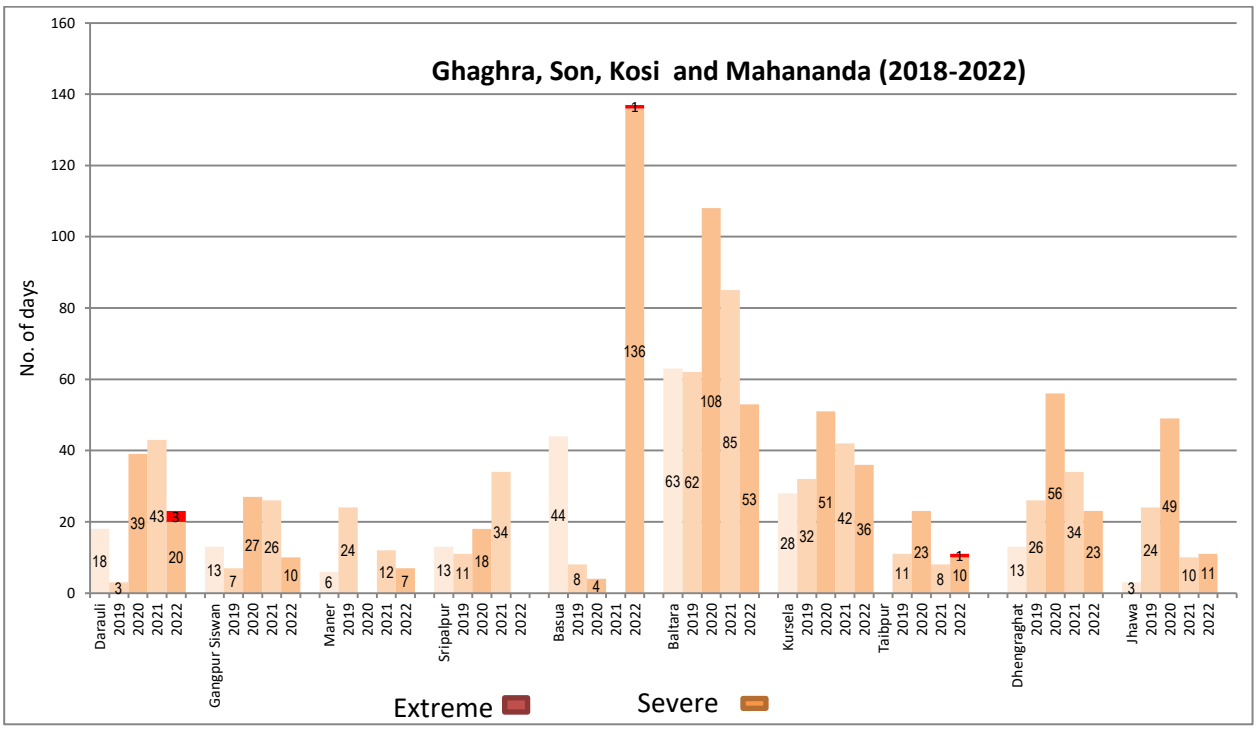


Fig 6.5(iii)

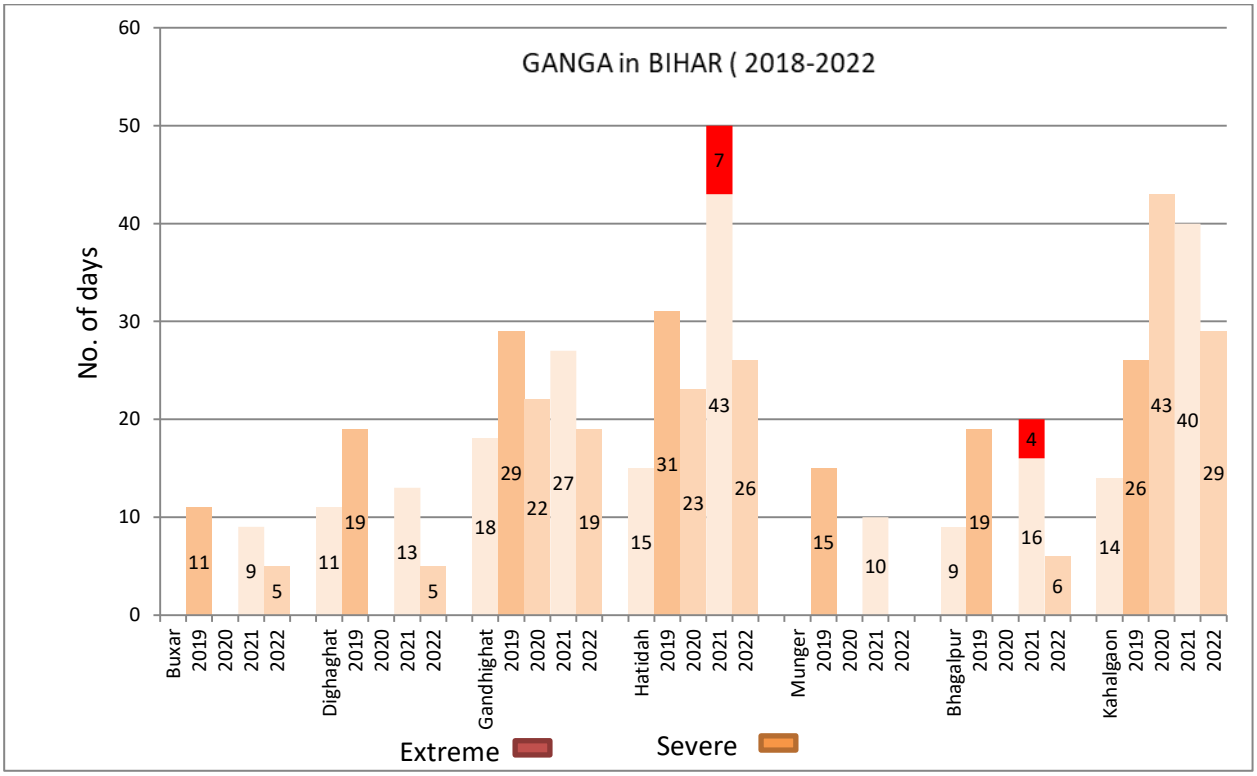


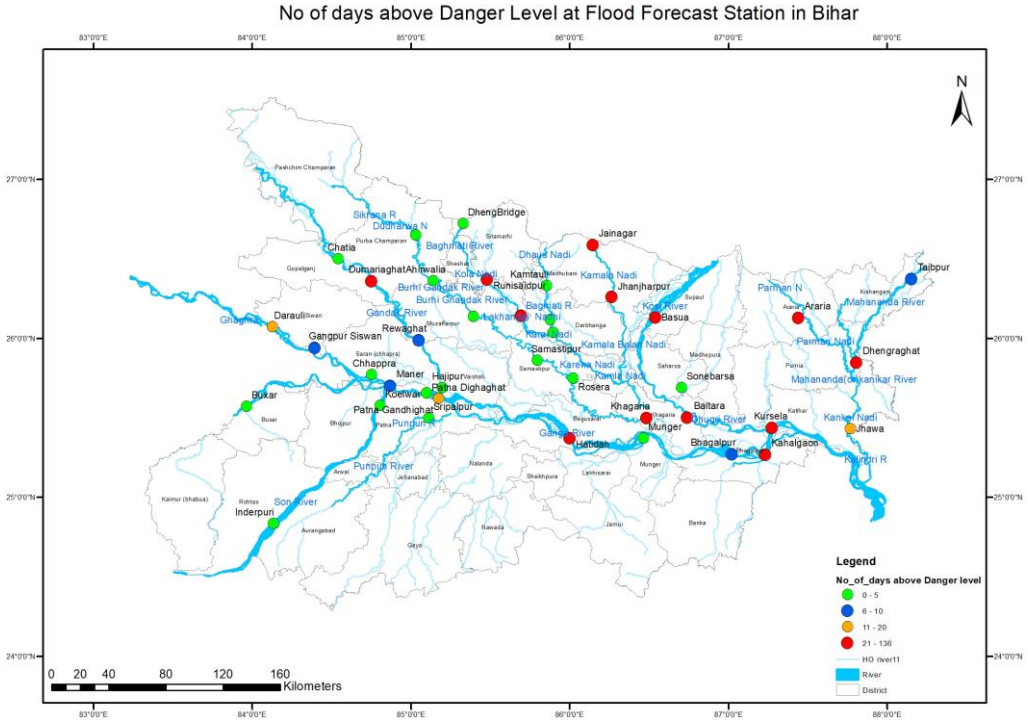
Fig 6.5(iv)

From the above given plots it is evident that more no.of flood situations occurs in northern tributaries of Ganga such as (1) Bagmati (sites Dhenbridge, Hayaghat, Runisaidpur, Benibad) in Sitamarhi, Dharbanga & Muzaffarpur districts; (2) river Adhwara (sites Sonebarsa, Kamtaul, Ekimghat) in Sitamarhi & Dharbanga districts; (3) rivers Kamala-balan (sites Jainagar & Jhanjharpur) in Madhubani district. Next

frequent flooding's are found to occur in (1) main Kosi river (sites Basua & Baltara) in Supaul & Khagaria districts; (2) river Mahananda and its tributary Parman (sites Dhengraghat, Jhawa, Araria) in Purnea, Kathihar and Araria districts; (3) river Gandak (site Dumariaghat) in Gopalganj district; (4) river Burhi Gandak (sites Samastipur, Rosera, Khagaria) in Samastipur & Khagaria districts.

On main Ganga stem the state flood situations are comparatively less and more cases are found at sites Hatidah and Kahalgaon in Patna and Bhagalpur districts respectively.

Flood situation in Bihar during 2022 is shown in the **Map 6.3** given below.



Map 6.3

6.2.5 CHHATTISGARH

CWC sites showed no severe and extreme flood situations during last 5 years.

6.2.6 GUJARAT

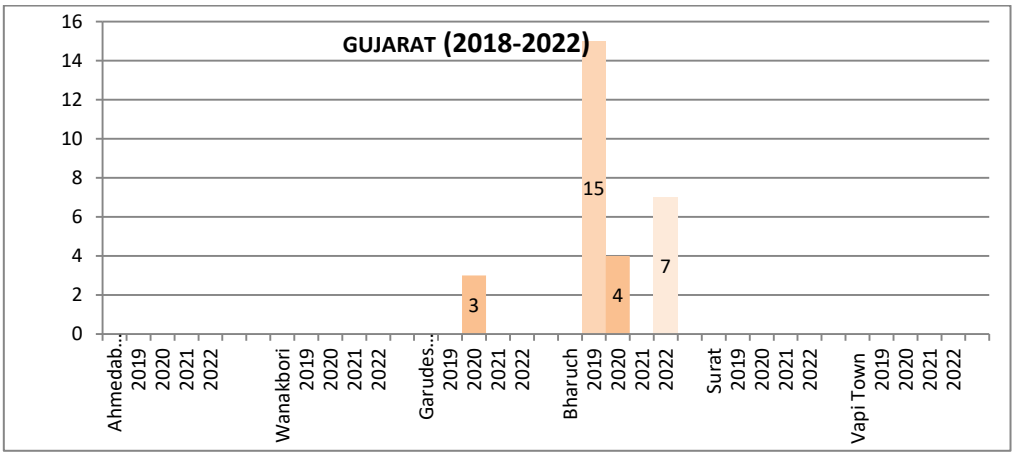
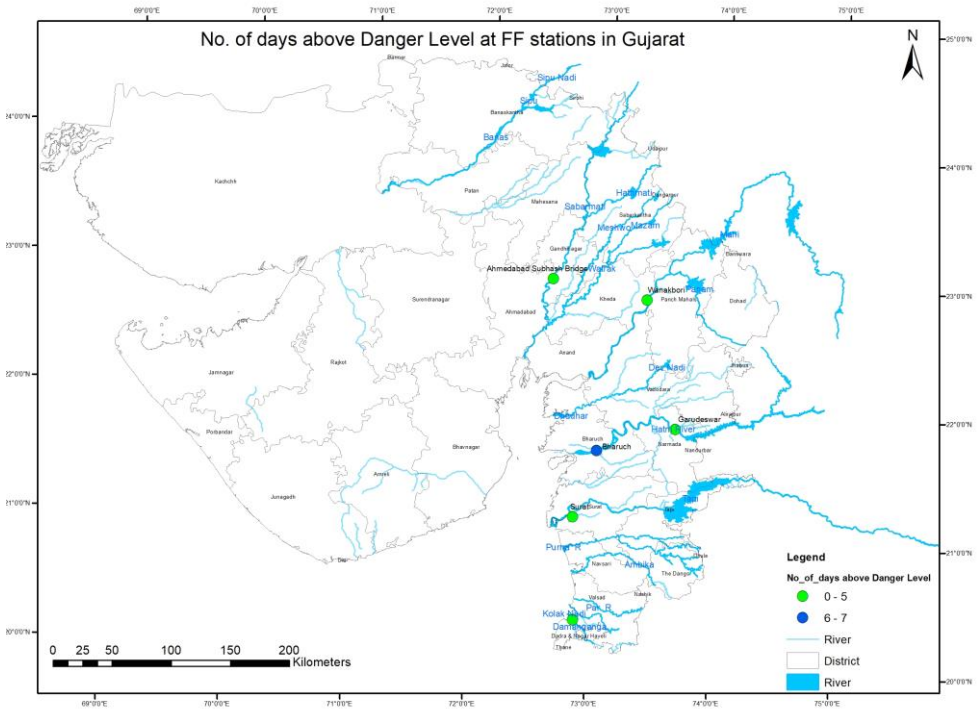


Fig 6.6

Flood situations in Gujarat are mainly confined to site Bharuch in Narmada basin situated downstream of Sardar Sarovar dam. The causative factors for floods are mainly releases from Sardar Sarovar and topography of the region.

Flood situation in Gujarat during 2022 is shown in the **Map 6.4** given below.



Map 6.4

6.2.7 JHARKHAND

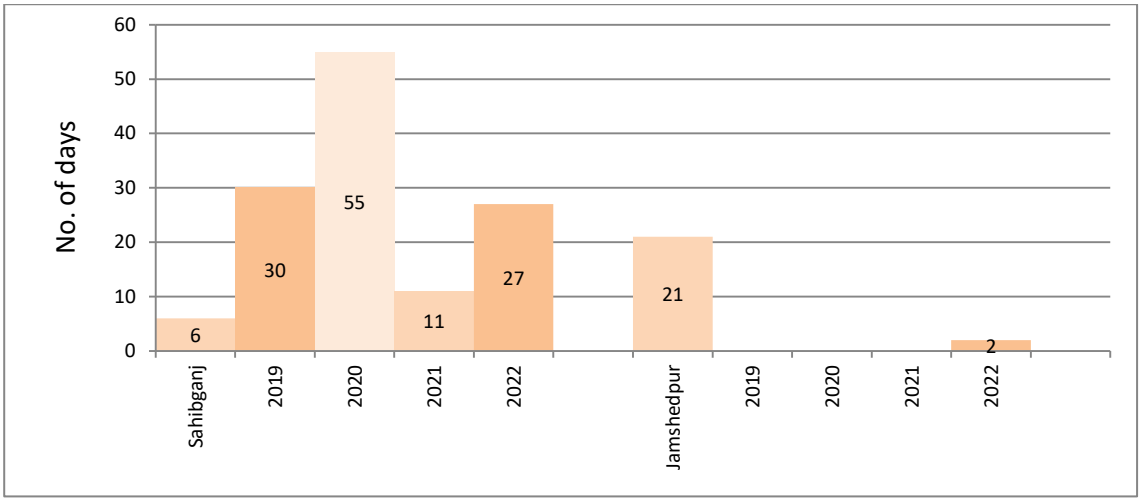
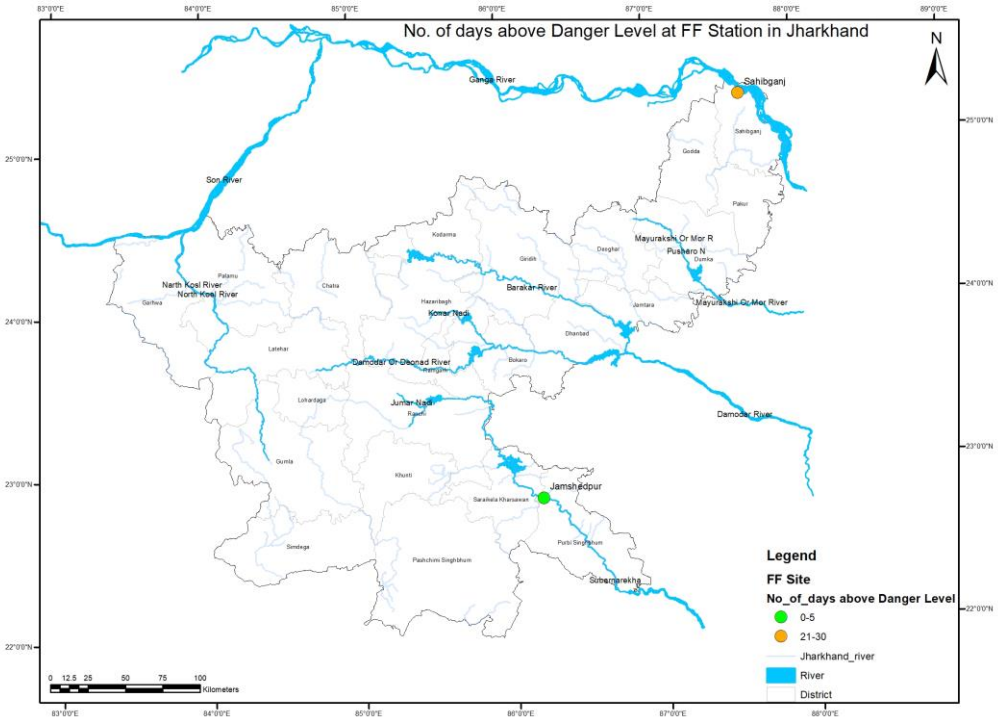


Fig 6.7

Main flood situations are reported on site Sahibganj in Sahibganj district on main Ganga. Flood situation in Jharkhand during 2022 is shown in the **Map 6.5** given below.



Map 6.5

6.2.8 KARNATAKA

Adequate flood levels forecasting sites are needed in Karnataka for depicting flood situations in Karnataka.

6.2.9 KERALA

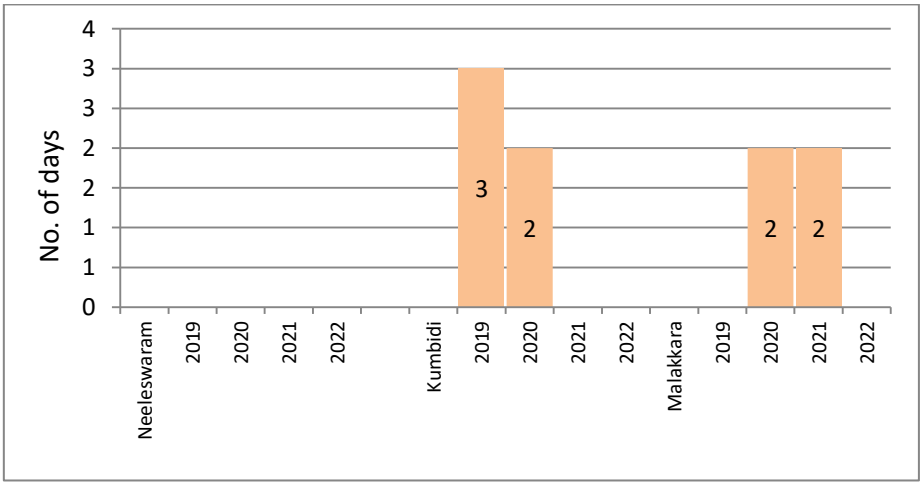


Fig 6.8

Kerala state flood forecasting sites were initialized after the devastating floods of 2018. As per observed scenario, flood situations occurred more in Kumbidi site on Bharathapuzha river and site Malakkara on Pamba river.

No Forecasting station crossed Danger level during 2022 in Kerala.

6.2.10 MADHYA PRADESH

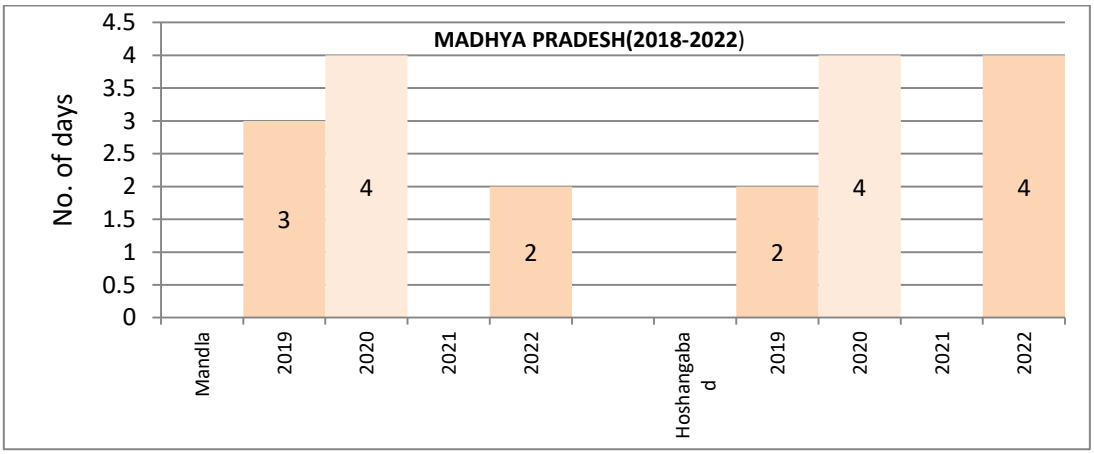
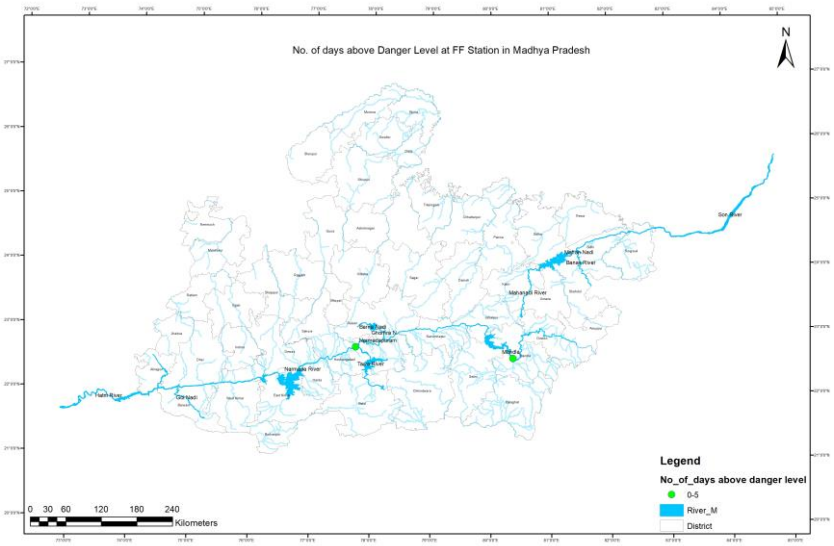


Fig 6.9

In Madhya Pradesh CWC has two level forecasting sites Mandla and Hoshangabad on main Narmada stem both the sites depicts more or less same flood situations in last 5 years.

Flood situation in Madhya Pradesh during 2022 is shown in the **Map 6.6** given below.



Map 6.6

6.2.11 MAHARASHTRA

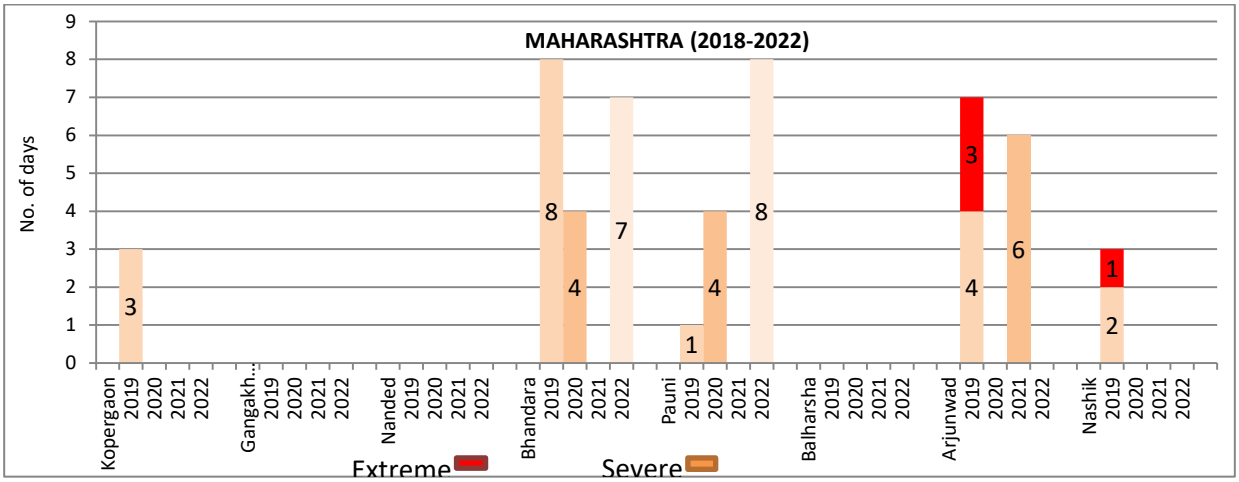
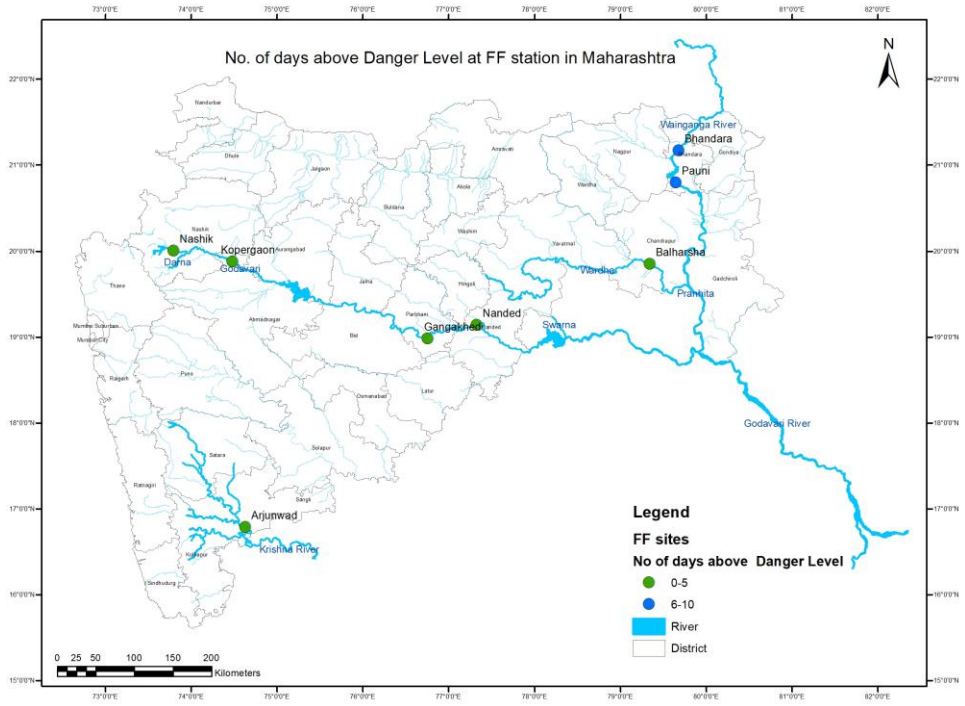


Fig 6.10

Floods situations are more frequent in Wainganga tributary of Godavari basin at sites Bhandara & Pauni in Bhandara district . In Krishna basin more flooding's occurred at Arjunwad site in Kolhapur district.

Flood situation in Maharashtra during 2022 is shown in the **Map 6.7** given below.



Map 6.7

6.2.12 ODISHA

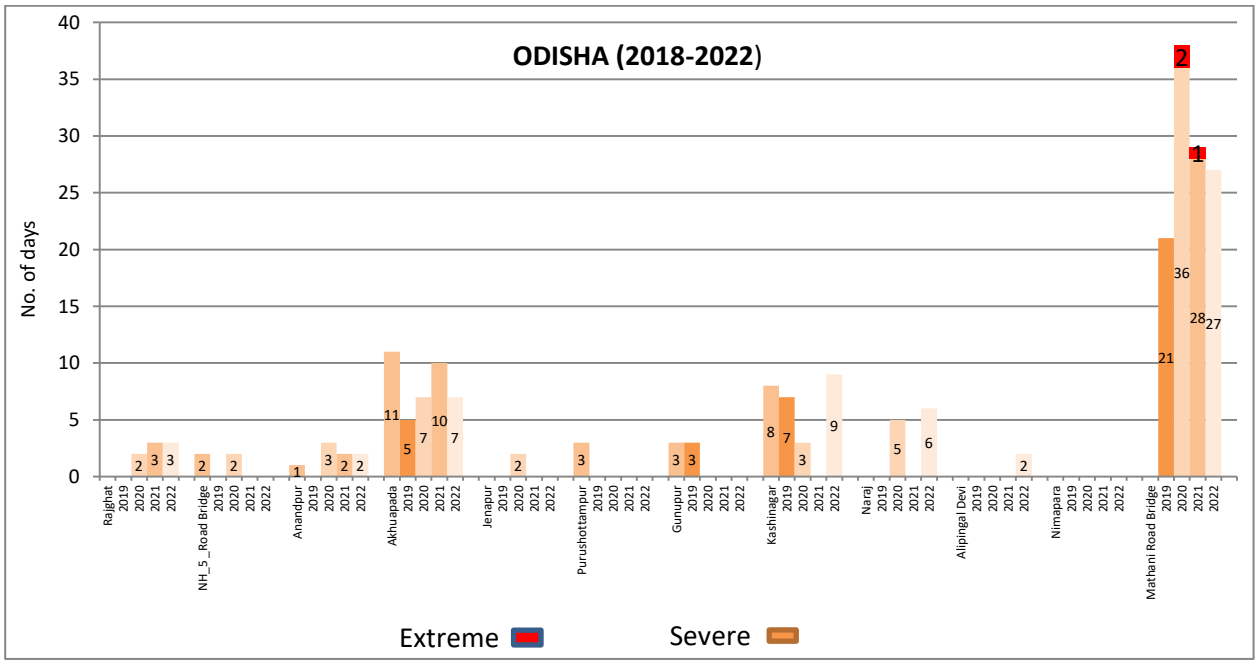
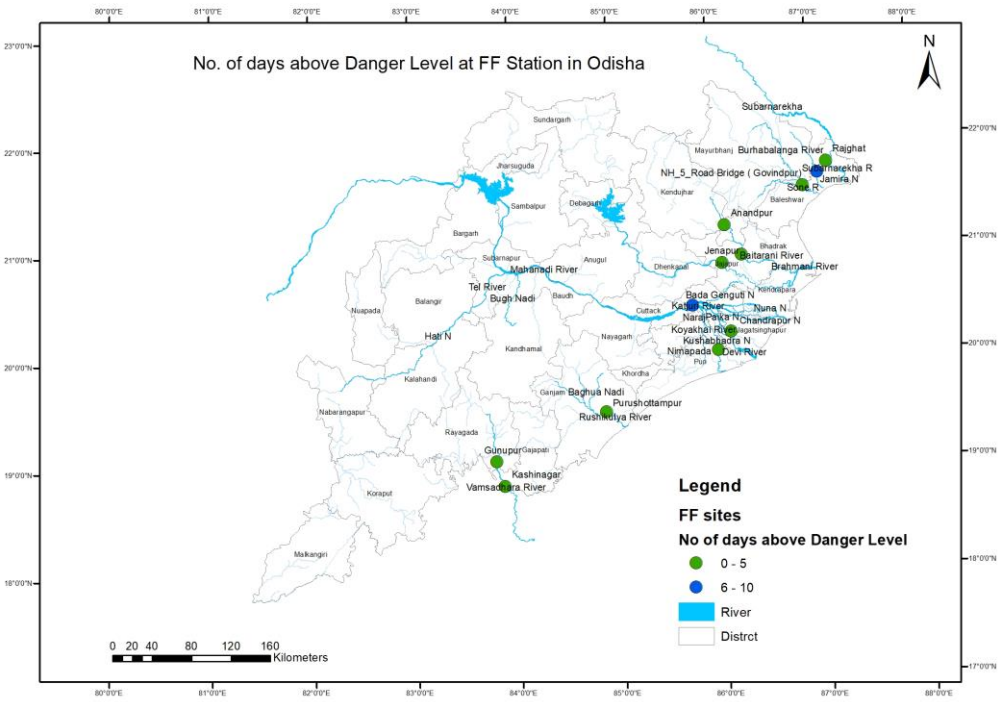


Fig 6.11

From the plots it is summarized that in Odisha most frequent flooding are reported from site Mathani Rd Bridge on Jalka river of Subarnarekha basin in Baleshwar district. Comparatively more cases also occur at sites Akhuapada (Bhadrak dist.) and Kashinagar (Gajapati dist.) in Baitarni and Vamsadhara rivers respectively.

Flood situation in Odisha during 2022 is shown in the **Map 6.8** given below.



Map 6.8

6.2.13 RAJASTHAN

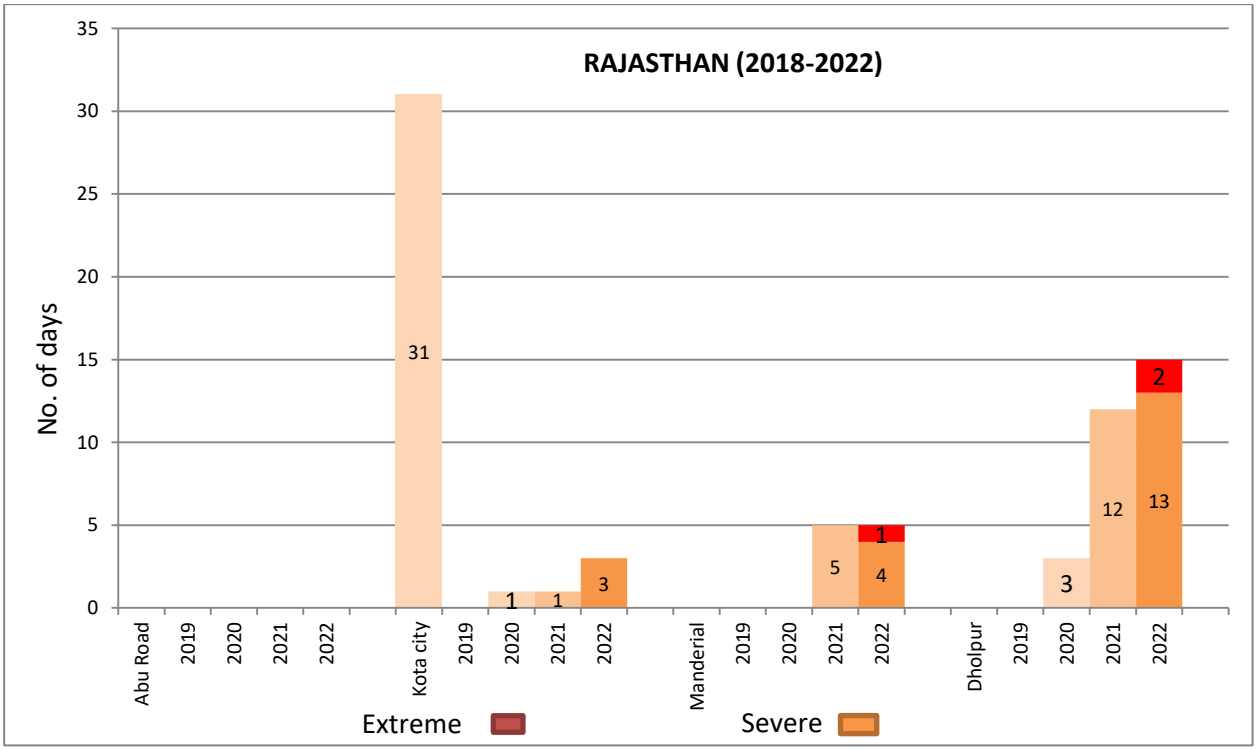
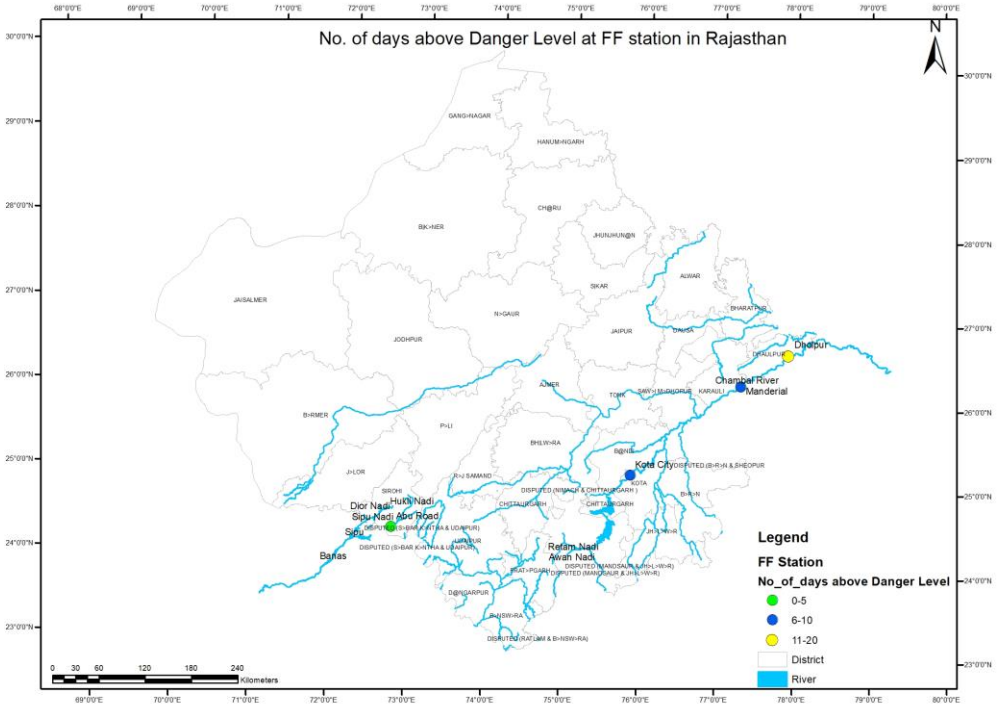


Fig 6.12

More frequent floods are found to occur on Chambal river at site Kota city (Kota district) and at Dholpur (Dholpur dist.). Manderial (Karauli dist.) site situated on Chambal River was initiated in 2021.

Flood situation in Rajasthan during 2022 is shown in the **Map 6.9** given below.



Map 6.9

6.2.14 SIKKIM

No significant flood occurred in Sikkim during last five years (2018-2022).

6.2.15 TAMILNADU

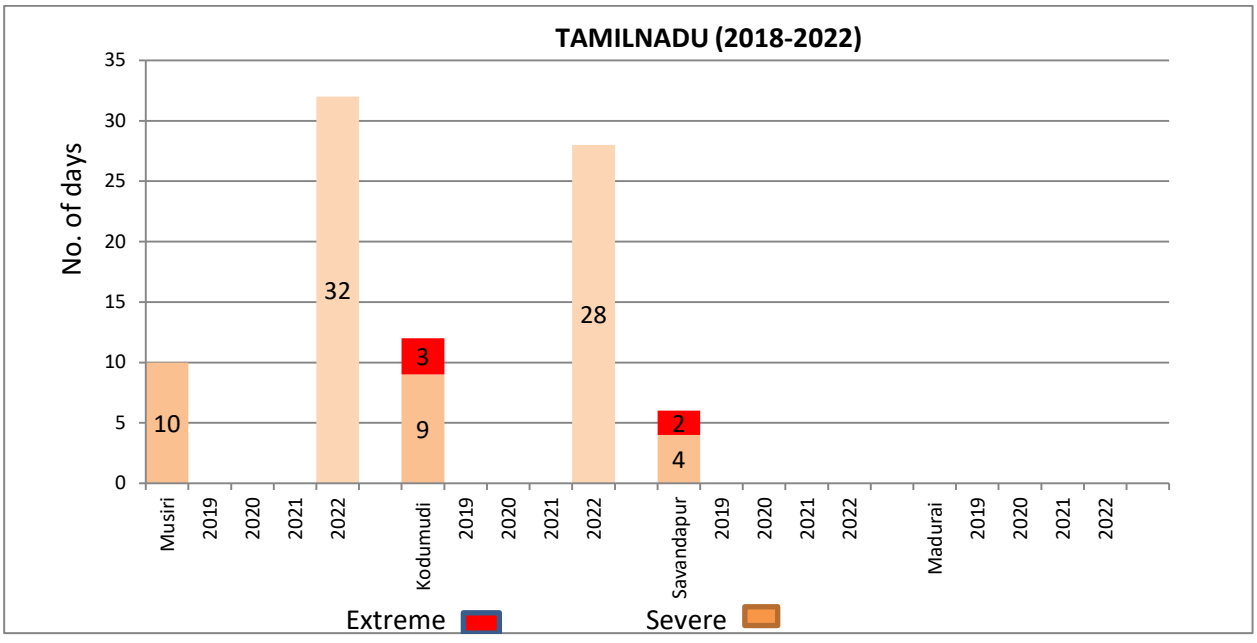
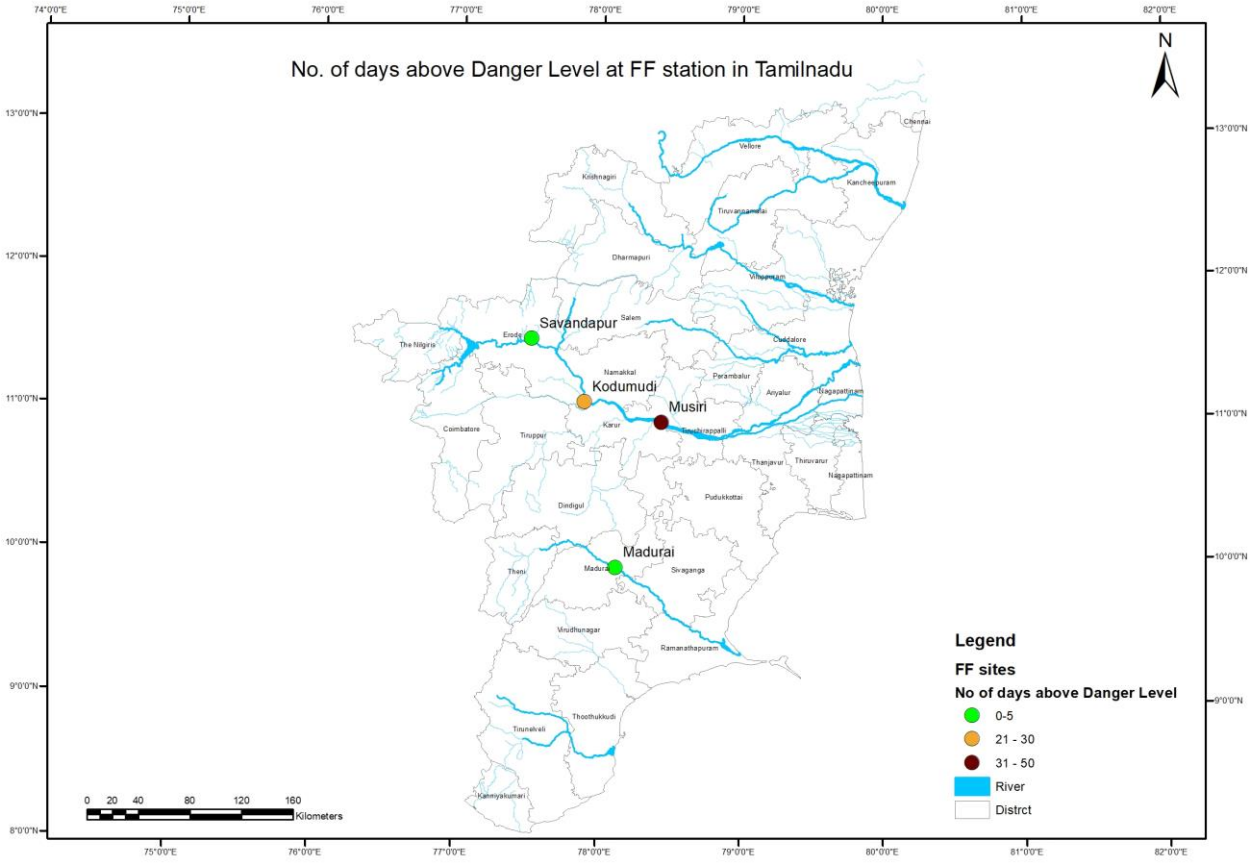


Fig 6.13

Figure reveals that more flood situations occur at two successive sites located on Cauvery river, Kodumudi (Erode dist.) and Musiri (Thiruchirapally dist.).

Flood situation in Tamilnadu during 2022 is shown in the **Map 6.10** given below.



Map 6.10

6.2.16 TELANGANA

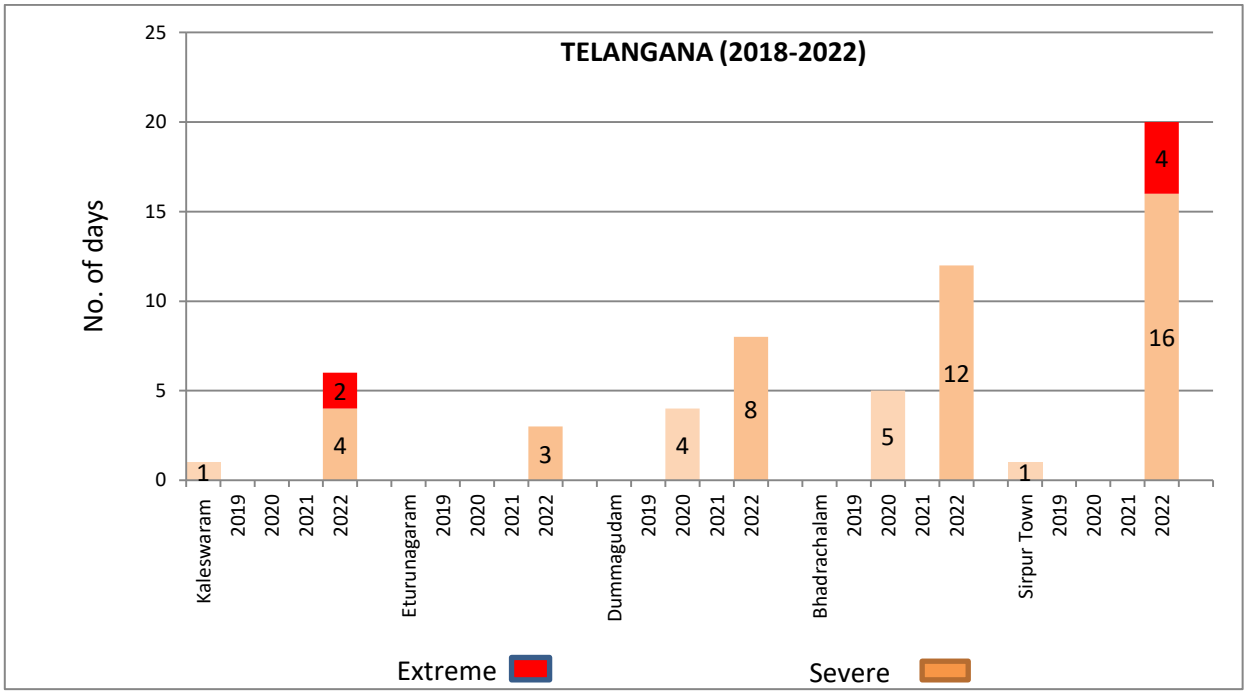
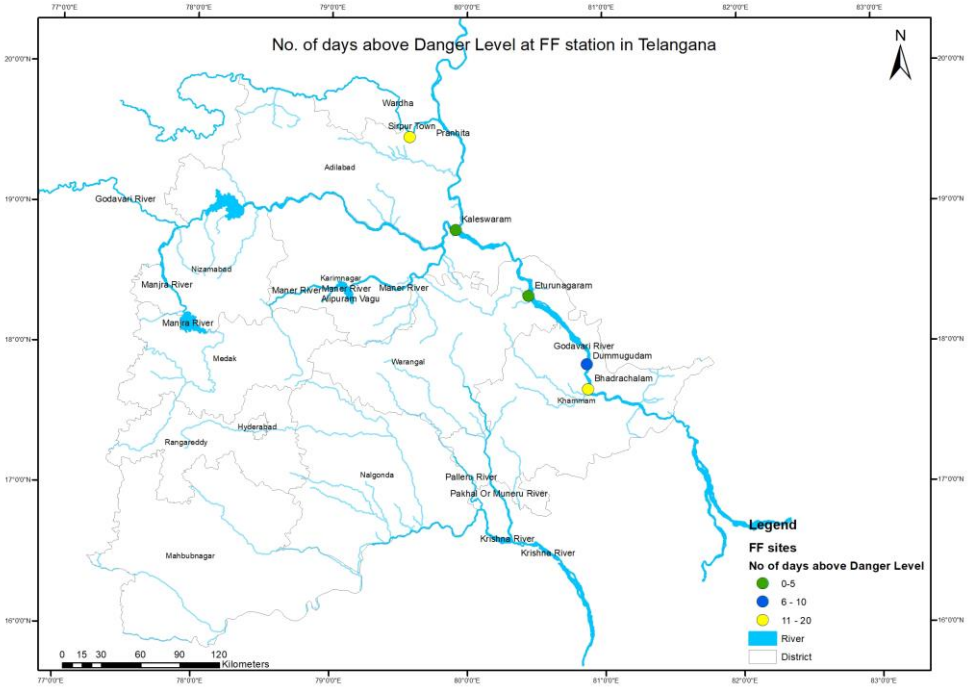


Fig 6.14

Figure shows that floods in Godavari are more frequent than in Krishna. Most flood situations occur on Wardha river (Godavari basin) at site Sirpur Town in Kumaram Bheem district. Flooding is also more in successive sites in Godavari main stem such as Dummagudem and Bhadrachalam both located in Bhadradri district.

Flood situation in Telangana during 2022 is shown in the **Map 6.11** given below.



Map 6.11

6.2.17 TRIPURA

No significantflood occurred in Tripura during last five years (2018-2022).

6.2.18 UTTAR PRADESH

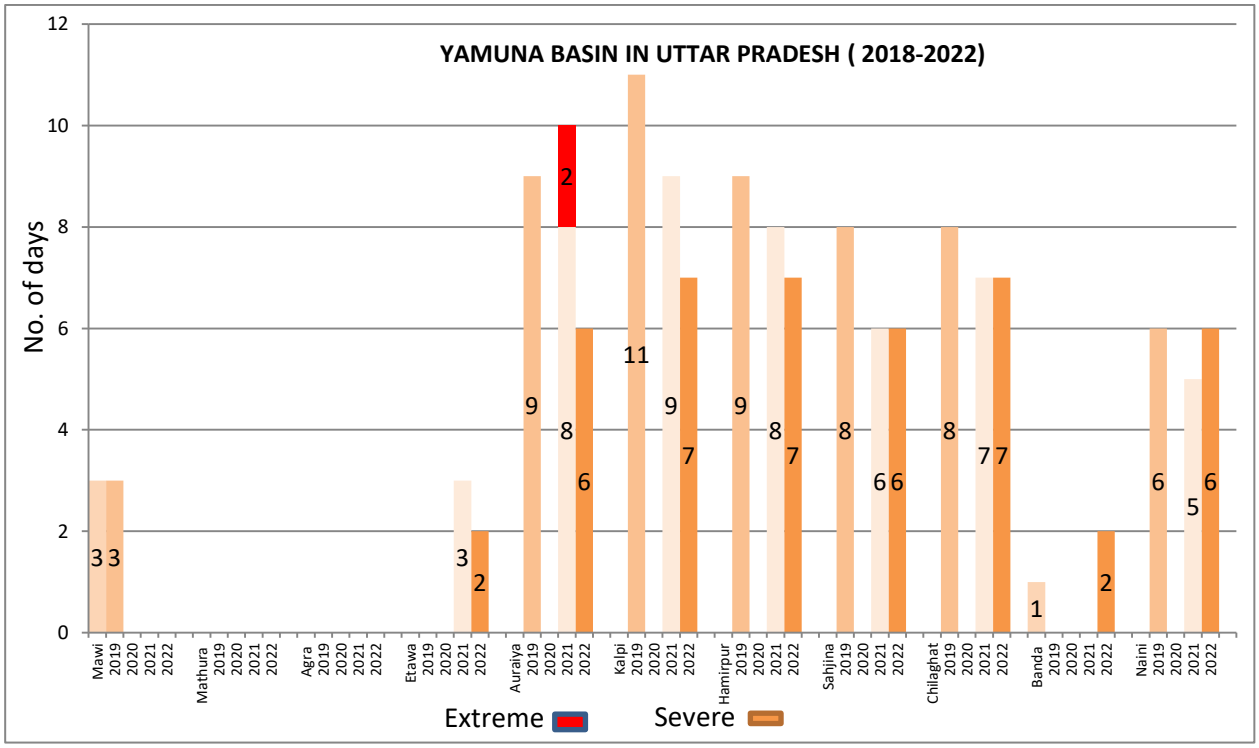


Fig 6.15 (i)

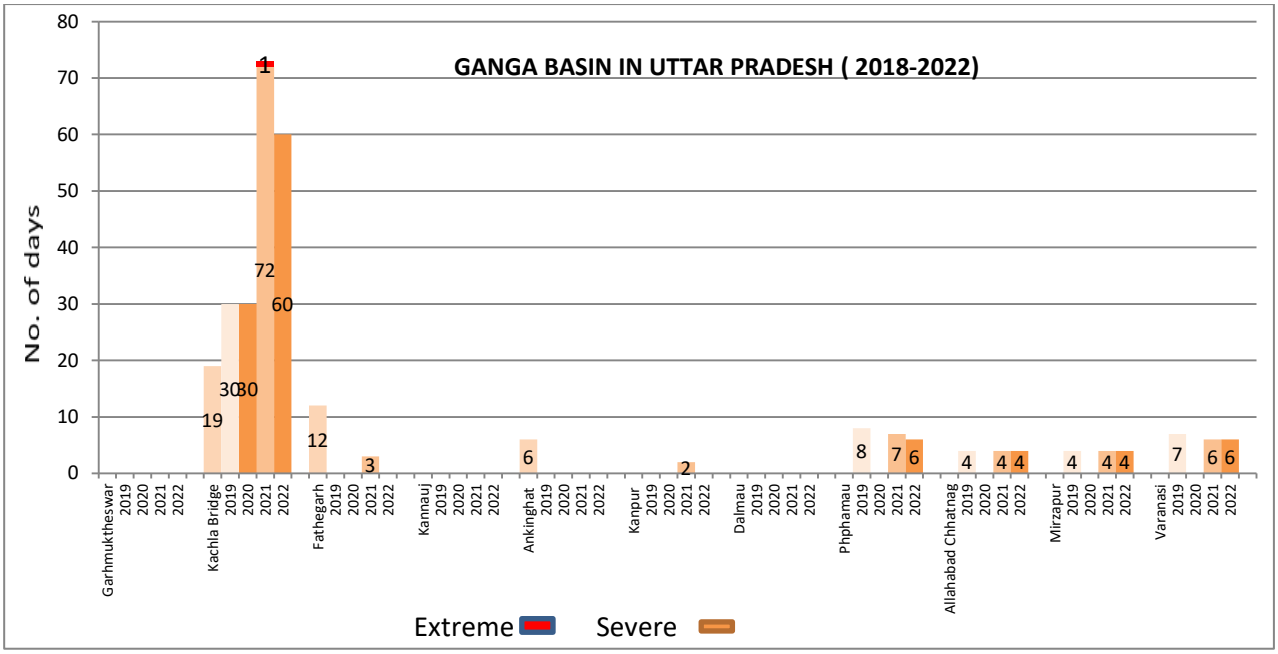


Fig 6.15 (ii)

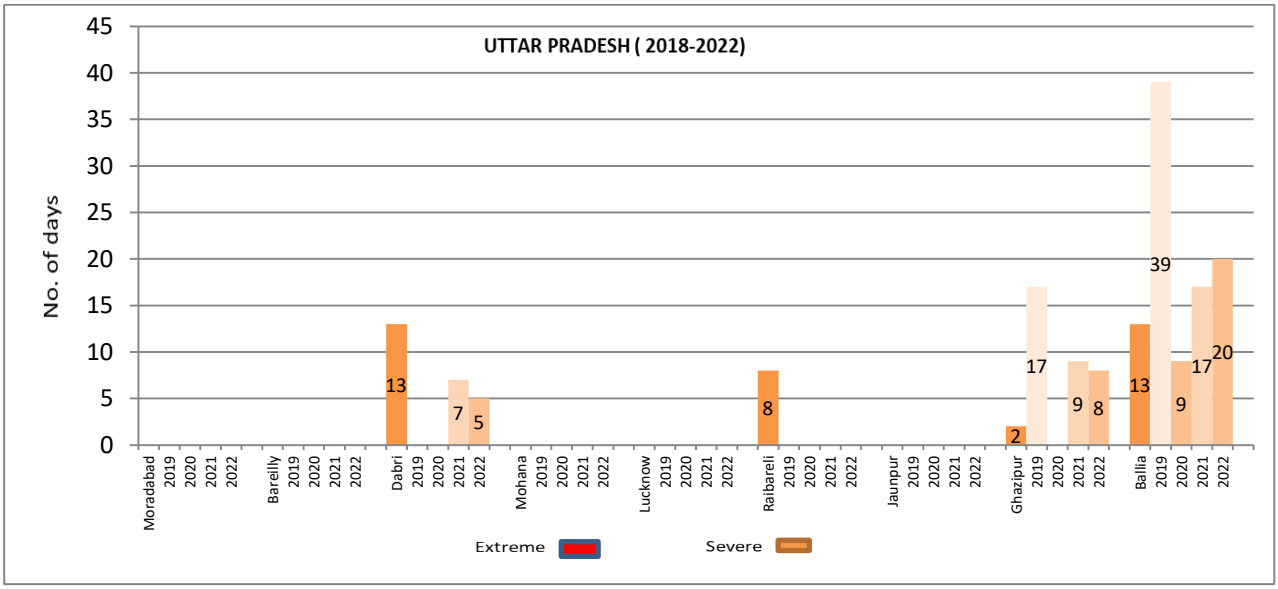


Fig 6.15 (iii)

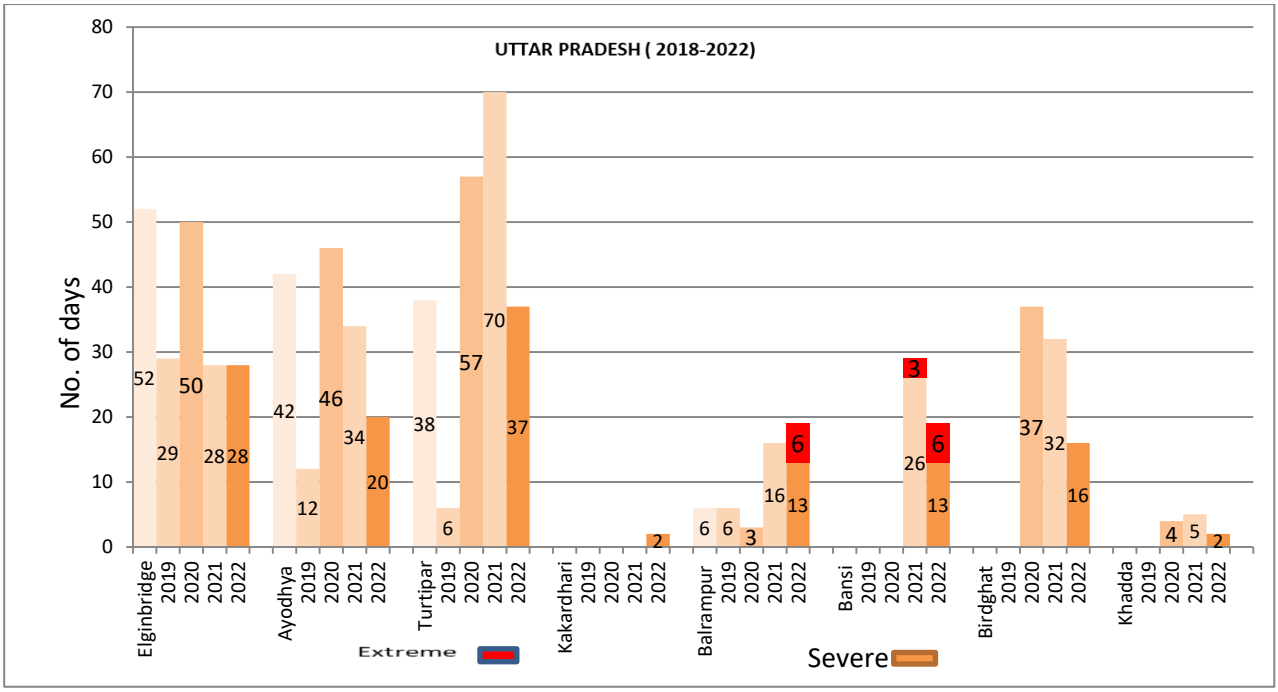
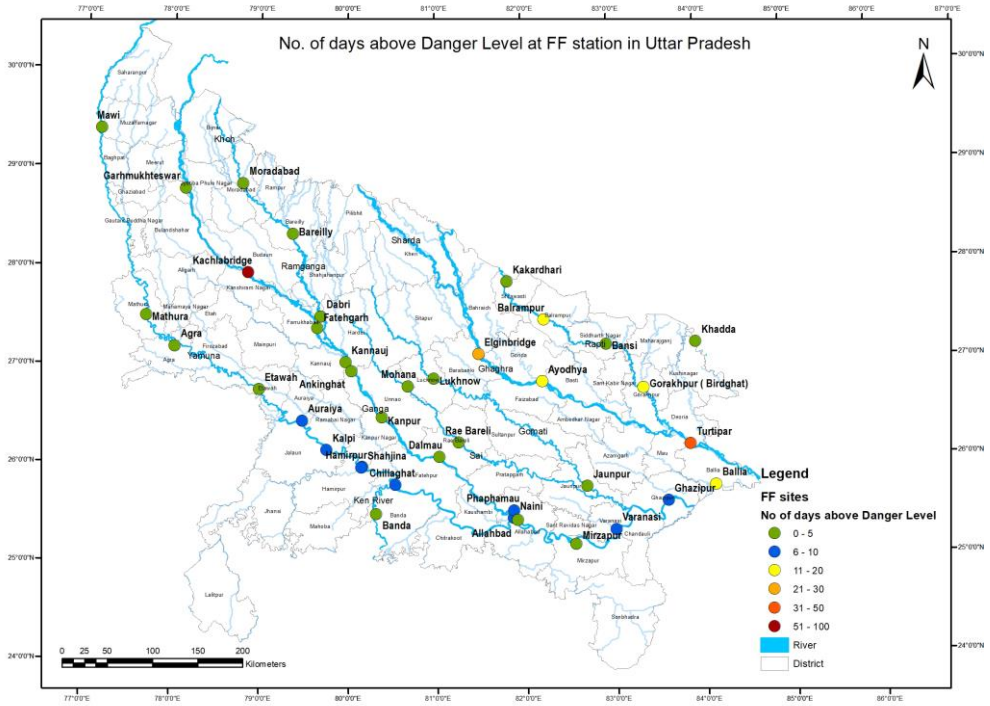


Fig 6.15 (iv)

Analysis show that more flooding happens in Ghagra river at sites Elginbridge (Barabanki dist.), Ayodhya (Ayodhya dist.) & Turtipar (Ballia dist.). In main Ganga stem, more flood situations are reported from sites Kachlabridge (Budaun dist.) & Ballia (Ballia dist.)

Flood situation in Uttar Pradesh during 2022 is shown in the **Map 6.12** given below.



Map 6.12

6.2.19 UTTARAKHAND

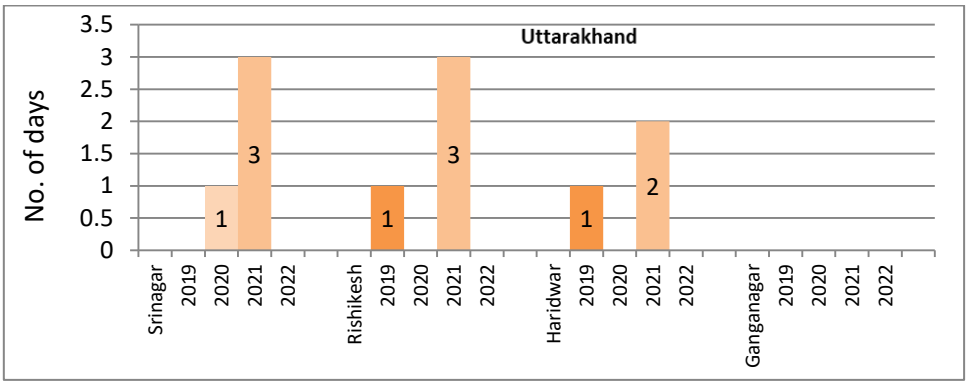


Fig 6.16

As per the analysis more no.of flood situations occur in upper Ganga and its tributary Alaknanda. Site Srinager on Alaknanda river (Pauri Garhwal dist.); Rishikesh (Dehradun dist.) and Haridwar (Haridwar dist.) on Upper Ganga are located sequentially in the basin and hence propagation of flood is clearly visible.

No station crossed Danger level in Uttarakhand during 2022.

6.2.20 WEST BENGAL

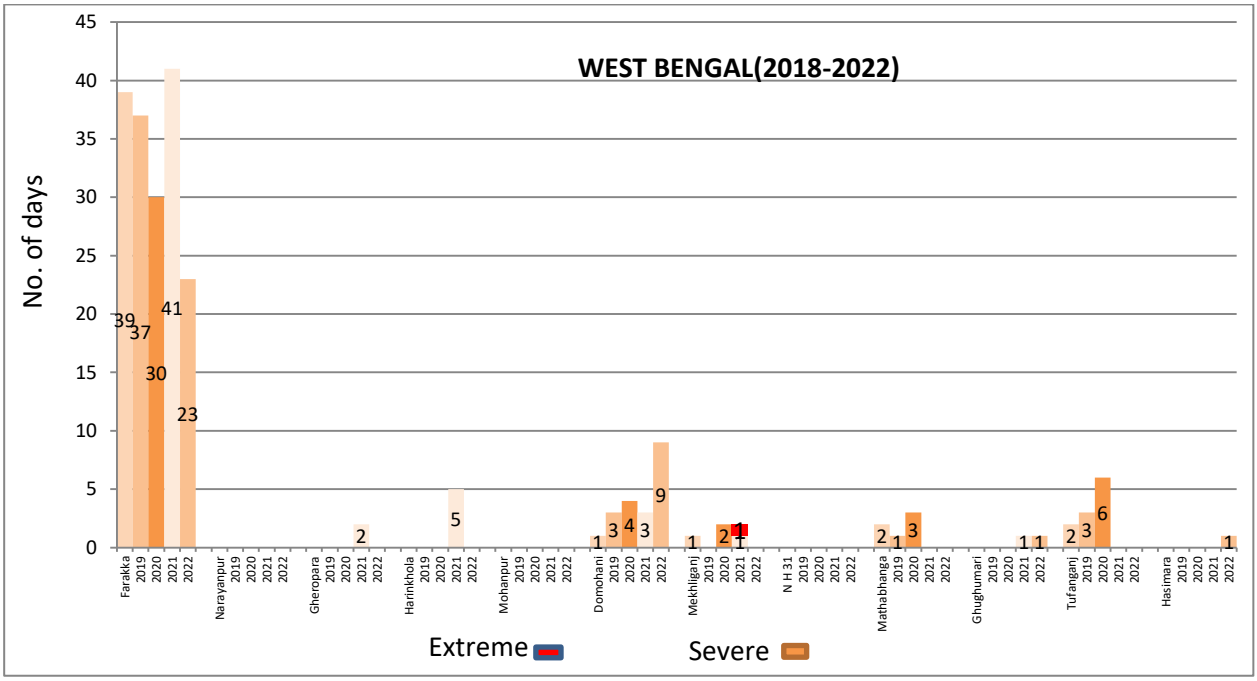
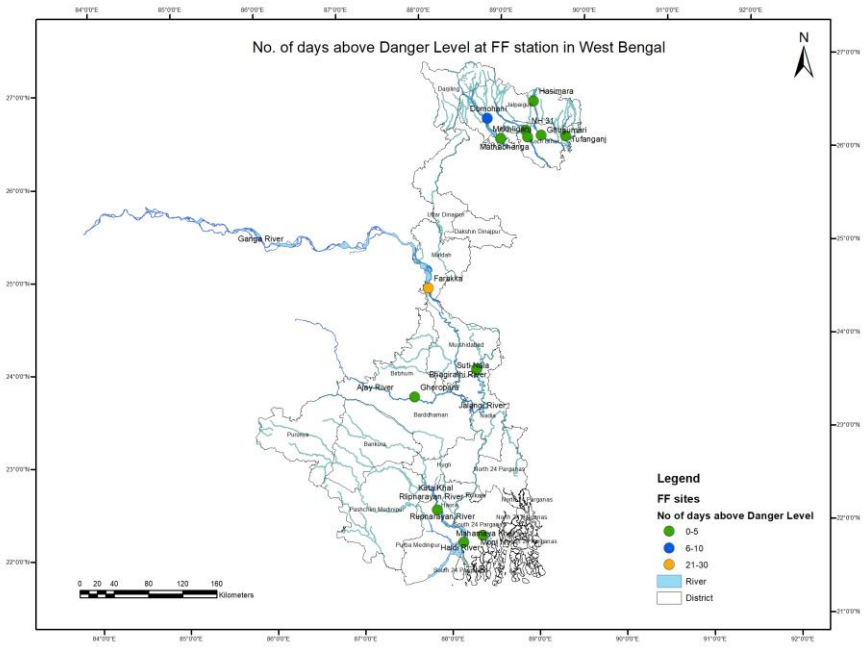


Fig 6.17

In West Bengal flooding is mainly confined to the tale end FF site Farkka (Murshidabad dist.)on river Ganga before the river enters Bangladesh.

Flood situation in West Bengal during 2022 is shown in the **Map 6.13** given below.



Map 6.13

6.2.21 NCT Delhi

No flood occurred in NCT Delhi during last five years (2018-2022).

On viewing all the plots of various states in India it is summarized that

- Flood situation for more no.of days occured in Bihar, Uttar Pradesh and Assam.
- CWC flood level forecasting network is less representative of the flood situation in Peninsular India as the network is not wide compared to northern and eastern India. For that CWC is in a process of widening its network in the country.
- Analysis throws light to more frequent flooding rivers in various states but needs more critical analysis to conclude and comment on flooding pattern in the country.

CHAPTER - 7

RESPONSE FROM USER AGENCIES

7.1 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.

7.2 APPRECIATION LETTERS RECEIVED DURING FLOOD SEASON 2022

Abstract of some of the messages received by our field unit during the flood season 2022 are given below:

7.2.1 Office of the District Collector, District-Bastar, Jagdalpur. (lr.No. 01/Revenue/2023 dt. 01/02/2023)

We would like to express our appreciation for Central Water Commission, Indravati Sub-Division Jagdalpur through this letter. You have had communication and coordination with the District Flood Control Room by giving updates and forecasts on flood water level during the previous monsoon session 2022-23 of Indravati River and its tributaries.

We wish that the entire team will continue to do good work and support by providing timely information and assistance on water related probable hazards in the district.

7.2.2 Office of the Executive Engineer, T.D.P.P.Water Resources Division, Jagdalpur, Dist. Bastar (M. no: 130/T.S./2022-23/2-2008 dt 13/01/2023)

The Monsoon forecast for the year 2022 has been given from time to time by Central Water Commission, Hyderabad has proved to be very helpful for the safety of life and goods near Indravati river and its tributaries flowing in Jagdalpur. With the help of flood forecast provided by you it becomes very helpful in establishing arrangements in flood prone areas. In future also, the entire public community expects such services from you.

7.2.3 Office of the Sub collector, Bhadrachalam, Revenue Department, Govt. of Telangana (Lr. no: Rc.No.E/532/2022 dt 09/02/2023)

Central Water Commission is providing us Flood Forecasting services to Bhadrachalam and Dummugudem town on river Godavari. Due to which this office is able to take timely action in evacuating the vulnerable areas in town and able to save the lives of human and cattle. In the year 2022 CWC supported us by providing the forecast and discharge of upstream site Perur through Whatsapp group. By which we were benefited in taking action for rescue and relief and smooth handling of situation avoiding disaster and in turn saving lives of people and damage to property.

7.2.4 Office of the Executive Engineer, Dam Maintenance Circle, NSRS Srisailam Project, Govt. of Andhra Pradesh (Lr. No. EE/DMD/NSRSSP/AE/2022/877 dt. 28/12/2022)

Central Water Commission is issuing Flood forecast for all the reservoirs on the river Krishna with a time interval of 12 & 24 hours. Based on the flood forecast, the reservoir Crest gates & water level in the reservoir are operated. The forecasts are playing a vital role in effective Gate operation, Power generation etc.

It is suggested to have a rainfall runoff relationship may be developed and applied for the catchment and information may be passed to Dam Authorities for the effective operation.

7.2.5 Office of the Superintending Engineer, Irrigation Circle, Kurnool, Andhra Pradesh (Lr No. SE/IC/KNL/CWC Flood Forecast-2022-23 dated 04.01.2023)

The utility of forecast bulletins of Mantralayam CWC, is much benefitted to Water Resources Department in advance preparation of water control and water management and in depletion of water from reservoirs early so that , the inflow water can be accommodated in the reservoir/barrage. The utility of forecast bulletins of Mantralayam helped a lot in gate operation of Sunkesula barrage and in storing water in required places and in pushing water to Penna basin through KC Canal.

7.2.6 Office of the Executive Engineer, Irrigation and CAD Division 1, Irrigation Circle, Pochampad, Telangana (Lr No. EE/Div-1/IC Pochampad/DB/TO/144 dated 02/02/2023)

The Flood Forecasts provided by Central Water Commission were very much useful throughout the monsoon season to manage High Floods during the year 2022. CWC's work is highly appreciated for sending the timely forecasts to SRSP for planning the Dam operations.

With the help of CWC's Flood Forecast, this office is alerting the downstream villages and peoples's precious lives and wealth are protected.

7.2.7 Office of the Executive Engineer, PIPHW Division 1, Polavaram, Andhra Pradesh (Lr No. EE/PIPHW/Div-1/Plvm/ 32 dated 01/02/2023)

The Executive Engineer of PIPHW Division NO. 1 used to get the Flood Discharge data and flood related information from CWC website and KG basin through Whatsap well in advance. Based on these information we used to alert all the line departments that are involved in flood duties. By taking all the initiatives and precautions based on the CWC information, human loss was avoided and minimized the property and cattle losses.

The information furnished by CWC is very much useful for taking up all the flood related precautionary measures.

ANNEXURES - I to XIII

Details of New Flood Forecasting Stations included in last Five Years (2017-2022)

Year	New Station	Total No. of Station	Name of Station	State	District
1	2	3	4	5	6
2017	27	199 + 27=226	Kurnool Town	Andhra Pradesh	Kurnool
			Srikakulam	Andhra Pradesh	Srikakulam
			Namsai	Arunachal Pradesh	Lohit
			Choldhowaghat	Assam	Lakhimpur
			N H Crossing Ranganadi	Assam	Lakhimpur
			Dholla Bazaar	Assam	Tinsukia
			Kokrajhar	Assam	Kokrajhar
			Dumariaghat	Bihar	Gopalganj
			Ahirwalia	Bihar	Muzzafarpur
			Sangam	Jammu & Kashmir	Anantnag
			Safapora	Jammu & Kashmir	Bandipora
			Fathegarh	Uttar Pradesh	Farukkabad
			Dabri	Uttar Pradesh	Shahjahanpur
			Garhmuktheswar	Uttar Pradesh	Ghaziabad
			Kachla Bridge	Uttar Pradesh	Badaun
			Panam Dam	Gujarat	Panchmahal
			Upper Tunga	Karnataka	Shimoga
			Bhadra Dam	Karnataka	Chikmagaluru
			Rengali Dam	Odisha	Angul
			Mahi Bajajsagar Dam	Rajasthan	Banswara
			Som Kamla Amba Dam	Rajasthan	Udaipur
			Upper Anicut	Tamilnadu	Tiruchirapalli
			Gomukhi Dam	Tamilnadu	Villupuram
			Wellington Dam	Tamilnadu	Cuddalore
			Sathanur Dam	Tamilnadu	Thiruvannamalai
			Chembarampakkam Lake	Tamilnadu	Kanchipuram
			Banbasa	Uttarakhand	Champawat
2018	23	226+ 23 =249	Atreyapuram	Andhra Pradesh	East Godavari
			Karnal Bridge	Haryana	Karnal
			Paonta Sahib	Himachal Pradesh	Sirmaur
			Musiri(Srirangam)	Tamilnadu	Tiruchirapalli
			Kodumudi (Erode)	Tamilnadu	Erode
			Savandapur(Bhavani)	Tamilnadu	Erode
			Sirpur Town	Telangana	Adilabad
			Ganganagar	Uttarakhand	Rudraprayag
			Narayanapuram Anicut	Andhra Pradesh	Srikakulam
			Madduvalasa Reservoir	Andhra Pradesh	Srikakulam
			Tilaiya Dam	Jharkhand	Koderma
			Sikatia Barrage	Jharkhand	Dumka
			Konar Dam	Jharkhand	Hazaribagh
			Kalisindh Dam	Rajasthan	Jhalawar
			Parwan Dam	Rajasthan	Baran
			Gambhiri Dam	Rajasthan	Chittorgarh
			Panchana Dam	Rajasthan	Karauli
			Gudha Dam	Rajasthan	Bundi
			Parwati Dam	Rajasthan	Dholpur
			Kota Barrage	Rajasthan	Kota
			Rangit-III HEP Dam	Sikkim	South Sikkim
			Dharmanagri Barrage	Uttar Pradesh	Bijnor

			Kalagarh Dam	Uttarakhand	Pauri Garhwal
			Chinturu	Andhra Pradesh	East Godavari
			Avanigadda	Andhra Pradesh	Krishna
			Yingkiang	Arunachal Pradesh	Upper Siang
			Mathanguri	Assam	Baska
			Dheng Bridge	Bihar	Sitamarhi
			Sonebarsha	Bihar	Sitamarhi
			Jainagar	Bihar	Madhubani
			Runisaidpur	Bihar	Sitamarhi
			Araria	Bihar	Araria
			Taibpur	Bihar	Kishanganj
			Neeleswaram	Kerala	Ernakulam
			Kumbidi	Kerala	Palakkad
			Malakkara	Kerala	Pathanamthitta
			Nasik	Maharashtra	Nasik
			Mathani Road Bridge	Odisha	Balasore
			Abu Road	Rajasthan	Sirohi
			Kota City	Rajasthan	Kota
			Malli Bazaar	Sikkim	South Sikkim
			Joretahang(Rothak)	Sikkim	South Sikkim
			Singtam	Sikkim	East Sikkim
			Madurai	Tamilnadu	Madurai
			Kakardhari	Uttar Pradesh	Bahraich
			Hasimara	West Bengal	Coochbehar
			Indrapuri Barrage	Bihar	Garhwa
			Gandak Barrage	Bihar	West Champaran
			Kosi Barrage	Bihar	Bhimnagar
			Ravishankar Dam	Chattisgarh	Dhamtari
			Bango Dam	Chattisgarh	Korba
			Sardar Sarovar Dam	Gujarat	Ahmedabad
			Sundar Dam	Jharkhand	Hazaribagh
			Amanat Barage	Jharkhand	Dumka
			Annaraj Dam	Jharkhand	Hazaribagh
			Bhairwa Dam	Jharkhand	Hazaribagh
			Batane Dam	Jharkhand	Giridih
			Galudih Barrage	Jharkhand	Saraikela Kharaswan
			Getlasud Dam	Jharkhand	Ranchi
			Karanja Dam	Karnataka	Bidar
2019	76	249+76=325	Malaprabha Dam	Karnataka	Belgaum
			Hippargi Dam	Karnataka	Bagalkot
			Hidkal Dam	Karnataka	Belagavi
			Singatalur Barrage	Karnataka	Gadag
			Idduki Dam	Kerala	Idduki
			Idamalayar	Kerala	Ernakulam
			Rajghat Dam	Madhya Pradesh	Lalitpur
			Tawa Dam	Madhya Pradesh	Hoshangabad
			Bargi Dam	Madhya Pradesh	Jabalpur
			Barna Dam	Madhya Pradesh	Raisen
			Indira Sagar Dam	Madhya Pradesh	Khandwa
			Omkareshwar Dam	Madhya Pradesh	Khandwa
			Totladoh Project	Maharashtra	Nagpur
			Upper Wainganga Project	Madhya Pradesh	Balaghat
			Upper Wardha Project	Maharashtra	Amaravati
			Mula Dam	Maharashtra	Ahmednagar
			Issapur/Upper Penganga P	Maharashtra	Hingoli

			N M D Weir	Maharashtra	Nasik
			Yeldari Dam	Maharashtra	Parbhani
			Koyna Dam	Maharashtra	Satara
			Warana Dam	Maharashtra	Kolhapur
			Ujjani Dam	Maharashtra	Solapur
			Veer Dam	Maharashtra	Satara
			Manjlegaon	Maharashtra	Beed
			Salandi Dam	Odisha	Bhadrak
			Upper Indravathi Project	Odisha	Kalahandi
			Kolab Project	Odisha	Koraput
			Machhkund Project	Odisha	Koraput
			Balimela Project	Odisha	Malkangiri
			Rana Pratap Sagar	Rajasthan	Chittorgarh
			Teesta-III HEP Dam Chung	Sikkim	North Sikkim
			Teesta V HEP Dam Singtar	Sikkim	North Sikkim
			Rongpo Dam	Sikkim	East Sikkim
			Rongli Dam	Sikkim	East Sikkim
			Kodaganar Dam	Tamilnadu	Dindugul
			Musi Project	Telangana	Nalgonda
			Matatilia Dam	Uttar Pradesh	Lalitpur
			Katerniaghat Dam	Uttar Pradesh	Bahraich
			Hinglow Dam	West Bengal	Bankura
2020	3	325+3=328	Dholpur	Rajasthan	Dholpur
			Indirasagar(Polavaram)	Andhra Pradesh	West Godavari
			Laxmi Barrage	Telangana	Bhupalpally
2021	3	328+3=331	Manderial	Rajasthan	Karauli
			Bawanthadi Reservoir	Madhya Pradesh	Balaghat
			Pench Reservoir/Chaurai/M	Madhya Pradesh	Chindwara
2022	2	331+2=333	Madikhera(Atal Sagar)	Madhya Pradesh	Shivpuri
			PVNR Kanthapally Project	Telangana	Warangal

Salient Features of Flood Forecasting Stations maintained by Central Water Commission

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											(m)	Year			
1	Sangam	Jhelum/ Indus	Anantnag/Jammu and Kashmir	33.84	75.08		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1590.3	1592	1595	2014			
2	Rammunshibagh (Srinagar)	Jhelum/ Indus	Srinagar/Jammu and Kashmir	34.06	74.86	Sangam Khanabal Nunwan	CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1585.53	1586.45	1588.99	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	1580.8	1582.1	2014			
4	Srinagar	Alaknanda/Ganga	Srinagar/Pauri Garhwal/Uttrakhand	30.22	78.78	Rudrapryag(02) Joshimath(07) Nandkeshri(07) Karanparyag(04) Ganganagar(03)	HGD/HOC/UGBO	Uttarakhand	535.00	536.00	537.90	2013	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
5	Ganganagar	Mandakini/Ganga	Ganganagar/Rudraparyag/Uttrakha nd	30.4	79.04	Ukhimath Gaurikund Gaundhar	HGD/HOC/UGBO	Uttarakhand	803.00	804.00	801.92	2015	Phone/Telemetry	Conventional	Rainfall based (Mathmatical Modelling)
6	Rishikesh	Ganga/Ganga	Rishikesh/Dehradun/Uttrakhand	30.11	78.31	Deoparyag(05) Marora(02)	HGD/HOC/UGBO	Uttarakhand	339.50	340.50	341.72	1995	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
7	Hardwar	Ganga/Ganga	Haridwar/Uttrakhand	29.98	78.19	Deoparyag(05) Marora(03) Rishikesh(01)	HGD/HOC/UGBO	Uttarakhand	293.00	294.00	296.30	2010	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
8	Dharmanagari Barrage	Ganga/Ganga	Bijnor/Uttar Pardesh	29.37	78.03	Haridwar (06)	HGD/HOC/UGBO	Uttar Pradesh	2000	3000	15855	2010	Phone/Telemetry	Conventional	Inflow FF Station
9	Garhmuktheswar	Ganga/Ganga	Gaziabad/UP	28.77	78.14	Daramnagri (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	198.33	199.33	199.9	2010	By Phone	-	
10	Narora Barrage	Ganga/Ganga	Narora/ Bulanshahar/ Uttar Pradesh	28.19	78.40	Haridwar (40 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	-	-	180.61	2010	Wireless/ Mobile	Correlation Graph	
11	Kachlabridge	Ganga/Ganga	Budaun/UP	27.93	78.86	Garhmukteshwar (16 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	161.00	162.00	162.79	2010	By Phone	-	
12	Fatehgarh	Ganga/Ganga	Farrukhabad/UP	27.39	79.62	Kachlabridge (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.60	137.60	138.14	2010	Wireless/ Mobile	Correlation Graph	
13	Kalagarh Dam	Ramganga/Ganga	Pauri/Garhwal/Uttarakhand	29.49	78.76	Bhikiasen Marchula	MGD2/HOCD/UGBO	IMD Lucknow	-	-	263.67	2010	Wireless/ Mobile	Correlation Graph	
14	Moradabad	Ramganga/Ganga	Moradabad/Moradabad/Uttar Pradesh	28.83	78.80	Kalagarh (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	189.60	190.60	192.88	2010	Wireless/ Mobile	Correlation Graph	
15	Bareilly	Ramganga/Ganga	Bareilly/Bareilly/ Uttar pradesh	28.30	79.37	Moradabad (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	162.07	163.07	162.88	1978	Wireless/ Mobile	Correlation Graph	
16	Dabri	Ramganga/Ganga	Jalalabar/Shahjahanpur/UP	27.49	79.69	Bareilly (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.30	137.30	139.70	1983	Wireless/ Mobile	Correlation Graph	
17	Kannauj	Ganga/Ganga	Kannauj/Kannauj/ Uttar Pradesh	27.01	79.98	Narora (D/s) (48)	MGD2/HOCD/UGBO	IMD Lucknow	124.97	125.97	126.78	2010	Wireless	Conventional	
18	Ankinghat	Ganga/Ganga	Ankinghat/Kanpur/ Uttar Pradesh	26.93	80.03	Narora (D/s) (48) Bareilly (48) Fathegarh (12) Dabri (12)	MGD2/HOCD/UGBO	IMD Lucknow	123.00	124.00	124.49	2010	Wireless/ Telemetry	Conventional	
19	Kanpur	Ganga/Ganga	Kanpur/Kanpur/ Uttar Pradesh	26.47	80.38	Fathegarh (24) Dabri (24) Ankinghat (12)	MGD2/HOCD/UGBO	IMD Lucknow	112.00	113.00	114.08	2010	Wireless/ Telemetry	Conventional	
20	Dalmau	Ganga/Ganga	Rae-barerilly/ Rae-barerilly/ Uttar Pradesh	26.06	81.03	Ankninghat (28) Kanpur (16)	MGD2/HOCD/UGBO	IMD Lucknow	98.36	99.36	99.84	1973	Wireless/ Telemetry	Conventional	
21	Phaphamau	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.50	81.86	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UGBO	East Uttar Prasdesh	83.73	84.73	87.98	1978	Wireless/ Telemetry	Conventional	

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											(m)	Year			
22	Paonta Sahib	Yamuna/Ganga	Poanta/Sirmaur/ Himachal Pradesh	30.43	77.59	Naugaon (03-08) Jateon Barrage(giri) (03-08) Haripur(02-07) Dakpathar Barrage (1-1.5)	UYD/HOC/YBO	Himachal Pradesh	383.5	384.5	384.6	1995		3 days advisory Forecast (CWC BETA Model)	
23	Tajewala Barrage (Hathnikund Barrage)	Yamuna/Ganga	Yamunanagar/ Yamunanagar/ Haryana	30.31	77.58	Paonta (06)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	1982.00				Wireless		Inflow Forecast Not in Operation
24	Karnal	Yamuna/Ganga	Shergarh Tapu/ Karnal/ Haryana	30.06	77.14	Kalanaur (07-28) hrs	UYD/HOC/YBO	Haryana	248.8	249.5	250.07	2013		Conventional	
25	Mawi	Yamuna/Ganga	Panipat/ Muzzafarpur/ Uttar Pradesh	29.38	77.15	Kalanur (06-36)	UYD/HOCN/ YBO	West Uttar Pradesh	231.00	231.50	232.75	2013	Wireless/ Telemetry	Conventional	
26	Dhansa Regulator	Sahibi/Yamuna/ Ganga	Delhi/Delhi/ NCT Delhi	28.53	76.87	Dadri (03-05) Masani (31-40)	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	Mawi (09-41)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	204.50	205.33	207.49	1978	Wireless/ Telemetry	Conventional	
28	Mathura	Yamuna/Ganga	Mathura/Mathura/ Uttar Pradesh	27.51	77.69	Mohana (12-65)	UYD/HOCN/ YBO	West Uttar Pradesh	165.20	166.00	169.73	1978	Wireless/ Telemetry	Conventional	
29	Agra	Yamuna/Ganga	Agra/Agra/ Uttar Pradesh	27.19	78.03	Mathura (16-28)	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	Agra (18-51)	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	Tal (8)	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	Gandhisagar Dam (1)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
33	Kota Barrage	Chambal/Ganga	Kota/Rajasthan	25.17	75.82	Rana Pratap Sagar Dam(1-1.25)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
34	Kota City	Chambal/Ganga	Kota/Rajasthan	25.19	75.84	Immediate D/S of Kota Barrage	CD Jaipur/HOC Noida/YBO ND		239	242	248.68	2019		Mathematical	
35	Bisalpur Dam	Banas/Ganga	Deoli/Tonk/Rajasthan	25.92	75.45	Bigod(09-10)	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	Sarangpur(10-12)	CD Jaipur/HOC Noida/YBO ND		FRL-316						
37	Parwan Dam	Parwan/Ganga	Baran/Jhalawar//Rajasthan	24.62	76.51		CD Jaipur/HOC Noida/YBO ND		308.8						
38	Gambhiri Dam	Gambhiri/Ganga	Chittorgarh/Rajasthan	24.7	74.73		CD Jaipur/HOC Noida/YBO ND							Rainfall Runoff Model	
39	Panchana Dam	Chambal/Ganga	Mandrail/Karauli/Rajasthan	26.55	77.00		CD Jaipur/HOC Noida/YBO ND		258.62					Rainfall Runoff Model	
40	Gudha Dam	Mej/Ganga	Bundi/Rajasthan	25.48	75.46		CD Jaipur/HOC Noida/YBO ND		FRL-305.86					Rainfall Runoff Model	
41	Parwati Dam	Parwati/Ganga	Dholpur / Rajasthan	26.65	77.9		CD Jaipur/HOC Noida/YBO ND		FRL-308.15						
42	Auraiya	Yamuna/Ganga	Auraiya/Auraiya/ Uttar Pradesh	26.42	79.48	Etawah (21-24) Dhaulpur (15-36)	LYD/HOCN/ YBO	West Uttar Pradesh	112.00	113.00	118.51	2021	Wireless/ Telemetry	Conventional	
43	Kalpi	Yamuna/Ganga	Kalpi/Jalaun/ Uttar Pradesh	26.13	79.76	Etawah (21-27) 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	Auraiya (15) Mohana (18-24)	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		FRL-371					Mathematical Model	
46	Matatila Dam	Betwa/Yamuna/ Ganga	Lalitpur/UttarPradesh	25.10	78.36		LYD/HOCN/ YBO	East Uttar Prasdesh	308.46	310.04				Mathematical Model	
47	Mohana	Betwa/Yamuna/ Ganga	Jhansi/Jhansi/ Uttar Pradesh	25.65	78.99	Garrouli (15-21) Nautghat (12-21)	LYD/HOCN/ YBO	East Uttar Prasdesh	121.66	122.66	133.35	1983	Wireless/ Telemetry	Conventional	

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											(m)	Year			
48	Sahjiana	Betwa/Yamuna/ Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.95	80.15	Mohana (18-26)	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	Madla (12-30) 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	Hamirpur (12) Banda (12) Sahijina(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	Chillaghat (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	83.74	84.74	87.99	1978	Wireless/ Telemetry	Conventional	
52	Dholpur	Chambal/Ganga	Dholpur / Rajasthan	26.65	77.9	Pali (18-24) Manderial(06-12)	LYD Agra/YBO		129.79	130.79	145.54	1996	Wireless/ Telemetry	Conventional	
53	Manderial	Chambal/Ganga	Karauli/Rajasthan	26.28	77.28	Pali (08)	CD Jaipur/HOC Noida/YBO ND		164.00	165	169.96	1996			
54	Allahabad (Chatnag)	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.40	81.91	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UG BO	East Uttar Prasdesh	83.73	84.73	88.03	1978	Wireless/ Telemetry	Conventional	
55	Mirzapur	Ganga/Ganga	Mirzapur/Mirzapur/ Uttar Pradesh	25.15	82.53	Dalmau (28) Chillaghat (34)	MGD3/HOCV/UG BO	East Uttar Prasdesh	76.72	77.72	80.34	1978	Wireless/ Telemetry	Conventional	
56	Varanasi	Ganga/Ganga	Varanasi/Varanasi/ Uttar Pradesh	25.33	83.04	Kanpur (48) Hamirpur(48)	MGD3/HOCV/UG BO	East Uttar Prasdesh	70.26	71.26	73.90	1978	Wireless/ Telemetry	Conventional	
57	Hanuman Setu	Gomti/Ganga	Lucknow/Lucknow/ Uttar Pradesh	26.86	80.95	Bhatpurwaghat (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Deh radun/UGBO Lucknow	IMD Lucknow	108.50	109.50	110.85	1971	Wireless/ Mobile	Correlation Graph	
58	Rae-Bareilly	Sai/Gomti/Ganga	Rae-bareilly/Rae-bareilly/Uttar Pradesh	26.20	81.25	Bani (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Deh radun/UGBO Lucknow	IMD Lucknow	100.00	101.00	104.81	1982	Wireless/ Mobile	Correlation Graph	
59	Jaunpur	Gomti/Ganga	Jaunpur/Jaunpur/ Uttar Pradesh	25.75	82.67	Sultanpur (24)	MGD3/HOCV/UG BO	East Uttar Prasdesh	73.06	74.06	77.74	1971	Wireless/ Telemetry	Conventional	
60	Ghazipur	Ganga/Ganga	Ghazipur/ Ghazipur/ Uttar Pradesh	25.58	83.60	Allahabad (28) Sultanpur (30)	MGD3/HOCV/UG BO	East Uttar Prasdesh	62.10	63.10	65.22	1978	Wireless/ Telemetry	Conventional	
61	Buxar	Ganga/Ganga	Buxar/Buxar/Bihar	25.58	83.97	Allahabad (30)	LGD-II/HOCP/LGBO	Bihar	59.32	60.32	62.09	1948	Wireless/ Telemetry	Conventional	
62	Ballia	Ganga/Ganga	Ballia/ Ballia/ Uttar Pradesh	25.77	84.37	Varanasi (28) Jaunpur (28)	MGD3/HOCV/UG BO	East Uttar Prasdesh	56.62	57.62	60.39	2016	Wireless/ Telemetry	Conventional	
63	Banbasa Barrage	Ghaghra/Ganga	Champawat/Uttarakhand	28..99	80.1	Pancheshwar(18-24)	MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL 222.96		223.3	2013		3 days advisory Forecast (CWC BETA Model)	
64	Katarniaghat Barrage	Ghaghra/Ganga	Bahraich / UttarPradesh	28.27	81.09		MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL-136.8						
65	Elgin Bridge	Ghaghra/Ganga	Barabanki/Barabanki/ Uttar Pradesh	27.09	81.49	B K Ghat (30-36) Shardanagar (30-36)	MGD1/HOCV/UG BO	East Uttar Prasdesh	105.07	106.07	107.62	2014	Wireless/ Telemetry	Conventional	
66	Ayodhya	Ghaghra/Ganga	Ayodhya/Faizbad/ Uttara Pradesh	26.81	82.21	Elgin Bridge (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	91.73	92.73	94.01	2009	Wireless/ Telemetry	Conventional	
67	Kakardhari	Rapti/Ghaghra/ Ganga	Bahraich / UttarPradesh	27.89	81.77		MGD1/HOCV/UG BO	East Uttar Prasdesh	130.00	131.00	132.37	2014			
68	Balrampur	Rapti/Ghaghra/ Ganga	Balrampur/ Balrampur/ Uttar Pradesh	27.44	82.23	Kakardhari (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	103.62	104.62	105.54	2017	Wireless/ Telemetry	Conventional	
69	Bansi	Rapti/Ghaghra/ Ganga	Bansi/ Siddarthnagar/ Uttar Pradesh	27.18	82.94	Balrampur (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	83.90	84.90	85.95	2021	Wireless/ Telemetry	Conventional	
70	Gorakhpur (Birdghat)	Rapti/Ghaghra/ Ganga	Gorahpur/ Gorakhpur/ Uttar Pradesh	26.73	83.35	Bansi (18-24) Kakardhari (18-24)	MGD1/HOCV/UG BO	East Uttar Prasdesh	73.98	74.98	77.54	1998	Wireless/ Telemetry	Conventional	

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											(m)	Year			
71	Turtipar	Ghaghra/Ganga	Balthra/Ballia/ Uttar Pradesh	26.14	83.88	Ayodhya (30-36) Gorakhpur (Birdghat) (30-36)	MGD1/HOCV/UGBO	East Uttar Prasdesh	63.01	64.01	66.00	1998	Wireless/ Telemetry	Conventional	
72	Darauli	Ghaghra/Ganga	Darauli/Siwan/Bihar	26.07	84.13	Elgin Bridge (54) Gorakhpur (Birdghat) (28)	LGDII/HOCP/LGBO	Bihar	59.82	60.82	61.74	1998	Wireless	Conventional	
73	Gangpur Siswan	Ghaghra/Ganga	Siwan/Siwan/Bihar	25.91	84.39	Turtipar (20)	LGDII/HOCP/LGBO	Bihar	56.04	57.04	58.01	1983	Wireless	Conventional	
74	Chhapra	Ghaghra/Ganga	Chhapra/Saran/Bihar	25.76	84.79	Gangpur Siswan (16)	LGDII/HOCP/LGBO	Bihar	52.68	53.68	54.59	1982	Wireless	Conventional	
75	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	
76	Rihand Dam	Rihand/ Ganga	Robertsganj/Sonbhadra/ Uttar Pradesh	24.21	83.02		MGDIII/HOC Varanashi/UGBO	East Uttar Pradesh	FRL-265.18					Rainfall Runoff Model	
77	Annaraj Dam	Khoranadi/Ganga	Bhadua / Hazaribagh/Jharkhand	24.06	83.8		LGDII/HOCP/LGBO		FRL-252.44						
78	Bhairawa Dam	Goda Nala /Ganga	Hazaribagh/Jharkhand	23.51	85.67		DD/HOCM/ LGBO		FRL-356.70						
79	Inderpuri Barrage	Sone/Ganga	Inderpuri/Garhwa/ Bihar	24.75	84.16		LGDII/HOCP/LGBO	Bihar	FRL-173.00						
80	Inderpuri	Sone/Ganga	Inderpuri/Rohtas/ Bihar	24.84	84.13	Chopan (12) Daltonganj (12)	LGDII/HOCP/LGBO	Bihar	107.20	108.20	108.85	1975	Wireless	Conventional	
81	Koelwar	Sone/Ganga	Koelwar/Bhojpur/ Bihar	25.57	84.79	Inderpuri (10-15) Japla	LGDII/HOCP/LGBO	Bihar	54.52	55.52	58.88	1971	Wireless	Conventional	
82	Maner	Sone/Ganga	Maner/Patna/Bihar	25.70	84.86	Gandhighat (6-8)	LGDII/HOCP/LGBO	Bihar	51.00	52.00	53.79	1976	Wireless	Conventional	
83	Patna (Dighaghat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.64	85.10	Patna (Gandhighat) (04)	LGDII/HOCP/LGBO	Bihar	49.45	50.45	52.52	1975	Wireless	Conventional	
84	Gandak Barrage	Gandak/Ganga	West Champaran/Bihar	27.43	83.90		LGDI/HOCP/LGBO	Bihar	FRL-110.3						
85	Khadda	Gandak/Ganga	Deoria/Kushinagar/ Uttar Pradesh	27.23	83.87	Triveni (07)	LGD-I/MC/LGBO Patna	Bihar	95.00	96.00	97.50	2002	Wireless	Conventional	
86	Chatia	Gandak/Ganga	Ariraj West Champaran/ Motihari/ Bihar	26.50	84.54	Triveni (24)	LGD-I/MC/LGBO Patna	Bihar	68.15	69.15	70.04	2002	Wireless	Conventional	
87	Dumariaghat	Gandak/Ganga	Gopalganj/Bihar	26.35	84.76	Chatia(24)	LGD-I/MC/LGBO Patna	Bihar	61.22	62.22	64.36	2020	Wireless	Conventional	
88	Rewaghat	Gandak/Ganga	Muzzafarpur/Muzzafarpur/Bihar	25.99	85.05	Chatia (20)	LGDII/HOCP/LGBO	Bihar	53.41	54.41	55.46	2020	Wireless	Conventional	
89	Hazipur	Gandak/Ganga	Hazipur/Vaishali/ Bihar	25.69	85.20	Rewaghat (16)	LGDII/HOCP/LGBO	Bihar	49.32	50.32	50.93	1948	Wireless	Conventional	
90	Patna (Gandhighat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.62	85.17	Buxar (24) Darauli (24) Rewaghat (24) Japla (24)	LGDII/HOCP/LGBO	Bihar	47.60	48.60	50.52	2016	Wireless/ Telemetry	Conventional	
91	Amanat Dam	Baranadi/Ganga	Hazaribagh/Jharkhand	24.01	84.47		LGDII/HOCP/LGBO		274.39						
92	Batane Dam	Punpun/Ganga	Chhatarpur/Palamu/Jharkhand	24.42	84.26		LGDII/HOCP/LGBO		FRL-232.85						
93	Sripalpur	Punpun/Ganga	Sripalpur/Patna/Bihar	25.50	85.11	Kinjer (24)	LGDII/HOCP/LGBO	Bihar	49.60	50.60	53.91	1976	Wireless	Conventional	

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94	Hathidah	Ganga/Ganga	Hathidah/Patna/Bihar	25.37	85.99	Gandhighat (16)	LGDII/HOCP/LGBO	Bihar	40.76	41.76	43.52	2021	Wireless/ Telemetry	Conventional	
95	Munger	Ganga/Ganga	Munger/Munger/ Bihar	25.38	86.46	Gandhighat (24)	LGDII/HOCP/LGBO	Bihar	38.33	39.33	40.99	1976	Wireless/ Telemetry	Conventional	
96	Lalbeghiaghat	Burhi Gandak/ Ganga	Dhaka/Motihari/Bihar	26.65	85.03	Chainpatia (24)	LGDI/HOCP/LGBO	Bihar	62.20	63.20	67.09	1975	Wireless	Conventional	
97	Ahirwalia	Burhi Gandak/ Ganga	Chakia/Purba Champaren/Bihar	26.41	85.14	Lalbegiaghat(24)	LGD-I/MC/LGBO Patna	Bihar	58.62	59.62	61.17	2014			
98	Muzzafarpur (Sikandarpur)	Burhi Gandak/ Ganga	Sikandarpur/Muzzafarpur/Bihar	26.14	85.39	Ahirwala(S) (24)	LGDI/HOCP/LGBO	Bihar	51.53	52.53	54.29	1987	Wireless	Conventional	
99	Samastipur	Burhi Gandak/ Ganga	Samastipur/Samastipur/Bihar	25.86	85.79	Sikandarpur (20)	LGDI/HOCP/LGBO	Bihar	45.02	46.02	49.38	1987	Wireless	Conventional	
100	Rosera	Burhi Gandak/ Ganga	Rosera/Samastipur/ Bihar	25.74	86.02	Sikandarpur (28)	LGDI/HOCP/LGBO	Bihar	41.63	42.63	46.56	2020	Wireless	Conventional	
101	Khagaria	Burhi Gandak/ Ganga	Khagaria/Khagaria/ Bihar	25.75	86.48	Sikandarpur (24) Gandhighat (24)	LGDI/HOCP/LGBO	Bihar	35.58	36.58	39.22	1976	Wireless	Conventional	
102	Bhagalpur	Ganga/Ganga	Bhagalpur/Bhagalpur/Bihar	25.27	87.02	Gandhighat (32)	LGDII/HOCP/LGBO	Bihar	32.68	33.68	34.86	2021	Wireless/ Telemetry	Conventional	
103	Colgong/Kahalgaon	Ganga/Ganga	Colgong/Bhagalpur/ Bihar	25.27	87.23	Gandhighat (38)	LGDII/HOCP/LGBO	Bihar	30.09	31.09	32.87	2003	Wireless/ Telemetry	Conventional	
104	Kosi Barrage	Kosi/Ganga	Supaul/Supaul/Bihar	26.52	86.92		LGDI/HOCP/LGBO		FRL-74.69						
105	Basua	Kosi/Ganga	Supaul/Supaul/Bihar	26.10	86.58	Birpur (16)	LGDI/HOCP/LGBO	Bihar	46.75	47.75	49.24	2017	Wireless	Conventional	
106	Dheng Bridge	Bagmati/Ganga	Sitamarhi/Bihar	26.72	85.32	Karmaiya(Nepal) (24)	LGDI/HOCP/LGBO		70.00	71.00	73.00	2017			
107	Runisaidpur	Bagmati/Ganga	Sitamarhi/Bihar	26.34	85.49	Dheng Bridge(24)	LGDI/HOCP/LGBO		54.00	55.00	58.15	2017			
108	Benibad	Bagmati/Ganga	Benibad/Muzzafarpur/ Bihar	26.20	85.67	Runisaidpur (24)	LGDI/HOCP/LGBO	Bihar	47.68	48.68	50.01	2004	Wireless/ Telemetry	Conventional	
109	Kamtaul	Adhwara Group/Ganga	Kamtaul Market/Darbhanga/ Bihar	26.33	85.80	Sonebarsa (24)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	52.99	1987	Wireless/ Telemetry	Conventional	
110	Ekmighat	Adhwara Group/Ganga	Laheria Seria/Darbhanga/ Bihar	26.12	85.88	Saulighat (24) Kamtaul(24)	LGDI/HOCP/LGBO	Bihar	45.94	46.94	49.52	2004	Wireless/ Telemetry	Conventional	
111	Hayaghat	Bagmati/Ganga	Hayaghat Papermill/Darbhanga/ Bihar	26.03	85.89	Benibad (24) Ekmighat (24)	LGDI/HOCP/LGBO	Bihar	44.72	45.72	48.96	1987	Wireless/ Telemetry	Conventional	
112	Jainagar	Kamlabalan/ Ganga	Madhubani/ Bihar	26.59	86.13	Sindhuli(Nepal) (08-28)	LGDI/HOCP/LGBO	Bihar	66.75	67.75	71.35	2016			
113	Jhanjharpur	Kamlabalan/ Ganga	Jhanjharpur/Madhubani/ Bihar	26.27	86.27	Jainagar (8-28)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	53.11	2019	Wireless	Conventional	
114	Sonebarsa	Adhwara Group/Ganga	Sitamarhi/Bihar	26.85	85.85	Patharkot(Nepal) (24)	LGDI/HOCP/LGBO		80.85	81.85	83.20	1999			
115	Baltara	Kosi/Ganga	Choutham/Khagaria/ Bihar	25.54	86.72	Basua (24) Hayaghat (24)	LGDI/HOCP/LGBO	Bihar	32.85	33.85	36.40	1987	Wireless	Conventional	

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116	Kursela	Kosi/Ganga	Kusela/Katihar/Bihar	25.42	87.23	Basua (24) Hathidah (24)	LGDI/HOCP/LGBO	Bihar	29.00	30.00	32.10	1982	Wireless	Conventional	
117	Sahibganj	Ganga/Ganga	Sahibganj/Sahibganj/Jharkhand	25.25	87.64	Munger (22)	LGDII/HOCP/LGBO	Jharkhand	26.25	27.25	30.91	1998	Wireless	Conventional	
118	Taibpur	Mahananda/ Ganga	Kishanganj/Bihar	26.36	88.17	Sonapur(16)	LGDI/HOCP/LGBO	Bihar	65.00	66.00	67.22	2016			
119	Dengraghat	Mahananda/ Ganga	Bayasi/Purnes/Bihar	25.85	87.81	Taibpur (24) Chargharia (24)	LGDI/HOCP/LGBO	Bihar	34.65	35.65	38.20	2017	Wireless	Conventional	
120	Jhawa	Mahananda/ Ganga	Jhawa/Katihar/Bihar	25.61	87.76	Dhengraghat (16) Araria (16)	LGDI/HOCP/LGBO	Bihar	30.40	31.40	34.07	2017	Wireless	Conventional	
121	Arraria	Parwan/Ganga	Arraria/Bihar	26.12	87.54	Bathnaha(16)	LGDI/HOCP/LGBO	Bihar	46.00	47.00	49.40	2017			
122	Farakka	Ganga/Ganga	Farakka/Murshidabad/ West Bengal	24.80	87.92	Munger (38) Baltara (30)	LGDI/HOCP/LGBO	Gangetic West Bengal	21.25	22.25	25.14	1998	Wireless	Conventional	
123	Massanjore Dam	Mayurakshi/Ganga	Massanjore Dam/ Santhal Parganas/ Jharkhand	24.11	87.31	Maharo (12-14)	DD/HOCM/ LGBO	Jharkhand	121.31		122.87	1999	Wireless/ Telemetry	Conventional	
124	Tilpara Barrage	Mayurakshi/Ganga	Tilpara Dam/Suri/ Birbhum/ West Bengal	23.95	87.53	Massanjore Dam (10-12) Tantoloi (10-12)	DD/HOCM/ LGBO	Gangetic West Bengal	62.79		67.05	1978	Wireless/ Telemetry	Conventional	
125	Narayanpur	Mayurakshi/ Ganga	Kandi/Murshidabad/ West Bengal	23.88	87.91	Tilpara Barrage (16-21)	DD/HOCM/ LGBO	Gangetic West Bengal	26.86	27.86	29.69	1995	Wireless	Conventional	
126	Sikatia Barrage	Ajoy/Ganga	Ausgram/Deoghar/Jharkhand	24.15	86.25		DD/HOCM/ LGBO								
127	Gheropara	Ajoy/Ganga	Khairasol/ Bhirbum/ West Bengal	23.62	87.70	Sikata Barrage (16-18)	DD/HOCM/ LGBO	Gangetic West Bengal	38.42	39.42	43.94	1978	Wireless	Conventional	
128	Tenughat Dam	Damodar/Ganga	Bokaro/Jharkhand	23.72	85.84	Hendgir (12-14)	DD/HOCM/ LGBO	Jharkhand	268.83				Wireless/ Telemetry	Conventional	
129	Tilaya Dam	Barakar/ Ganga	Koderma/Jharkhand	24.32	85.52		DD/HOCM/ LGBO								
130	Konar Dam	Konar/Ganga	Hazaribag/Jharkhand	23.93	85.76		DD/HOCM/ LGBO								
131	Panchet Dam	Damodar/Ganga	Panchet Dam/ Dhanbad/ Jharkhand	23.68	86.75	Tenughat Dam (12-14)	DD/HOCM/ LGBO	Jharkhand	132.59				Wireless/ Telemetry	Conventional	
132	Maithon Dam	Barakar/ Damodar	Maithon Dam/ Dhanbad/ Jharkhand	23.78	86.81	Barkisaraia (14-18)	DD/HOCM/ LGBO	Jharkhand	150.88				Wireless/ Telemetry	Conventional	
133	Durgapur Barrage	Damodar/Ganga	Durgapur/ Burdwan/ West Bengal	23.48	87.31	Panchet Dam (18-24) Maithon Dam (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	64.47				Wireless/ Telemetry	Conventional	
134	Sundar Dam	Anjanwa/ Ganga	Godda/Jharkhand	24.93	87.38		DD/HOCM/ LGBO		110.79						
135	Harinkhola	Mundeshwari/ West Benagl	Arambagh/Hooghly/ West Bengal	22.83	87.90	Durgapur Barrage (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	11.80	12.80	14.60	2017	Wireless/ Telemetry	Conventional	
136	Hinglow Dam	Kangsabati	Bankura/West Bengal	23.82	87.18		DD/HOCM/ LGBO	Gangetic West Bengal	97.84						
137	Kangsabati Dam	Kangsabati	Kangsabati Dam/Bankura West Bengal	22.96	86.75	Simulia (14-16)	DD/HOCM/ LGBO	Gangetic West Bengal	134.11		134.71	1978	Wireless	Conventional	
138	Mohanpur	Kangsabati/ Ganga	Medhinipur/ Medhinipur/ West Bengal	22.40	87.34	Kangsabati Dam (12-14)	DD/HOCM/ LGBO	Gangetic West Bengal	24.73	25.73	29.87	1978	Wireless	Conventional	
139	Yingkiang	Siang/ Brahmaputra	Upper Siang/Arunachal Pradesh	28.62	95.03	Tuting (06)	UBD/HOCG/ BBBO	Assam and Meghalaya	303.00	304.00					
140	Passighat	Siang/ Brahmaputra	Passighat/ East Siang/ Arunachal Pradesh	28.06	95.33	Tuting (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	152.96	153.96	157.54	2000	Wireless	Conventional	
141	Dhollabazar	Lohit/Brahmaputra	Tinsukia/Assam	27.75	95.6	Tezu(09)	UBD/HOC/B&BBO	Assam & Meghalaya	127.27	128.27	130.07	2012			
142	Dibrugarh	Brahmaputra/ Brahmaputra	Dibrugarh/Dibrugarh/Assam	27.49	94.85	Passighat (12) Tezu (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	104.70	105.70	106.48	1998	Wireless/ Telemetry	Conventional	
143	Namsai	Nao Dehing/Brahmapu	Namsai/Lohit/Arunachal Pradesh	27.66	95.83	Miao(09) Motipur(09)	UBD/HOC/B&BBO	Arunachal Pradesh	144.8	145.8	146.6	1979			
144	Naharkatia	Buridehing/ Brahmaputra	Naharkatia/ Dibrugarh/ Assam	27.29	95.33	Margherita (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	119.40	120.40	122.69	1973	Wireless	Conventional	
145	Chenimari (Khowang)	Buridehing/ Brahmaputra	Khowang/ Dibrugarh/ Assam	27.31	94.88	Naharkatia (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	101.11	102.11	104.16	2015	Wireless	Conventional	

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146	Nanglamoraghat	Desang/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.99	94.78	Dillighat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	93.46	94.46	96.49	1998	Wireless	Conventional	
147	Sibsagar	Dikhow/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.98	94.58	Bihubar (09)	UBD/HOCG/ BBBO	Assam and Meghalaya	91.40	92.40	94.24	2020	Wireless	Conventional	
148	Neamatighat	Brahmaputra/ Brahmaputra	Neamatighat/ Jorhat/ Assam	26.86	94.25	Dibrugarh (24) Chenimari (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	84.54	85.54	87.37	1991	Wireless/ Telemetry	Conventional	
149	Choldhowaghat	Subansiri/ Brahmaputra	Dhakuakhana/Lakhimpur/Assam	27.44	94.25	Daporizo(09)	UBD/HOC/B&BBO	Assam & Meghalaya	99.43	100.43	101.31	1972			
150	N.H.Xing Ranganadi	Ranganadi/Brahmaputra	Bihuparia/ Lakhimpur/ Assam	27.2	94.05	Yazali(09)	UBD/HOC/B&BBO	Assam & Meghalaya	93.81	94.81	95.92	1979			
151	Badatighat	Subansiri/ Brahmaputra	Bihuparia/ Lakhimpur/ Assam	26.95	93.96	Chouldhowaghat (18)	UBD/HOCG/ BBBO	Assam and Meghalaya	81.53	82.53	86.21	1972	Wireless	Conventional	
152	Golaghat	Dhansisri (S)/ Brahmaputra	Golaghat/ Golaghat Assam	26.50	93.95	Bokajan (15) Gelabil (15)	UBD/HOCG/ BBBO	Assam and Meghalaya	88.50	89.50	92.45	1986	Wireless	Conventional	
153	Numaligarh	Dhansisri (S)/ Brahmaputra	Numaligarh/ Golaghat/ Assam	26.63	93.73	Golaghat (12)	UBD/HOCG/ BBBO	Assam and Meghalaya	77.42	78.42	80.16	2018	Wireless	Conventional	
154	N T Road Crossing	Jia- Bharali/ Brahmaputra	Balipara/Sonitpur/ Assam	26.81	92.88	Seppa (9)	UBD/HOCG/ BBBO	Assam and Meghalaya	76.00	77.00	78.50	2007	Wireless	Conventional	
155	Tezpur	Brahmaputra/ Brahmaputra	Tezpur/ Sonitpur/ Assam	26.62	92.80	Neamatighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	64.23	65.23	66.59	1988	Wireless/ Telemetry	Conventional	
156	Kampur	Kopili/ Brahmaputra	Kampur/ Nagaon/ Assam	26.15	92.65	Kheronighat (24)	UBD/HOCG/ BBBO	Assam and Meghalaya	59.50	60.50	61.79	2004	Wireless	Conventional	
157	Dharamtul	Kopili/ Brahmaputra	Dharamtul/Morigaon/Assam	26.17	92.36	Kampur (15)	UBD/HOCG/ BBBO	Assam and Meghalaya	55.00	56.00	58.09	2004	Wireless	Conventional	
158	Guwahati D C Court	Brahmaputra/ Brahmaputra	Guwahati/Kamrup/ Assam	26.19	91.74	Tezpur (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	48.68	49.68	51.46	2004	Wireless/ Telemetry	Conventional	
159	N H Crossing	Puthimari/ Brahmaputra	Rangia/ kamrup/ Assam	26.33	91.65	DRF (13)	MBD/HOCG/ BBBO	Assam and Meghalaya	50.81	51.81	55.08	2008	Wireless/ Telemetry	Conventional	
160	N T Road Crossing	Pagladiya/ Brahmaputra	Nalbari/Nalbari/ Assam	26.45	91.46	Melabazar (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	51.75	52.75	55.45	2004	Wireless/ Telemetry	Conventional	
161	Mathanguri	Manas/ Brahmaputra	Baska/Assam	26.78	90.95		MBD/HOCG/ BBBO	Assam and Meghalaya	98.10	99.10	100.28	1973			
162	Road Bridge	Beki/ Brahmaputra	Sorbhog/ Barpeta/ Assam	26.49	90.91	Mathanguri (6) Kurijampa (12) (Bhutan)	MBD/HOCG/ BBBO	Assam and Meghalaya	44.10	45.10	46.20	2000	Wireless	Conventional	
163	N H Crossing	Manas/ Brahmaputra	Bijni/ Bongaigaon/ Assam	26.46	90.75	Panbari (6)	MBD/HOCG/ BBBO	Assam and Meghalaya	47.81	48.42	50.08	1984	Wireless	Conventional	
164	Goalpara	Brahmaputra/ Brahmaputra	Goalpara/ Goalpara/ Assam	26.20	90.65	Guwahati (24)	MBD/HOCG/ BBBO	Assam and Meghalaya	35.27	36.27	37.43	1954	Wireless/ Telemetry	Conventional	
165	Kokrajhar	Gaurang/ Brahmaputra	Kokrajhar/ Assam	26.61	90.25		MBD/HOCG/ BBBO	Assam & Meghalaya	41.85	42.85	43.6	2015			
166	Dhubri	Brahmaputra/ Brahmaputra	Dhubri/Dhubri/ Assam	26.01	89.99	Goalpara (12)	MBD/HOCG/ BBBO	Assam and Meghalaya	27.62	28.62	30.37	2019	Wireless/ Telemetry	Conventional	
167	Golokganj	Sankosh/ Brahmaputra	Golokganj/Dhubri/ Assam	26.11	89.82	Sankosh LRP (12) Barabisa (12)	LBD/SICG/T&BDBO	Assam and Meghalaya	28.94	29.94	30.95	2007	Wireless/ Telemetry	Conventional	
168	Tufangunj	Raidak -I	Tufangunj/ Coochbehar/ west Bengal	26.31	89.68	Chepan (12)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	34.22	35.30	36.50	2017	Wireless	Conventional	
169	N H 31	Jaldhaka/ Brahmaputra	Dhupguri/ Jalpaiguri/ West Bengal	26.57	88.94	Nagarakata (6) Diana (6) Murti (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	80.00	80.90	81.33	1972	Wireless	Conventional	
170	Hasimara	Torsa	Hasimara/Coochbehar/West Bengal	26.72	89.32	Dorokha (06)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	116.30	116.90	118.50	1996			
171	Ghughumari	Torsa	Coochbehar/Coochbehar/West Bengal	26.29	89.46	Hasimara (8)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	39.80	40.41	41.46	2000	Wireless	Conventional	

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											(m)	Year			
172	Mathabhanga	Jaldhaka/ Brahmaputra	Mathabhanga/ Coochbehar/ West Bengal	26.32	89.23	N H 31 (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	47.70	48.20	49.85	2007	Wireless	Conventional	
173	Domohani Road Bridge	Teesta/Brahmaputra	Jalpaiguri/ Jalpaiguri/ West Bengal	26.56	88.76	Khanitar (10) Majhitar (10) Coronation (6) Gazoldoba (04) Chel (06) Neora (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	85.65	85.95	89.30	1968	Wireless	Conventional	
174	Mekhligunj	Teesta/Brahmaputra	Mekhligunj/ Coochbehar/ West Bengal	26.33	88.85	Domohani Rd Brdige (6)	LBD/SICG/T&BD BO	Sub Himalayan West Bengal & Sikkim	65.45	65.95	66.45	1996	Wireless	Conventional	
175	Teesta III HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.59	88.64	Lachen (01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	1585.00					Rainfall Runoff Model	
176	Rangit-III HEP Dam	Teesta/Brahmaputra	Gyalshing/West Sikkim/Sikkim	27.29	88.29		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	640					Rainfall Runoff Model	
177	Teesta V HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.38	88.5	Sankalan(01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	579					Rainfall Runoff Model	
178	Singtam	Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.49	Ranipool(1)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	377.07	377.57	379.17			Rainfall Runoff Model	
179	Rangpo Dam	Rongpo/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.7		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
180	Rongli Dam	Rongli/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.2	88.71		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
181	Melli Bazar	Teesta/Brahmaputra	South Sikkim/Sikkim	27.09	88.45	Teesta V Dam(02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	223	224	225.25			Rainfall Runoff Model	
182	Rothak	Teesta/Brahmaputra	West Sikkim/Sikkim	27.17	88.29	Sagbari (01)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	350.6	351.6	353.2			Rainfall Runoff Model	
183	Annapurnaghat (Silchar)	Barak/ Barak	Silchar/Silchar/ Assam	24.83	92.80	Chottabekra (18) Amraghat(18) Dhalai(18)	MID/MC/ BOBO	Assam and Meghalaya	18.83	19.83	21.84	1989	Wireless	Conventional	
184	Matizuri	Katakhal/Barak	Hailakhandi/ Hailakhandi/ Assam	24.85	92.61	Gharmura (12)	MID/MC/ BOBO	Assam and Meghalaya	19.27	20.27	22.73	2007	Wireless	Conventional	
185	Badarpurghat	Barak/Barak	Silchar/Cachar/ Assam	24.86	92.52	Annapurnaghat (9)	MID/MC/ BOBO	Assam and Meghalaya	15.85	16.85	18.48	2007	Wireless	Conventional	
186	Karimgunj	Kushiyara/Barak	Karimgunj/Karimgunj/Assam	24.87	92.36	Annapurnaghat (12)	MID/MC/ BOBO	Assam and Meghalaya	13.94	14.94	16.57	2010	Wireless	Conventional	
187	Kailashshar	Manu	Kailashshar/ North Tripura Tripura	24.32	91.99	Manughat (18-24)	MD/MC/ BOBO	NMMT	24.34	25.34	25.95	2018	Wirless	Conventional	
188	Sonamura	Gumti	Sonamura/ West Tripura/ Tripura	23.47	91.27	Amarpur (15-21)	MD/MC/ BOBO	NMMT	11.50	12.50	14.42	1993	Wireless	Conventional	
189	Getlasud Dam	Subarnarekha/ Subarnarekha	Ranchi/Jharkhand	23.45	85.55	Kanke Road Bridge/Bada Ghagara	ERD/HOCB/ MERO		590.06						
190	Chandil Dam	Subarnarekha/ Subarnarekha	Musabani/Purba singbhum/ Jharkhand	22.97	86.05	Muri(10-12)	ERD/HOCB/ MERO	Jharkhand		FRL-189				Rainfall Runoff Model	

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191	Galudih Barrage	Subarnarekha/ Subarnarekha	SaraikelaKhara/Jharkhand	22.64	86.39	Jamshedpur	ERD/HOCB/ MERO		FRL-94.50						
192	Jamshedpur	Subarnarekha/ East Flowing Rivers	Chakulia/Purba singbhum/ Jharkhand	22.82	86.21	Adtiyapur/Chandil Dam (6-8)	ERD/HOCB/ MERO	Jharkhand	122.50	123.50	129.82	1973	Wireless/ Telemetry	Conventional	
193	Rajghat	Subarnarekha/ East Flowing Rivers	Jaleswar/Balasore/ Odisha	21.77	87.16	Jamsaloghat (16-24) Fekoghat (16-24)	ERD/HOCB/ MERO	Odisha	9.45	10.36	12.69	2008	Wireless/ Telemetry	Conventional	
194	Mathani Road Bridge	Subarnarekha/ East Flowing	Baleshwar/Odisha	21.66	87.06	Jalaka Rd Bridge at Sansa (06-08)	ERD/HOCB/ MERO	Odisha	5.50	5.50	7.31	2021			
195	N H 5 Road Bridge	Burhabalang/ East Flowing	Govindpur/ Balasore/ Odisha	21.55	86.92	Baripada (13-15)	ERD/HOCB/ MERO	Odisha	7.21	8.13	9.50	1973	Wireless	Conventional	
196	Salandi Dam	Baitarani/Brahmani-Baitarani	Kendujhar/Odisha	21.28	86.30	Bhejdihi	ERD/HOCB/ MERO		82.30						
197	Anandpur	Baitrani/East Flowing Rivers	Anandpur/ Keonjargarh/ Odisha	21.22	86.11	Swampatna (6-8)	ERD/HOCB/ MERO	Odisha	37.44	38.36	41.35	2011	Wireless/ Telemetry	Conventional/ Mathematical	
198	Akhuapada	Baitrani/East Flowing Rivers	Akhuapada/ Bhadrak/ Odisha	20.92	86.28	Swampatna(12-15) Anandpur (12-15)	ERD/HOCB/ MERO	Odisha	17.83	17.83	21.95	1960	Wireless/ Telemetry	Conventional	
199	Rengali Dam	Brahmani/Brahmani-Baitarani	Angul/Odisha	21.28	85.03	Panposh (10-12)	ERD/HOC/MERO Bhubaneshwar		FRL-123.5						
200	Jenapur Expressway	Brahmani/East Flowing Rivers	Jenapur/Jajpur/ odisha	20.88	86.01	Talcher (15-16) Altuma)15-16)	ERD/HOCB/ MERO	Odisha	22.00	23.00	24.78	1975	Wireless/ Telemetry	Conventional	
201	Ravi Shankar Dam	Mahanadi/ Mahanadi	Dhamtari/Chattisgarh	20.61	81.56		MD/HOCB/MERO		FRL-348.70						
202	Bango Dam	Hasdeo/ Mahanadi	Korba/Chattisgarh	22.59	82.57		MD/HOCB/MERO		FRL-359.66						
203	Hirakud	Mahanadi/ Mahanadi	Burla/ Sambalpur/ Odisha	21.52	83.85	Basantpur (24) Kurubata (24) Sundergarh (24) Kelo (6-18)	MahanadiDiv/HOCB/MERO	Odisha	192.02				Wireless/ Telemetry	Conventional/ Mathematical	
204	Naraj	Mahanadi/ Mahanadi	Cuttack/ Cuttack/Odisha	20.47	85.77	Tikarapara (18-20)	MahanadiDiv/HOCB/MERO	Odisha	25.41	26.41	27.61	1982	Wireless	Conventional/ Mathematical	
205	Alipingal	Devi/Mahanadi	Alipingal/Jagitsinghpur/ Odisha	20.07	86.17	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	10.85	11.76	13.11	2011	Wireless/ Telemetry	Conventional	
206	Nimapara	Kushbhadra/ Mahanadi	Nimapara/Puri/ Odisha	20.06	86.01	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	9.85	10.76	11.60	1982	Wireless/ Telemetry	Conventional	
207	Purushottampur	Rishikulya/ East Flowing Rivers	Purushottampur/ Ganjam/ Odisha	19.50	84.87	Sorada (14-20)	ERD/HOCB/ MERO	Odisha	15.83	16.83	19.65	1990	Wireless/ Telemetry	Conventional	
208	Gunupur	Vamshadara/East Flowing Rivers	Gunupur/Koraput/ Odisha	19.08	83.81	Gudari (03-05)	ERD/HOCB/ MERO	Odisha	83.00	84.00	88.75	1980	Wireless/ Telemetry	Conventional	
209	Kashinagar	Vamshadara/East Flowing Rivers	Kashinagar/Ganjam/ Odisha	18.85	83.87	Gunupur (04-07)	ERD/HOCB/ MERO	Odisha	54.10	54.60	58.93	1980	Wireless/ Telemetry	Conventional/ Mathematical	
210	Gotta Barrage	Vamsadhara/ East Flowing Rivers	Gotta Barrage/ Srikakulam/ Andhra Pradesh	18.69	83.96	Kashinagar(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	34.84				Wireless/ Telemetry	Conventional	
211	Thotapalli Resvr system	Nagavali/ East Flowing River Basin	Parvathipuram/Vizianagaram/ Andhra Pradesh	18.78	83.49	Jaggaguda/Brahmnihalua	ERD/HOCB/ MERO		FRL-105.00					Rainfall Runoff Model	
212	Madduvalasa Reservoir	Nagavali/ East Flowing River Basin	Vizianagaram/Andhra Pradesh	18.63	83.22	Seethanagaram/Paradi Rd Bridge	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL-65.00						
213	Narayanpuram Anicut	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.48	83.8	Thottapalli Barrage Madduvalasa Dam	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL - 32.77						
214	Srikakulam	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.31	83.88	Narayanpuram Anicut(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	10.17	10.8	14.53	5/12/1990			
215	Dantiwada Dam	Banas/ West Flowing Rivers	Dantiwada dam/Palanpur/ Banaskanta/ Gujarat	24.34	72.34	Sarotry (3-5) Chitrasani (2-5)	MD/HOCG/ MTBO	Gujarat	184.10				Wireless/ Telemetry	Conventional	
216	Abu Road	Banas/West Flowing River	Sirohi/Rajasthan	24.49	72.79	Swaroopganj Moras(RF) Mount Abu(RF)	MD Gandhinagar/HOC/MTBO Gandhinagar		258.00	259.00	265.40	1973	Wireless/ Telemetry	Conventional	

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217	Dharoi Dam	Sabarmati/ West Flowing Rivers	Dharoi Dam/ Mehsana/ Gujarat	24.00	72.86	Kheroj (3-5) Harnav Weir (2-4)	MD/HOCG/ MTBO	Gujarat	189.59				Wireless/ Telemetry	Conventional	
218	Subash Bridge (Ahmedabad)	Sabarmati/ West Flowing Rivers	Ahmedabad/Ahmedabad/ Gujarat	23.06	72.59	Derol Bridge (04-06) Hatmati Weir (04-06)	MD/HOCG/ MTBO	Gujarat	44.09	45.34	47.45	2006	Wireless/ Telemetry	Conventional	
219	Mahi Bajajsagar Dam	Mahi/Mahi	Banswara/Rajasthan	23.62	74.54	Mataji (02-06) Borwa(03-07) Sohagpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-281.5				Wireless/ Telemetry	Conventional	
220	Som Kamla Amba Dam	Som/Mahi	Dungarpur/Rajasthan	23.97	74.03	Khandiovri(02-06) Amarpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-213.5				Wireless/ Telemetry	Conventional	
221	Kadana Dam	Mahi/ West Flowing Rivers	Kadana Dam/ Panchmahal/ Gujarat	23.31	73.83	Paderdibadi (05-06) Anas PH -II (03-06)	MD/HOCG/ MTBO	Gujarat		127.71	127.74	1989	Wireless/ Telemetry	Conventional	
222	Panam Dam	Panam/Mahi	Kalol/Panchmahal/Gujrat	23.05	73.71	Sant Road(02-06) Hadaf Dam(02-06)	MD/HOCG/ MTBO		FRL-127.41						
223	Wanakbori Weir	Mahi/ West Flowing River	Wanakbori/Kheda	22.94	73.42	Kadana Dam (04-09) Panam Dam (03-09)	MD/HOCG/ MTBO	Gujarat	71.93	74.98	76.10	2006	Wireless/ Telemetry	Conventional	
224	Mandla	Narmada/ Narmada	Mandla/Mandla/ Madhya Pradesh	22.59	80.37	Dindori (11) Mukki (12) Manot (03) Mohgaon (04)	ND/SECB/ NBO	East Madhya Pradesh	437.20	437.80	439.41	1974	Wireless	Conventional	
225	Barna Dam	Narmada/ Narmada	Raisen/Madhya Pradesh	23.05	78.06		ND/SECB/ NBO		348.55					Mathematical Model	
226	Bargi Dam	Narmada/ Narmada	Jabalpur/Madhya Pradesh	22.94	79.92	Mandla (06)	ND/SECB/ NBO		422.76					Mathematical Model	
227	Tawa Dam	Narmada/ Narmada	Hoshangabad/ Madhya Pradesh	22.56	77.97	Pachmarhi (06-08)	ND/SECB/ NBO		355.39					Mathematical Model	
228	Hoshangabad	Narmada/ Narmada	Hoshangabad/ Hoshangabad/ Madhya Pradesh	22.76	77.69	Bargi Dam (38) Barmanghat(22) Sandia (10-12) Tawa Dam (08)	ND/SECB/ NBO	West Madhya Pradesh	292.80	293.80	301.33	1972	Wireless	Conventional	
229	Indirasagar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.28	76.47	Hoshangabad (12-14)	ND/SECB/ NBO		262.13					Mathematical Model	
230	Omkareshwar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.24	76.16	Indirasagar Dam (06-08)	ND/SECB/ NBO		196.60					Mathematical Model	
231	Sardar Sarovar Dam	Narmada/ Narmada	Ahmedabad/ Gujarat	21.82	73.74		TD/HOCG/ MTBO		138.38						
232	Garudeshwar	Narmada/ Narmada	Garudeshwar/ Bharuch/Gujarat	21.89	73.65	Sardar sarovar dam (02)	TD/HOCG/ MTBO	Gujarat	30.48	31.09	41.65	1970	Wireless/ Telemetry	Conventional	
233	Bharuch	Narmada/ Narmada	Bharuch/Bharuch/ Gujarat	21.70	73.00	Sardar Sarovar Dam(08-12)	TD/HOCG/ MTBO	Gujarat	6.71	7.31	12.65	1970	Wireless/ Telemetry	Conventional	
234	Hathnur Dam	Tapi/ Tapi	Hathnur Dam/ Jalgaon/ Maharashtra	21.07	75.95	Burhanpur (05-06) Yerli (05-06)	TD/HOCG/ MTBO	Marathwada	212.02	214.00	214.00	1989	Wireless/ Telemetry	Conventional	
235	Ukai Dam	Tapi/ Tapi	Ukai Dam/ Surat/ Gujarat	21.25	73.59	Gidadhe (10-12) Sarangkheda (6-7)	TD/HOCG/ MTBO	Gujarat	105.16	105.16	105.51	1990	Wireless/ Telemetry	Conventional	
236	Surat	Tapi/ Tapi	Surat/Surat/Gujarat	21.20	72.82	Ukai Dam (06-08)	TD/HOCG/ MTBO	Gujarat	8.50	9.50	12.50	2006	Wireless/ Telemetry	Conventional	
237	Madhuban Dam	Damanganga/ West Flowing	Madhuban Dam/ Valsad/ Gujarat	20.19	73.06	Ozarkheda (2-3) Nanipalsan (2-3)	TD/HOCG/ MTBO	Gujarat	79.86	82.40	80.60	1993	Wireless/ Telemetry	Conventional	
238	Vapi Town	Damanganga/ West Flowing Rivers	Vapi Town/ Valsad/Gujarat	20.37	72.88	Madhuban Dam (02-03)	TD/HOCG/ MTBO	Gujarat	18.20	19.20	23.76	2004	Wireless/ Telemetry	Conventional	
239	Daman	Damanganga/ West Flowing	Daman/Daman/Diu	20.41	72.84	Madhuban Dam (03)	TD/HOCG/ MTBO	Gujarat	2.60	3.40	4.00	2004	Wireless/ Telemetry	Conventional	
240	Nasik	Godavari/ Godavari	Nasik/Maharashtra	20.00	73.80		UGD/GC/KGBO		558.10	559.60	563.51	2019			
241	NMD Weir	Godavari/ Godavari	Nasik/Maharashtra	19.45	74.33		UGD/GC/KGBO		533.50						
242	Kopergaon	Godavari/ Godavari	Kopergaon/Ahmednagar/Maharashtra	19.89	74.49	N M Weir (18)	LGD/GC/ KGBO	Marathwada	490.90	493.68	499.17	1969	Wireless/ Telemetry	Conventional	
243	Mula Dam	Mula/Godavari	Ahmadnagar/Maharashtra	19.35	74.60		UGD/GC/KGBO		552.30						
244	Jaikwadi Dam	Godavari/Godavari	Paithan/ Aurangabad/ Maharashtra	19.48	75.37	N M Weir (24) Pachegaon(24)	LGD/GC/ KGBO	Marathwada	463.91	465.58	464.69	1990	Wireless	Conventional	

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245	Manjlegaon Dam	Sindhpana/ Godavari	Beed / Maharashtra	19.15	76.18		UGD/GC/KGBO								
246	Gangakhed	Godavari/ Godavari	Gangakhed/Parbhani/Maharashtra	18.98	76.75	Dhalegaon (18)	LGD/GC/ KGBO	Marathwada	374.00	375.00	377.57	1947	Wireless/ Telemetry	Conventional	
247	Yeldari Barrage	Puma/Godavari	Patbhani/Maharashtra	19.71	76.75		UGD/GC/KGBO		461.77						
248	Nanded	Godavari/ Godavari	Nanded/Nanded/ Maharastra	19.15	77.31	Gangakhed (12) Purna (12)	LGD/GC/ KGBO	Marathwada	353.00	354.00	357.10	2006	Wireless/ Telemetry	Conventional	
249	Karanja Dam	Karanja/Godavari	Bidar/Karnataka	17.88	77.31		UGD/GC/KGBO								
250	Singur Dam	Manjira/ Godavari	Singur Dam/ Medak/ Andhra Pradesh	17.75	77.93	Saigaon (24) Karanja(24)	LGD/GC/ KGBO	Telangana	523.60				Wireless	Conventional	
251	Nizamsagar Dam	Manjira/ Godavari	Nizamsagar dam/ Nizamabad/ Andhra Pradesh	18.22	77.96	Singur Dam (24)	LGD/GC/ KGBO	Telangana	428.24				Wireless	Conventional	
252	Sriramsagar	Godavari/Godavari	Pochampad/ Nizamabad/ Andhra Pradesh	18.97	78.34	Nanded (24) Nizamsagar (24) Degloor (24) Bhainsa(24)	LGD/GC/ KGBO	Telangana	332.54	333.15	332.72	1990	Wireless	Conventional	
253	Kaddam Dam	Godavari/Godavari	Kaddam/Adilabad/Telengana	19.1	78.79		UGD/GC/KGBO		FRL-213.21					Rainfall Runoff Model	
254	Sripada Yellampalli project.	Godavari/Godavari	Karimnagar/ Telengana	18.84	79.36		UGD/GC/KGBO		FRL-148					Rainfall Runoff Model	
255	Upper Wainganga Project	Wainganga/ Godavari	Balaghat/Madhya Pradesh	22.37	79.66	Bakhari (05-30)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-519.38						
256	Totladoh Project	Pench	Nagpur/Madhya Pradesh	21.65	79.23	Kokiwada(06-31)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-490.00						
257	Bawanthadi Reservoir	Bawanthri	Balaghat/Madhya Pradesh	21.54	79.54		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-344.4						
258	Pench Reservoir/Chaurai Dam	Pench	Chindwara	21.65	79.23		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-625.75						
259	Bhandara	Wainganga/ Godavari	Bhandara/Bhandara/Maharashtra	21.15	79.66	Balaghat (158) Rajegaon (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	245.50	245.70	250.90	2005	Wireless/ Telemetry	Conventional	
260	Gosikhurd Dam	Godavari/Godavari	Pauni/Bhandara/ Maharashtra	20.87	79.6	Kumhari(22-60) Rajegaon(22-60) Satrapur(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	FRL-245.50					Rainfall Runoff Model	
261	Pauni	Wainganga/ Godavari	Pauni/Bhandara/ Maharashtra	20.79	79.65	Bhandara (03-06)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	226.73	227.73	237.12	1994	Wireless/ Telemetry	Conventional	
262	Upper Wardha Project	Wardha/Godavari	Amaravati/Maharashtra	21.27	78.05		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-342.50					Rainfall Runoff Model	
263	Issapur/Upper Penganga/SSP	Penganga	Hingoli/Maharashtra	19.71	77.45	Kanhargaon(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-441.00						
264	Balharsha	Wardha/Godavari	Balharsha/Chandrapur/ Maharashtra	19.82	79.37	Ghugus (12) P G Bridge (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	171.50	174.00	176.45	1986	Wireless/ Telemetry	Conventional	
265	Sirpur Town	Wardha/Godavari	Chandrapur/Maharashtra	19.56	79.61	Ghugus (15) P.G.Bridge(21)	WD Nagpur/CC Nagpur/ MCO Nagpur		159.95	160.95	161.34	2018			
266	Kaleswaram	Godavari/ Godavari	Bhopalpally/Telangana	18.82	79.91	Mancherial (18) Tekra (18)	LGD/GC/ KGBO	Telangana	103.50	104.75	107.05	1986	Wireless/ Telemetry	Conventional	
267	Upper Indravati Project	Indravathi/ Godavari	Kalahandi/Odisha	19.27	82.82		LGD/GC/ KGBO		FRL-642.00						
268	Jagdalpur	Indravathi/ Godavari	Jagdalpur/ Bastar/ Chhatisgarh	19.09	82.03	Nowrangpur (15-18) Kosagumda (15-18)	LGD/GC/ KGBO	Chhatisgarh	539.50	540.80	544.68	1973	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			
269	Eturunagaram	Godavari/ Godavari	Eturunagaram/ Warangal/ Andhra Pradesh	18.32	80.46	Kaleswaram (12-18) Pathagudem (12-18)	LGD/GC/ KGBO	Telangana	73.32	75.82	77.66	1990	Wireless/ Telemetry	Conventional	
270	Dummagudem	Godavari/ Godavari	Dummagudem/ Khammam/ Andhra Pradesh	17.85	80.88	Perur (12-15)	LGD/GC/ KGBO	Telangana	53.00	55.00	60.25	1986	Wireless/ Telemetry	Conventional	
271	Bhadrachalam	Godavari/ Godavari	Bhadrachalam/ Khammam/ Andhra Pradesh	17.67	80.88	Perur (15-18)	LGD/GC/ KGBO	Telangana	45.72	48.77	55.66	1986	Wireless/ Telemetry	Conventional	
272	Kolab Project	Kolab/Godavari	Koraput/Odisha	18.78	82.60		LGD/GC/ KGBO		FRL-858.00						
273	Machkund Project	Machkund	Koraput/Odisha	18.45	82.54		LGD/GC/ KGBO		FRL-838.20						
274	Balimela Project	Balimela	Malkangiri/Odisha	18.30	82.25		LGD/GC/ KGBO		FRL-462.07						
275	Chinturu	Sabri/Godavari	East Godavari/Andhra Pradesh	17.82	81.39	Sukma(06)	LGD/GC/ KGBO		41.50	43.00	44.91	8/18/2018		3 days advisory Forecast (CWC BETA Model)	
276	Kunavaram	Godavari/ Godavari	Kunavaram/ Khammam/ Andhra Pradesh	17.57	81.25	Perur (12-18)	LGD/GC/ KGBO	Telangana	37.74	39.24	51.30	1986	Wireless	Conventional	
277	Rajahmundry GNV Railway Bridge	Godavari/ Godavari	Rajahmundry/ East Godavari/ Andhra Pradesh	17.01	81.77	Koida (15-18)	LGD/GC/ KGBO	Coastal Andhra Pradesh	17.68	19.51	20.48	1986	Wireless/ Telemetry	Conventional	
278	Dowlaiswaram	Godavari/ Godavari	Dowlaiswaram/ East Godavari/ Andhra Pradesh	16.94	81.78	Koida (15-21)	LGD/GC/ KGBO	Coastal Andhra Pradesh	14.25	16.08	18.36	1986	Wireless/ Telemetry	Conventional	
279	Atreyapuram	Godavari/Godavari	Atreyapuram/East Godavari/Andhra Pradesh	16.81	81.81	Dowlaisweram(3)	LGD Hyd/GC/KGBO	Coastal Andhra Pradesh	13.5	15	14.16	2020		3 days advisory Forecast (CWC BETA Model)	
280	Koyna Dam	Koyna	Satara/Maharashtra	17.4	73.75	Mahabaleshwar(12) Nawaja(01-05) Koyna (01-05)	UKD/KCC/KGBO		FRL-659.43				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
281	Warana Dam	Warana	Kolhapur/Maharashtra	17.13	73.85	Warana (01-05)	UKD/KCC/KGBO		FRL-626.90				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
282	Arjunwad	Krishna/Krishna	Arjunwad/ Kolhapur/ Maharashtra	16.78	74.63	Kowad (24) Samdoli (12)	UKD/KCC/ KGBO		539.20	540.70	544.35	2019	Phone	Conventional	
283	Hippargi Barrage	Krishna/Krishna	Bagalkot/Karnataka	16.55	75.16	Kurunwad(16-27) Sadalga(16-27)	UKD/KCC/KGBO		FRL-531.40				Phone	Conventional	
284	Hidkal Dam	Ghatprabha/Krishna	Belagavi/Karnataka	16.14	74.64		CD Bang/MSO		FRL-662.94						
285	Almatti Dam	Krishna/ krishna	Almatti Dam/B**agalkot**/ Karnataka	16.33	75.88	Kurundwad (33-54) Sadalga (33-54) Gokak (21-30)	LKD/KCC/ KGBO	North Interior Karnataka	519.60				Wireless	Conventional	
286	Malaprabha Dam	Malaprabha	Belgum/Karnataka	15.82	75.09		CD Bang/MSO		FRL-633.83						
287	Narayanpur Dam	Krishna/ krishna	Narayanpur Dam/ Yadgir/ Karnataka	16.20	76.36	Almatti Dam (09-18) Cholachguda(12-24)	LKD/KCC/ KGBO	North Interior Karnataka	492.25				Wireless	Conventional	
288	Veer Dam	Nira/Krishna	Satara/Maharashtra	18.12	74.09	Niradeoghar(12) Bhatgar(12)	UKD/KCC/KGBO		FRL-579.85				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
289	Ujjani Dam	Bhima/ Krishna	Solapur/Maharashtra	18.07	75.12	Phulgaon(24) Dhond(12)	UKD/KCC/KGBO		FRL-496.83				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
290	Deongaon Bridge	Bhima/ Krishna	Afzalpur/ Gulbarga/ Karnataka	17.17	76.33	Takli (12-27) Wadakbal (15-27)	LKD/KCC/ KGBO	North Interior Karnataka	402.00	404.50	409.00	2020	Wireless/ Telemetry	Conventional	
291	Priyadharshini Jurala Project	Krishna/ krishna	Mahbubnagar/ Telangana	16.33	77.70	Huvinhedgi (12-30) Yadgir (09-30) Deosugur (03-06)	LKD/KCC/ KGBO	Telangana	318.52				Wireless	Conventional	

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											(m)	Year			
292	Upper Tunga	Tungabhadra/ Krishna	Shimoga/Krishna	13.84	75.52		CD Bangluru/C&SRC/ C&SRO Coimbtore	South interior Karnataka, Shimoga	FRL-588.24						
293	Bhadra Dam	Tungabhadra/ Krishna	Tarikere/Chikmagalur/Karnataka	13.7	75.63		CD Bangluru/C&SRC/ C&SRO Coimbtore	Coastal Karnataka, Lakkavalli	FRL-657.75						
294	Tungabhadra Dam	Tungabhadra/ Krishna	Hospet/ Bellary/ Karnataka	15.26	76.34	Harlahalli (12-27) Marol (12-27)	LKD/KCC/ KGBO	South Interior Karnataka	497.74				Wireless	Conventional	
295	Singatlur Barrage	Tungabhadra/Krishna	Gadag/Karnataka	15.03	75.83	Harlahalli(10-20) Marol(02-08)	LKD/KCC/ KGBO		FRL-507.00				Phone	Conventional	
296	Mantralayam	Tungabhadra	Mantralayam/ Kurnool/ Andhra Pradesh	15.95	77.43	Ollenur (18-30) T Ramapuram (09-18)	LKD/KCC/ KGBO	Rayalaseema	310.00	312.00	318.77	2009	Wireless/ Telemetry	Conventional	
297	Sunkesula Barrage	Tungabhadra/Krishna	C.Belagal/Kurnool/ Andhra Pradesh	15.88	77.83	Mantralayam (06-09)	LKD/KCC/ KGBO	Rayalaseema	FRL-292.00					Conventional	
298	Kurnool	Tungabhadra/ Krishna	Kurnool/Kurnool/ Andhra Pradesh	15.82	78.03	Mantralayam(06-15) Sunkesula Barrage (03-12)	LKD/KCC/ KGBO	Rayalaseema	273	274	281.23	02.10.09	Wireless	Conventional	
299	Srisailam Dam	Krishna/ krishna	Srisailam/ Kurnool/ Andhra Pradesh	16.08	78.90	Mantralayam (12-30) Krishna Agraharam (09-24)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	269.75				Wireless	Conventional	
300	Musi Dam	Musi/Krishna	Nalgonda/Telengana	17.23	79.52	Valigonda(10-18) Anantaram(06-12)	LKD/KCC/ KGBO		FRL-196.60				Phone	Conventional	
301	Dr KLRS Pulichintala Dam	Krishna/Krishna	Bellamkonda/Guntur/Andhra Pradesh	16.75	80.05	NS Dam Release(09-24) Halia(03-06) Dhmercherla(06-12)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	FRL-53.34					Conventional	
302	Prakasam Barrage	Krishna/ krishna	Vijayawada/ Krishna/ Andhra Pradesh	16.53	80.61	Wadenapalli (09-21) Madhira (09-15) Polampally (06-18) Paleru Bridge (09-18)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	17.31				Wireless	Conventional	
303	Avanigadda	Krishna/ krishna	Krishna/Andhra Pradesh	16.02	80.91	Prakasam Barrage (03-09) Vijayawada	LKD/KCC/ KGBO	Coastal Andhra Pradesh	9.00	11.00	11.57	2009	Telemetry	Conventional	
304	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	
305	Nellore Anicut	North Pennar	Nellore/ Nellore/ Andhra Pradesh	14.47	79.99	Chennur (18) Nandipally (18) Somasila Project (09)	HD/SR	Coastal Andhra Pradesh	15.91	17.28	19.57	2021	Wireless	Conventional	
306	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	
307	Chembarampakkam	Adyar/EFRB Pennar Cauvery	Chenglepet/Kancheepuram/ Tamilnadu	13.01	80.08		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	26.03						
308	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						
309	Gomukhi	Vellar/EFRB Pennar Cauvery	Kallakurichi/Villupuram/Tamilnadu	11.8	78.81		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-183.18						
310	Wellington Dam	Vellar/EFRB Pennar Cauvery	Thittakudi/Cuddalore/Tamilnadu	11.4	79.09		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-72.54						
311	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	

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											(m)	Year			
312	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	
313	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	
314	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	
315	Mettur Dam	Cauvery/Cauvery	Mettur/Salem/Tamilnadu	11.8	77.8		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-240.79					Rainfall Runoff Model	
316	Bhawanisagar Dam	Bhavani/Cauvery	Sathyamangalam/Erode/Tamilnadu	11.47	77.1		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-280.42					Rainfall Runoff Model	
317	Savandapur	Bhavani/Cauvery	Gobichettipalayam/Tamilnadu	11.52	77.51		SRD Coim/C&SRC Bang/C & SRO Coimb		184.5	185.5	187.75	2018			
318	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	128.14	2018			
319	Kodaganar Dam	Kodaganar/Cauvery	Dindugul/Tamilnadu	10.59	77.97		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	FRL-200.25						
320	Musiri	Cauvery/Cauvery	Musiri/Tiruchirapalli/Tamilnadu	10.93	78.43		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	82.12	83.12	86.98	2005			
321	Upper Anicut	Cauvery/Cauvery	Thiruchirapalli/ Tamilnadu	10.88	78.57		SRD Coim/C&SRC Bang/C & SRO Coimb		FRL-74.40						
322	Grand Annicut	Cauvery/Cauvery	Thanjavur/ Tamilnadu	10.83	78.81		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-59.21					Rainfall Runoff Model	
323	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	
324	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			
325	Kumbidi	Bharathapuzha/WFR Tapi to Tadri	Palakkad/Kerala	10.85	76.02		SWRD/CSRO		8.2	9.2	11.27	2018			
326	Idduki Dam	Periyar/WFR Tadri to Kanyakumari	Idduki/Kerala	9.84	76.97		SWRD/CSRO		FRL-732.62						
327	Edamalayar Dam	Edamalayar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.22	76.7		SWRD/CSRO		FRL-169.00						
328	Neeleswaram	Periyar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.18	76.49		SWRD/CSRO		9	10	12.4	2018			
329	Malakkara	Pamba/WFR Tadri to Kanyakumari	Pathanamthitta	9.32	76.66		SWRD/CSRO		6	7	9.58	2018			
330	Polavaram	Godavari/Godavari	West Godavari/ Andhra Pradesh	17.29	81.64		LGD Hyd/GC/KGBO								
331	Laxmi Barrage	Godavari/Godavari	Bhupalpally/Telangana	18.7	80.08		UGD/GC/KGBO		100						
332	PVNR Kanthapally Project	Godavari/Godavari	Warangal/Telangana	18.58	80.39		UGD/GC/KGBO		FRL-83.00						
333	Madikhera(Atal Sagar)	Sindh/Ganga	Shivpuri/Madhya Pradesh	25.55	77.85		LYD/HOCN/ YBO		FRL-346.25						

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2022												
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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	1589.96	1590.88	1595.00	06/09/2014	**1591.94**	**22/06/2022 20**	2	1	50.00
2	Jhelum	Rammunshibagh	Jammu & Kashmir	1584.87	1585.48	1588.99	08/09/2014	**1586.18**	**23/06/2022 03**	4	1	25.00
3	Jhelum	Safapora	Jammu & Kashmir	1579.36	1579.66	1582.10	09/09/2014	**1580.32**	**23/06/2022 18**	8	5	62.50
	2 a. Ganga Basin											
4	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	537.90	17/06/2013	**535.34**	**05/08/2022 11**	4	2	50.00
5	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.92	26/06/2015	**801.2**	**12/07/2022 05**	0	0	-
6	Ganga	Rishikesh	Uttarakhand	339.50	340.50	341.72	05/09/1995	**339.5**	**20/08/2022 21**	0	0	-
7	Ganga	Haridwar	Uttarakhand	293.00	294.00	296.30	19/09/2010	**294.68**	**20/08/2022 06**	4	1	25.00
8	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	199.90	23/09/2010	**198.65**	**09/08/2022 16**	24	24	100.00
9	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.79	23/10/2021	**162.73**	**24/08/2022 01**	112	108	96.43
10	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	138.14	26/09/2010	**137.44**	**26/08/2022 03**	59	59	100.00
11	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	192.88	21/09/2010	**190.31**	**13/10/2022 21**	6	6	100.00
12	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	162.88	06/08/1978	**160.97**	**13/10/2022 07**	0	0	-
13	Ganga	Dabri	Uttar Pradesh	136.30	137.30	139.70	28/09/1983	**137.66**	**16/10/2022 05**	14	13	92.86
14	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	126.78	27/09/2010	**125.48**	**16/10/2022 06**	7	7	100.00
15	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	124.49	28/09/2010	**123.49**	**16/10/2022 22**	12	12	100.00
16	Ganga	Kanpur	Uttar Pradesh	112.00	113.00	114.08	29/09/2010	**112.47**	**17/10/2022 09**	7	7	100.00
17	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	99.84	03/08/1973	**98.43**	**18/10/2022 09**	3	3	100.00
18	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	87.98	08/09/1978	**85.93**	**29/08/2022 06**	8	6	75.00
19	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	384.60	05/09/1995	**383**	**26/09/2022 04**	1	0	0.00
20	Yamuna	Karnal Bridge	Haryana	248.80	249.50	250.07	17/06/2013	**248.3**	**27/09/2022 04**	1	0	0.00
21	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	232.75	18/06/2013	**231.16**	**27/09/2022 11**	3	2	66.67
22	Sahibi	Dhansa	NCT Delhi	211.44	212.44	213.58	06/08/1977	**211.05**	**09/10/2022 08**	**0**	0	-
23	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	207.49	06/09/1978	**206.59**	**28/09/2022 06**	43	29	67.44
24	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	169.73	08/09/1978	**165.46**	**30/09/2022 17**	8	5	62.50
25	Yamuna	Agra	Uttar Pradesh	151.40	152.40	154.76	09/09/1978	**150.3**	**1/10/2022 03**	0	0	-
26	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	126.13	11/09/1978	**122.1**	**27/08/2022 08**	8	4	50.00
27	Chambal	Manderial	Rajasthan	164.00	165.00	169.96	23/08/1996	**170.05**	**25/08/2022 06**	3	1	33.33
28	Chambal	Dholpur	Rajasthan	129.79	130.79	145.54	23/08/1996	**146.57**	**25/08/2022 19**	30	14	46.67
29	Chambal	Kota City	Rajasthan	239.00	242.00	248.68	16/09/2019	**245.8**	**23/08/2022 16**	15	4	26.67
30	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	118.51	06/08/2021	**117.98**	**27/08/2022 10**	15	11	73.33
31	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.98	25/08/1996	**112.93**	**27/08/2022 14**	17	11	64.71
32	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	108.59	12/09/1983	**107.51**	**27/08/2022 05**	15	13	86.67
33	Betwa	Mohana	Uttar Pradesh	121.66	122.66	133.35	11/09/1983	**122.03**	**23/08/2022 18**	4	2	50.00
34	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	108.67	12/09/1983	**106.92**	**26/08/2022 22**	12	10	83.33
35	Ken	Banda	Uttar Pradesh	103.00	104.00	113.29	07/07/2005	**105.67**	**24/08/2022 04**	9	7	77.78
36	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	105.16	06/09/1978	**102.83**	**27/08/2022 19**	17	13	76.47

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Sl.No.	Name of the river	Name of FF site	Name of State	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2022				
						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
37	Yamuna	Naini	Uttar Pradesh	83.74	84.74	87.99	08/09/1978	85.9	29/08/2022 17	16	14	87.50
38	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	88.03	08/09/1978	85.1	29/08/2022 15	6	4	66.67
39	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	80.34	09/09/1978	78.11	30/08/2022 02	6	6	100.00
40	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	73.90	09/09/1978	72.14	29/08/2022 21	7	6	85.71
41	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	110.85	10/09/1971	106.16	30/10/2022 17	0	0	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	104.81	17/09/1982	99.31	20/09/2022 03	0	0	-
43	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	77.74	22/09/1971	71.13	14/10/2022 14	0	0	-
44	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	65.22	09/09/1978	64.39	31/08/2022 01	13	12	92.31
45	Ganga	Buxar	Bihar	59.32	60.32	62.09	01/05/1905	60.69	01/09/2022 00	12	11	91.67
46	Ganga	Ballia	Uttar Pradesh	56.62	57.62	60.39	25/08/2016	59.76	31/08/2022 04	35	26	74.29
47	Ghaghra	Elgin Bridge	Uttar Pradesh	105.07	106.07	107.62	18/08/2014	107.36	12/10/2022 04	101	101	100.00
48	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	94.01	11/10/2009	93.98	13/10/2022 04	97	95	97.94
49	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	132.37	15/08/2014	131.29	08/10/2022 18	10	10	100.00
50	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	105.54	15/08/2017	106.07	10/10/2022 07	43	42	97.67
51	Rapti	Bansi	Uttar Pradesh	83.90	84.90	85.95	03/09/2021	86.27	16/10/2022 04	25	25	100.00
52	Rapti	Gorakpur_Birdghat	Uttar Pradesh	73.98	74.98	77.54	23/08/1998	76.11	17/10/2022 07	27	27	100.00
53	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	66.00	28/08/1998	65.68	15/10/2022 05	81	80	98.77
54	Ghaghra	Darauli	Bihar	59.82	60.82	61.74	29/08/1998	61.82	15/10/2022 17	75	75	100.00
55	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	58.01	18/09/1983	57.96	16/10/2022 05	30	30	100.00
56	Ghaghra	Chhapra	Bihar	52.68	53.68	54.59	03/09/1982	52.2	01/09/2022 05	0	0	-
57	Sone	Inderpuri	Bihar	107.20	108.20	108.85	23/08/1975	103.27	24/08/2022 00	0	0	-
58	Sone	Koelwar	Bihar	54.52	55.52	58.88	20/07/1971	52.65	02/09/2022 05	0	0	-
59	Sone	Maner	Bihar	51.00	52.00	53.79	10/09/1976	52.57	01/09/2022 00	23	23	100.00
60	Ganga	Patna Dighaghat	Bihar	49.45	50.45	52.52	23/08/1975	50.77	01/09/2022 07	22	22	100.00
61	Gandak	Khadda	Uttar Pradesh	95.00	96.00	97.50	23/07/2002	96.32	07/10/2022 14	198	196	98.99
62	Gandak	Chatia	Bihar	68.15	69.15	70.04	26/07/2002	68.13	09/10/2022 17	0	0	-
63	Gandak	Dumariaghat	Bihar	61.22	62.22	64.36	24/07/2020	63.52	09/10/2022 09	131	127	96.95
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.46	24/07/2020	54.92	10/10/2022 05	29	29	100.00
65	Gandak	Hazipur	Bihar	49.32	50.32	50.93	01/05/1905	49.61	01/09/2022 00	5	5	100.00
66	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.52	20/08/2016	49.6	01/09/2022 07	54	53	98.15
67	PunPun	Sripalpur	Bihar	49.60	50.60	53.91	18/09/1976	49.64	27/08/2022 06	2	2	100.00
68	Ganga	Hathidah	Bihar	40.76	41.76	43.52	16/08/2021	42.7	02/09/2022 02	56	55	98.21
69	Ganga	Munger	Bihar	38.33	39.33	40.99	19/09/1976	39.1	04/09/2022 01	16	15	93.75
70	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	67.09	30/07/1975	61.42	04/08/2022 04	0	0	-
71	Burhigandak	Ahirwalia	Bihar	58.62	59.62	61.17	02/06/2014	57.03	05/08/2022 07	0	0	-
72	Burhi Gandak	Muzaffarpur	Bihar	51.53	52.53	54.29	15/08/1987	50.59	07/08/2022 03	0	0	-
73	Burhi Gandak	Samastipur	Bihar	45.02	46.02	49.38	15/08/1987	43.97	08/08/2022 05	0	0	-
74	Burhi Gandak	Rosera	Bihar	41.63	42.63	46.56	02/08/2020	41.47	08/08/2022 08	0	0	-
75	Burhi Gandak	Khagaria	Bihar	35.58	36.58	39.22	29/05/1905	37.76	04/09/2022 01	58	57	98.28

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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
76	Ganga	Bhagalpur	Bihar	32.68	33.68	34.86	18/08/2021	33.94	02/09/2022 23	33	32	96.97
77	Ganga	Kahalgaon	Bihar	30.09	31.09	32.87	17/09/2003	32.05	04/09/2022 01	61	61	100.00
78	Kosi	Basua	Bihar	46.75	47.75	49.24	13/08/2017	49.24	02/08/2022 19	290	287	98.97
79	Bagmati	Dheng Bridge	Bihar	70.00	71.00	73.00	13/08/2017	71.4	29/06/2022 23	36	30	83.33
80	Bagmati	Runisaidpur	Bihar	54.00	55.00	58.15	14/08/2017	56.52	03/08/2022 12	62	55	88.71
81	Bagmati	Benibad	Bihar	47.68	48.68	50.01	12/07/2004	49.81	03/08/2022 15	114	113	99.12
82	Adhwara Group	Kamtaul	Bihar	49.00	50.00	52.99	12/08/1987	49.92	02/07/2022 08	12	12	100.00
83	Adhwara Group	Ekmighat	Bihar	45.94	46.94	49.52	12/07/2004	45.62	10/09/2022 04	0	0	-
84	Bagmati	Hayaghat	Bihar	44.72	45.72	48.96	14/08/1987	44.22	06/08/2022 16	0	0	-
85	Kamla Balan	Jainagar	Bihar	66.75	67.75	71.35	21/09/2016	68.9	29/06/2022 22	428	424	99.07
86	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	53.11	14/07/2019	51.7	30/06/2022 05	348	347	99.71
87	Adhwara	Sonebarsha	Bihar	80.85	81.85	83.20	03/07/1999	81.38	29/06/2022 18	1	1	100.00
88	Kosi	Baltara	Bihar	32.85	33.85	36.40	15/08/1987	34.99	05/08/2022 05	121	116	95.87
89	Kosi	Kursela	Bihar	29.00	30.00	32.10	07/09/1982	31.16	04/09/2022 21	77	75	97.40
90	Ganga	Sahibgunj	Jharkhand	26.25	27.25	30.91	20/08/1998	28.23	19/10/2022 08	71	71	100.00
91	Mahananda	Taibpur	Bihar	65.00	66.00	67.22	28/07/2016	67.26	29/06/2022 06	55	54	98.18
92	Mahananda	Dhengraghat	Bihar	34.65	35.65	38.20	14/08/2017	36.73	30/06/2022 14	55	55	100.00
93	Mahananda	Jhawa	Bihar	30.40	31.40	34.07	14/08/2017	32.44	01/07/2022 06	79	76	96.20
94	Parwan	Araria	Bihar	46.00	47.00	49.40	14/08/2017	48.26	01/07/2022 14	144	142	98.61
95	Ganga	Farakka	West Bengal	21.25	22.25	25.14	07/09/1998	23.23	05/09/2022 09	113	111	98.23
96	Mayurakshi	Narayanpur	West Bengal	26.99	27.99	29.69	27/09/1995	24.14	16/09/2022 21	0	0	-
97	Ajoy	Gheropara	West Bengal	38.42	39.42	43.94	27/09/1978	35.9	30/09/2022 04	0	0	-
98	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.60	28/07/2017	11.16	07/10/2022 09	0	0	-
99	Kangsabati	Mohanpur	West Bengal	24.73	25.73	29.87	02/09/1978	21.92	21/08/2022 15	0	0	-
	2 b Brahmaputra Basin											
100	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00			269.94	18/06/2022 08	0	0	-
101	siang	Passighat	Arunachal Pradesh	152.96	153.96	157.54	11/06/2000	152.9	28/06/2022 11	0	0	-
102	Lohit	Dholla Bazaar	Assam	127.27	128.27	130.07	22/09/2012	126.53	18/06/2022 06	0	0	-
103	Brahmaputra	Dibrugrah	Assam	104.70	105.70	106.48	03/09/1998	105.56	28/06/2022 19	103	103	100.00
104	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	146.60	07/10/1979	144.56	18/06/2022 11	0	0	-
105	Burhidihing	Naharkatia	Assam	119.40	120.40	122.69	17/06/1973	118.96	16/05/2022 20	0	0	-
106	Burhidihing	Khwong	Assam	101.11	102.11	104.16	02/09/2015	103.35	01/07/2022 12	44	44	100.00
107	Desang	Nanglamoraghat	Assam	93.46	94.46	96.49	06/09/1998	95.36	04/07/2022 18	78	78	100.00
108	Dikhow	Shivsagar	Assam	91.40	92.40	94.24	22/06/2020	92.39	04/07/2022 15	13	13	100.00
109	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.37	11/07/1991	86.6	18/06/2022 23	124	123	99.19
110	Subansiri	Choldhowaghat	Assam	99.43	100.43	101.31	27/07/1972	96.33	17/06/2022 12	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
111	Ranganadi	N H Crossing Ranganad	Assam	93.81	94.81	95.92	02/07/1979	94.58	17/06/2022 16	20	19	95.00
112	Subansiri	Badatighat	Assam	81.53	82.53	86.21	28/07/1972	82.57	19/06/2022 07	38	38	100.00
113	Dhansiri (S)	Golaghat	Assam	88.50	89.50	92.45	11/10/1986	88.34	18/05/2022 00	0	0	-
114	Dhansiri (S)	Numaligarh	Assam	77.42	78.42	80.16	02/08/2018	78.22	24/07/2022 19	74	74	100.00
115	Jiabharali	Jiabharali_NTX	Assam	77.00	78.00	78.50	26/07/2007	78.1	17/06/2022 07	271	271	100.00
116	Brahmaputra	Tezpur	Assam	64.23	65.23	66.59	27/08/1988	65.89	01/07/2022 07	70	70	100.00
117	Kopilli	Kampur	Assam	59.50	60.50	61.79	20/07/2004	62.2	18/06/2022 14	56	55	98.21
118	Kopilli	Dharmatul	Assam	55.00	56.00	58.09	21/07/2004	58	22/06/2022 03	85	85	100.00
119	Brahmaputra	Guwahati	Assam	48.68	49.68	51.46	21/07/2004	49.95	20/06/2022 10	19	19	100.00
120	Puthimari	Puthimari _NHX	Assam	51.31	52.31	55.08	31/08/2008	54.49	17/06/2022 12	31	28	90.32
121	Pagladiya	Pagladia_NTX	Assam	51.75	52.75	55.45	08/07/2004	53.88	17/06/2022 08	35	34	97.14
122	Manas	Mathanguri	Assam	98.10	99.10	100.28	13/10/1973	96.2	18/06/2022 07	0	0	-
123	Beki	Beki NHX	Assam	44.10	45.10	46.20	04/08/2000	45.7	18/06/2022 12	191	191	100.00
124	Manas	Manas NHX	Assam	47.81	48.42	50.08	15/09/1984	49.32	16/06/2022 20	41	41	100.00
125	Brahmaputra	Goalpara	Assam	35.27	36.27	37.43	31/07/1954	36.64	20/06/2022 22	39	39	100.00
126	Gaurang	Kokrajhar	Assam	41.85	42.85	43.60	20/08/2015	43.07	16/06/2022 13	31	30	96.77
127	Brahmaputra	Dhubri	Assam	27.62	28.62	30.37	18/07/2019	29.6	21/06/2022 01	111	111	100.00
128	Sankosh	Golakganj	Assam	28.94	29.94	30.95	08/09/2007	30	18/06/2022 17	78	78	100.00
129	Raidak-I	Tufanganj	West Bengal	34.22	35.30	36.50	12/08/2017	35.27	17/06/2022 18	18	15	83.33
130	Jaldhaka	NH-31	West Bengal	80.00	80.90	81.33	28/08/1972	80.3	01/09/2022 13	26	23	88.46
131	Torsa	Hasimara	West Bengal	116.30	116.90	118.50	13/07/1996	117.1	18/06/2022 02	2	1	50.00
132	Torsa	Ghughumari	West Bengal	39.80	40.41	41.46	03/08/2000	40.56	18/06/2022 11	29	27	93.10
133	Jaldhaka	Mathabhanga	West Bengal	47.70	48.20	49.85	07/09/2007	47.98	29/06/2022 05	4	2	50.00
134	Tista	Domohani	West Bengal	85.65	85.95	89.30	14/10/1968	86.18	01/08/2022 07	92	82	89.13
135	Tista	Mekhliganj	West Bengal	65.45	65.95	66.62	20/10/2021	65.64	02/08/2022 02	4	4	100.00
136	Teesta	Malli Bazaar	Sikkim	223.00	224.00	225.25		217.25	12/10/2022 07	0	0	-
137	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	353.20		348.95	01/09/2022 14	0	0	-
138	Teesta	Singtam	Sikkim	377.07	377.57	379.17		375.09	23/08/2022 20	0	0	-
	2 c Barak & Others											
139	Barak	APGhat	Assam	18.83	19.83	21.84	01/08/1989	21.59	21/06/2022 14	68	67	98.53
140	Katakhal	Matizuri	Assam	19.27	20.27	22.73	10/09/2007	22.49	21/06/2022 08	44	43	97.73
141	Kushiyara	Karimganj	Assam	13.94	14.94	16.57	10/06/2010	16.52	22/06/2022 20	85	85	100.00
142	Barak	Badarpurghat	Assam	15.85	16.85	18.48	11/09/2007	18.44	23/06/2022 08	82	81	98.78
143	Manu	Kailashar	Tripura	24.34	25.34	25.95	13/06/2018	23.49	24/08/2022 11	0	0	-
144	Gumti	Sonamura	Tripura	11.50	12.50	14.42	23/07/1993	12.01	20/06/2022	4	4	100.00
	3. Godavari Basin											-
145	Godavari	Nasik	Maharashtra	558.10	559.60	563.51	04/08/2019	558.91	12/07/2022 01	3	2	66.67
146	Godavari	Kopergaon	Maharashtra	490.90	493.68	499.17	22/05/1905	493.2	12/07/2022 20	33	25	75.76
147	Godavari	Gangakhed	Maharashtra	374.00	375.00	377.57	30/04/1905	370.98	19/09/2022 17	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
148	Godavari	Nanded	Maharashtra	353.00	354.00	357.10	06/08/2006	349.84	13/07/2022 18	0	0	-
149	Wainganga	Bhandara	Maharashtra	245.50	245.70	250.90	16/09/2005	248.38	16/08/2022 22	0	0	-
150	Wainganga	Pauni	Maharashtra	226.73	227.73	237.12	07/09/1994	229.35	17/08/2022 05	0	0	-
151	Wardha	Balharsha	Maharashtra	171.50	174.00	176.45	14/08/1986	173.67	20/07/2022 22	24	21	87.50
152	Wardha	Sirpur Town	Telangana	159.95	160.95	161.34	18/08/2018	162.57	15/07/2022 04	32	26	81.25
153	Godavari	Kaleswaram	Telangana	103.50	104.75	107.05	15/08/1986	108.19	15/07/2022 00	10	8	80.00
154	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	544.68	09/07/1973	542.9	16/08/2022 11	18	17	94.44
155	Godavari	Eturunagaram	Telangana	73.32	75.82	77.66	24/08/1990	77.11	15/07/2022 06	45	39	86.67
156	Godavari	Dummagudam	Telangana	53.00	55.00	60.25	15/08/1986	59.62	15/07/2022 18	47	42	89.36
157	Godavari	Bhadrachalam	Telangana	45.72	48.77	55.66	16/08/1986	54.34	16/07/2022 01	59	54	91.53
158	Sabari	Chinturu	Andhra Pradesh	41.50	43.00	44.91	18/08/2020	49.4	16/07/2022 18	34	29	85.29
159	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	51.30	16/08/1986	48.87	16/07/2022 16	68	68	100.00
160	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	20.48	16/08/1986	19.38	17/07/2022 07	11	11	100.00
161	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	18.36	16/08/1986	17.29	17/07/2022 02	57	57	100.00
162	Godavari	Atreyapuram	Andhra Pradesh	13.50	15.00	14.16	18/08/2020	14.12	17/07/2022 03	5	5	100.00
	4. Krishna Basin											
163	Krishna	Arjunwad	Maharashtra	539.20	540.70	544.35	09/08/2019	536.74	13/08/2022 06	0	0	-
164	Bhima	Deongaon	Karnataka	402.00	404.50	409.00	18/10/2020	403.43	21/10/2022 00	9	5	55.56
165	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	318.77	02/10/2009	312.45	09/09/2022 03	89	72	80.90
166	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	281.23	02/10/2009	273.5	08/09/2022 20	14	9	64.29
167	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	11.87	05/10/2009	7.6	18/10/2022	0	0	-
	5. Cauvery Basin											
168	Cauvery	Musiri	Tamilnadu	82.12	83.12	86.98	25/11/2005	84.3	05/08/2022 18	108	101	93.52
169	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	128.14	17/08/2018	127.83	05/08/2022 07	65	58	89.23
170	Bhavani	Savandapur	Tamilnadu	184.50	185.50	187.75	17/08/2018	184.88	06/08/2022 11	1	1	100.00
	6. Subarnarekha											
171	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	129.82	12/10/1973	125.36	21/08/2022 06	4	2	50.00
172	Subernarekna	Rajghat	Odisha	9.45	10.36	12.69	19/06/2008	11.9	22/08/2022 04	3	3	100.00
173	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	7.31	22/09/2021	6.97	21/08/2022 00	87	83	95.40
174	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	9.50	12/10/1973	7.58	20/08/2022 20	4	4	100.00
	7. Brahmani and Baitarani											
175	Baitarni	Anandpur	Odisha	37.44	38.36	41.35	23/09/2011	39.12	21/08/2022 03	7	4	57.14
176	Baitarni	Akhuapada	Odisha	17.83	17.83	21.95	16/08/1960	19.02	21/08/2022 15	11	9	81.82
177	Brahmani	Jenapur	Odisha	22.00	23.00	24.78	20/08/1975	21.23	25/08/2022 18	0	0	-
	8. Mahanadi Basin											
178	Mahanadi	Naraj	Odisha	25.41	26.41	27.61	31/08/1982	27.49	17/08/2022 08	17	16	94.12
179	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	13.11	11/09/2011	12.06	17/08/2022 06	9	8	88.89
180	Mahanadi	Nimapara	Odisha	9.85	10.76	11.60	31/08/1982	10.58	17/08/2022 13	8	8	100.00
	9. Pennar Basin											

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2022												
Sl.No.	Name of the river	Name of FF site	Name of State	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2022		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
181	Pennar	Nellore	Andhra Pradesh	15.91	17.28	19.57	20/11/2021	12.4	15/10/2022 22	0	0	-
	10. Mahi Basin											
182	Mahi	Wanakbori	Gujarat	71.93	74.98	76.10	12/08/2006	71.17	24/08/2022 01	0	0	-
	11. Sabarmati Basin											
183	Sabarmati	Ahmedabad	Gujarat	44.09	45.34	47.45	19/08/2006	42.8	24/08/2022 20	0	0	-
	12. Narmada Basin											
184	Naramada	Mandla	Madhya Pradesh	437.20	437.80	439.40	15/07/1974	438.5	22/08/2022 01	19	19	100.00
185	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	301.33	27/08/1972	294.85	22/08/2022 21	23	23	100.00
186	Naramada	Garudeswar	Gujarat	30.48	31.09	41.65	06/09/1970	25.7	24/08/2022 21	0	0	-
187	Naramada	Bharuch	Gujarat	6.71	7.31	12.65	07/09/1970	8.52	25/08/2022 06	23	23	100.00
	13. Tapi Basin											
188	Tapi	Surat	Gujarat	8.50	9.50	12.50	09/08/2006	6.6	20/07/2022 10	0	0	-
	14. West Flowing rivers from Tapi to Tadri											
189	Damanganga	Vapi Town	Gujarat	18.20	19.20	23.76	03/08/2004	17.55	12/07/2022 04	0	0	-
190	Damanganga	Daman	Daman & Diu	2.60	3.40	4.00	03/08/2004	2.5	16/09/2022 00	0	0	-
	16. East flowing rivers between Mahanadi and Pennar											
191	Rushikuluya	Purushottampur	Odisha	15.83	16.83	19.65	04/11/1990	15.79	06/10/2022 02	0	0	-
192	Vamsadhara	Gunupur	Odisha	83.00	84.00	88.75	17/09/1980	83.97	14/08/2022 19	10	7	70.00
193	Vamsadhara	Kashinagar	Odisha	54.10	54.60	58.93	18/09/1980	55.84	14/08/2022 22	33	29	87.88
194	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	14.53	12/05/1990	10.77	15/08/2022 13	19	15	78.95
	17 East flowing rivers between Pennar and Kanyakumari											
195	Vaigai	Madurai	Tamilnadu	131.50	132.50	134.76	17/11/1997	131.7	18/10/2022 14	4	3	75.00
	18. West flowing rivers of Kutch and Saurashtra including Luni											
196	Banas	Abu Road	Rajasthan	258.00	259.00	265.40	31/08/1973	258.3	17/08/2022 18	0	0	-
	19. West Flowing River Tadri to Kanyakumari											
197	Periyar	Neeleswaram	Kerala	9.00	10.00	12.40	15/08/2018	7.32	02/08/2022 06	0	0	-
198	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	11.27	17/08/2018	7.9	17/07/2022 05	0	0	-
199	Pamba	Malakkara	Kerala	6.00	7.00	9.58	16/08/2018	6.46	04/08/2022 20	3	1	33.33
								Total Level Forecasts		***6779***	***6476***	95.53
								Total Inflow Forecasts		**4779**	**4369**	91.42
								Total Forecasts		**11558**	**10845**	93.83

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2022									
Sl.No.	Name of the river	Name of FF site	Name of State	FRL/PL (m)	Maximum Level 2022				
					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
	1. Indus Basin								
	2 a. Ganga Basin								
1	Ganga	Dharmanagri Barrage	Uttar Pradesh	220.45	**219.9**	**05/07/2022 08**	102	89	87.25
2	Ganga	Narora Barrage	Uttar Pradesh	179.07	**179.07**	**19/05/2022 08**	19	17	89.47
3	Ramganga	Kalagarh Dam	Uttarakhand	365.3	**359.86**	**09/12/2022 08**	0	0	-
4	Yamuna	Tajewala Weir	Haryana	334	**334.32**	**03/07/2022 09**	0	0	-
5	Chambal	Gandhisagar Dam	Madhya Pradesh	399.9	**399.67**	**06/10/2022 08**	8	3	37.50
6	Chambal	Rana Pratap Sagar	Rajasthan	352.81	**352.81**	**30/09/2022 07**	5	4	80.00
7	Chambal	Kota Barrage	Rajasthan	260.3	**260.36**	**24/07/2022 14**	0	0	-
8	Banas	Bisalpur Dam	Rajasthan	315.50	**315.5**	**26/08/2022 08**	0	0	-
9	Kalisindh	Kalisindh Dam	Rajasthan	316	**316**	**03/10/2022 08**	26	8	30.77
10	Parwan	Parwan Dam	Rajasthan	308.8	NA		0	0	-
11	Gambhiri	Gambhiri Dam	Rajasthan	431.90	**433.4**	**15/08/2022 08**	0	0	-
12	Gambhiri	Panchana Dam	Rajasthan	258.62	**259.95**	**31/08/2022 08**	0	0	-
13	Mej	Gudha Dam	Rajasthan	305.87	**305.99**	**02/09/2022 08**	0	0	-
14	Parwati	Parwati Dam	Rajasthan	308.15	NA		0	0	-
15	Betwa	Rajghat Dam	Madhya Pradesh	371	**371**	**09/09/2022 06**	25	18	72.00
16	Betwa	Matatilia Dam	Uttar Pradesh	308.46	**308.46**	**17/09/2022 08**	29	22	75.86
17	Sharda	Banbasa	Uttarakhand	222.96	**222.9**	**02/06/2022 08**	6	6	100.00
18	Ghaghra	Katerniaghat Dam	Uttar Pradesh	136.8	**1550**	**04/08/2022 00**	**70**	70	100.00
19	Sone	Bansagar Dam	Madhya Pradesh	341.65	**341.64**	**23/09/2022 08**	16	4	25.00
	Sindh	Madikhera(Atal Sagar)	Madhya Pradesh	346.25	**346.25**	**15/09/2022 08**	8	4	50.00
20	Rihand	Rihand Dam	Uttar Pradesh	265.18	**261.61**	**23/10/2022 08**	16	1	6.25
21	Khoranadi	Annaraj Dam	Jharkhand	252.44	NA		0	0	-
22	Goda Nala	Bhairwa Dam	Jharkhand	356.70	NA		0	0	-
23	Sone	Indrapuri Barrage	Bihar	173	NA		0	0	-

24	Gandak	Gandak Barrage	Bihar	110.3	**110.09**	**07/10/2022 08**	0	0	-
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	74.69	**75.35**	**27/06/2022 08**	0	0	-
28	Mayurakshi	Massanjore Dam	Jharkhand	121.31	**115.55**	**16/10/2022 07**	2	2	100.00
29	Mayurakshi	Tilpara Barrage	West Bengal	62.79	**62.76**	**28/08/2022 07**	4	4	100.00
30	Ashra nadi	Sikatia Barrage	Jharkhand	170.10	**161.09**	**14/09/2022 12**	0	0	-
31	Damodar	Tenughat Dam	Jharkhand	268.83	**265.61**	**02/06/2022 05**	50	50	100.00
32	Barakar	Tilaiya Dam	Jharkhand	372.46	**367.35**	**22/10/2022 15**	0	0	-
33	Konar	Konar Dam	Jharkhand	427.93	**426.23**	**16/10/2022 06**	0	0	-
34	Damodar	Panchet Dam	Jharkhand	132.59	**129.59**	**13/11/2022 18**	65	63	96.92
35	Barakar	Maithon Dam	Jharkhand	150.88	**149.17**	**05/10/2022 09**	28	26	92.86
36	Damodar	Durgapur Barrage	West Bengal	64.47	**634.47**	**28/12/2022 03**	58	58	100.00
37	Anjanwa	Sundar Dam	Jharkhand	110.795	**109.7**	**18/06/2022 10**	**0**	0	-
38	Kangsabati	Hinglow Dam	West Bengal	97.84	**363.02**	**25/11/2022 08**	**0**	0	-
39	Kangsabati	Kangsabati Dam	West Bengal	134.11	**132.45**	**25/08/2022 20**	19	18	94.74
	2 b Brahmaputra Basin								
40	Teesta	Teesta-III HEP Dam Cl	Sikkim	1585	**15661**	**22/11/2022 12**	0	0	-
41	Teesta	Teesta V HEP Dam Sir	Sikkim	579	**5743.1**	**25/11/2022 22**	0	0	-
42	Rongpo	Rongpo Dam	Sikkim	913.8	**910.75**	**14/08/2022 03**	0	0	-
43	Rongli	Rongli Dam	Sikkim	913.8	**910.74**	**14/08/2022 04**	0	0	-
44	Rangit	Rangit-III HEP Dam	Sikkim	640	**639.12**	**26/11/2022 14**	0	0	-
	2 c Barak & Others								-
	3. Godavari Basin								-
45	Godavari	N M D Weir	Maharashtra	533.50	**553.44**	**27/05/2022 08**	0	0	-
46	Mula	Mula Dam	Maharashtra	552.3	**552.3**	**07/10/2022 06**	0	0	-
47	Godavari	Jaikwadi Dam	Maharashtra	463.91	**1522**	**18/11/2022 13**	12	8	66.67
48	Sindhpana	Manjlegaon	Maharashtra	431.80	**431.8**	**07/10/2022 06**	0	0	-
49	Puma	Yeldari Dam	Maharashtra	461.77	**461.77**	**10/09/2022 06**	0	0	-
50	Karanja	Karanja Dam	Karnataka	584.15	**584.09**	**04/11/2022 08**	0	0	-
51	Manjira	Singur Dam	Telangana	523.6	**523.6**	**12/10/2022 12**	1	1	100.00
52	Manjira	Nizamsagar Dam	Telangana	428.24	**1403.55**	**28/12/2022 13**	1	1	100.00
53	Godavari	Sriram Sagar	Telangana	332.54	**629.66**	**01/05/2022 08**	50	48	96.00
54	Kaddamvagu	Kaddam Dam	Telangana	213.21	**697.25**	**15/11/2022 08**	2	2	100.00

55	Godavari	Sripada Yellampally Da	Telangana	148.00	**148**	**02/11/2022 23**	59	57	96.61
56	Wainganga	Upper Wainganga Proj	Madhya Pradesh	519.38	**519.38**	**17/10/2022 08**	0	0	-
57	Pench	Totladoh Project	Maharashtra	490	**490**	**14/09/2022 08**	2	2	100.00
58	Wainganga	Goshikhurd Dam	Maharashtra	245.5	**244.5**	**11/10/2022 20**	22	22	100.00
59	Wardha	Upper Wardha Project	Maharashtra	342.5	**342.5**	**02/10/2022 20**	34	33	97.06
60	Penganga	Issapur/Upper Pengan	Maharashtra	441	**441**	**10/10/2022 08**	2	2	100.00
61	Godavari	Laxmi Barrage	Telangana	100.00	**104**	**15/07/2022 03**	91	90	98.90
62	Indravathi	Upper Indravathi Proje	Odisha	642	**693.63**	**13/10/2022 02**	0	0	-
63	Kolab	Kolab Project	Odisha	858	**2688.3**	**11/07/2022 21**	0	0	-
64	Machhkund	Machhkund Project	Odisha	838.2	**835.61**	**7/11/2022 18**	0	0	-
65	Balimela	Balimela Project	Odisha	462.07	**1458.2**	**01/05/2022 08**	0	0	-
66	Godavari	Indirasagar(Polavaram	Andhra Pradesh	-	**27.07**	**16/07/2022 16**	113	112	99.12
67	Pench	Pench Reservoir/Chau	Madhya Pradesh	625.75	**625.75**	**22/10/2022**	0	0	-
68	Bawanthri	Bawanthadi Reservoir	Madhya Pradesh	344.4	**344.4**	**11/10/2022 08**	0	0	-
69	Godavari	PVNR Kanthapally Pro	Telangana	83	**88.8**	**15/07/2022 02**	106	104	98.11
	4. Krishna Basin								
70	Krishna	Hippargi Dam	Karnataka	524.87	**524.87**	**14/11/2022 08**	46	42	91.30
71	Ghataprabha	Hidkal Dam	Karnataka	662.94	**695.88**	**27/10/2022 08**	44	39	88.64
72	Krishna	Alamati Dam	Karnataka	519.6	**519.6**	**21/08/2022 15**	110	103	93.64
73	Malaprabha	Malaprabha Dam	Karnataka	633.83	**6728.64**	**02/12/2022 08**	27	22	81.48
74	Krishna	Narayanpur Dam	Karnataka	492.25	**492.25**	**30/10/2022 06**	109	100	91.74
75	Nira	Veer Dam	Maharashtra	579.85	**579.85**	**12/08/2022 08**	10	6	60.00
76	Bhima	Ujjani Dam	Maharashtra	496.83	**635.54**	**21/10/2022 08**	23	13	56.52
77	Krishna	Priyadarshini	Telangana	318.51	**318.51**	**10/11/2022 08**	177	171	96.61
78	Tunga	Upper Tunga	Karnataka	588.24	**5858.23**	**08/10/2022 08**	93	89	95.70
79	Bhadra	Bhadra Dam	Karnataka	657.75	**663.09**	**21/10/2022 08**	75	70	93.33
80	Tungabhadra	Tungabhadra Dam	Karnataka	497.74	**497.74**	**24/07/2022 08**	208	186	89.42
81	Krishna	Singatalur Barrage	Karnataka	507	**506.85**	**28/10/2022 08**	207	207	100.00
82	Tungabhadra	Sunkesula Barrage	Andhra Pradesh	292	**956.36**	**20/08/2022 15**	190	181	95.26
83	Krishna	Srisailam Dam	Andhra Pradesh	269.75	**270.17**	**07/12/2022 13**	208	201	96.63
84	Musi	Musi Project	Telangana	196.60	**290.7**	**04/08/2022 08**	20	12	60.00
85	Krishna	Dr K L R S Pulichintala	Andhra Pradesh	53.34	**169.39**	**20/08/2022 15**	177	162	91.53
86	Koyna	Koyna Dam	Maharashtra	659.43	**659.38**	**15/10/2022 08**	20	12	60.00
87	Warana	Warana Dam	Maharashtra	626.9	**626.9**	**16/09/2022 08**	1	0	0.00

88	Krishna	Prakasham Barrage	Andhra Pradesh	17.39	**17.98**	**16/10/2022 14**	200	188	94.00
	5. Cauvery Basin								
89	Harangi	Harangi Dam	Karnataka	871.42	**871.17**	**02/08/2022 06**	30	28	93.33
90	Hemavathy	Hemavathy Dam	Karnataka	890.63	**890.63**	**04/08/2022 07**	76	72	94.74
91	Kabini	Kabini Dam	Karnataka	752.49	**6895.45**	**28/06/2022 06**	121	115	95.04
92	Cauvery	Krishnarajasagar	Karnataka	696.16	**1348.28**	**27/10/2022 08**	79	76	96.20
93	Cauvery	Mettur Dam	Tamilnadu	240.79	**277.61**	**26/10/2022 08**	168	151	89.88
94	Bhavani	Bhavanisagar Dam	Tamilnadu	280.42	**280.4**	**23/12/2022 08**	53	38	71.70
95	Kodaganar	Kodaganar Dam	Tamilnadu	200.25	**252.59**	**26/10/2022 06**	0	0	-
96	Cauvery	Grand Anicut	Tamilnadu	59.21	**88.06**	**14/12/2022 06**	212	172	81.13
97	Cauvery	Upper Anicut	Tamilnadu	74.4	**95.36**	**26/10/2022 06**	213	187	87.79
	6. Subarnarekha								
98	Subarnarekha	Getlasud Dam	Jharkhand	590.06			0	0	-
99	Subernarekna	Chandil Dam	Jharkhand	189	**183.2**	**21/08/2022 08**	5	4	80.00
100	Subarnarekha	Galudih Barrage	Jharkhand	94.5	**92.5**	**21/08/2022 08**	10	9	90.00
	7. Brahmani and Baitarani								
101	Salandi	Salandi Dam	Odisha	82.3	**79.03**	**16/08/2022 08**	1	1	100.00
102	Brahmani	Rengali Dam	Odisha	123.5	**123.72**	**26/10/2022 00**	13	9	69.23
	8. Mahanadi Basin								
103	Mahanadi	Ravishankar Dam	Chattisgarh	348.7	**348.75**	**31/08/2022 07**	8	5	62.50
104	Hasdeo	Bango Dam	Chattisgarh	359.66	**357.08**	**25/09/2022 08**	2	1	50.00
105	Mahanadi	Hirakud Dam	Odisha	192.02	**192.02**	**28/09/2022 13**	77	71	92.21
	9. Pennar Basin								
106	North Pennar	Somasila Dam	Andhra Pradesh	100.58	**99.94**	**20/09/2022 06**	49	39	79.59
	10. Mahi Basin								
107	Mahi	Mahi Bajajsagar Dam	Rajasthan	281.5	**286.8**	**11/11/2022 08**	4	4	100.00
108	Som Kamla	Som Kamla Amba Dan	Rajasthan	213.5	**213.5**	**30/09/2022 07**	0	0	-
109	Mahi	Kadana Dam	Gujarat	127.71	**127.71**	**06/09/2022 15**	5	5	100.00
110	Panam	Panam Dam	Gujarat	127.41	**123.15**	**23/10/2022 08**	0	0	-
	11. Sabarmati Basin								
111	Sabarmati	Dharoi Dam	Gujarat	189.59	**189.59**	**06/10/2022 03**	30	27	90.00
	12. Narmada Basin								
112	Narmada	Barna Dam	Madhya Pradesh	348.55	**348.6**	**24/09/2022 18**	7	7	100.00
113	Narmada	Bargi Dam	Madhya Pradesh	422.76	**423.1**	**12/10/2022 09**	12	12	100.00
114	Narmada	Tawa Dam	Madhya Pradesh	355.39	**355.55**	**11/10/2022 02**	20	20	100.00

115	Narmada	Indira Sagar Dam	Madhya Pradesh	262.13	**262.13**	**08/09/2022 13**	43	43	100.00
116	Narmada	Omkareshwar Dam	Madhya Pradesh	196.6	**196.55**	**09/10/2022 08**	0	0	-
117	Narmada	Sardar Sarovar Dam	Gujarat	138.38	**13861**	**14/10/2022 18**	145	143	98.62
	13. Tapi Basin								
118	Tapi	Hatnur Dam	Maharashtra	212.02	**214.1**	**12/11/2022 08**	117	115	98.29
119	Tapi	Ukai Dam	Gujarat	105.16	**105.9**	**24/10/2022 11**	134	133	99.25
	14. West Flowing rivers from Tapi to Tadri								
120	Damanganga	Madhuban Dam	Gujarat	79.86	**79.86**	**05/10/2022 19**	26	26	100.00
	16. East flowing rivers between Mahanadi and Pennar								
121	Vamsadhara	Gotta Barrage	Andhra Pradesh	34.84	**38.1**	**25/07/2022 09**	6	6	100.00
122	Nagavali	Thottapalli Reservoir S	Andhra Pradesh	105	**105**	**24/09/2022 08**	2	2	100.00
123	Suwarnamukhi	Madduvalasa Reservoi	Andhra Pradesh	65	**64.5**	**31/10/2022 08**	3	3	100.00
124	Nagavali	Narayanapuram Anicut	Andhra Pradesh	32.77	**30.2**	**26/09/2022 08**	8	8	100.00
	17 East flowing rivers between Pennar and Kanyakumari								
125	Kosasthaliyar	Poondi Satyamurthy re	Tamilnadu	42.67	**42.67**	**30/12/2022 06**	4	2	50.00
126	Adyar	Chembarampakkam	Tamilnadu	26.03	**87.78**	**02/07/2022 06**	1	0	0.00
127	South Pennar	Sathnur Dam	Tamilnadu	222.2	**283.3**	**24/07/2022 06**	13	9	69.23
128	Gomukhinadi	Gomukhi Dam	Tamilnadu	183.18	**182.79**	**31/12/2022 06**	0	0	-
129	Periyar Odai	Wellington Dam	Tamilnadu	72.54	**71.86**	**18/11/2022 06**	0	0	-
130	Vaigai	Vaigai Dam	Tamilnadu	279.20	**342.63**	**26/10/2022 06**	63	55	87.30
	18. West flowing rivers of Kutch and Saurashtra including Luni								
131	Banas	Dantiwada Dam	Gujarat	184.1	**183.86**	**05/10/2022 08**	12	10	83.33
	19. West Flowing River Tadri to Kanyakumari								
132	Periyar	Idduki Dam	Kerala	732.43	**727.87**	**13/09/2022 19**	7	5	71.43
133	Edamalayar	Idamalayar	Kerala	169	**169.95**	**17/12/2022 01**	4	3	75.00
				Total Inflow Forecasts			***4779***	***4369***	**91.42**
				Total Level Forecasts			**6779**	**6476**	**95.53**
				Total Forecasts			**11558**	**10845**	**93.83**

Statewise Flood Forecasting Information In India during Flood Season 2022

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2022		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	44.91	18/08/2020	49.4	16/07/2022 18	34	29	85.29
2	Godavari	Kunavaram	37.74	39.24	51.30	16/08/1986	48.87	16/07/2022 16	68	68	100.00
3	Godavari	Rajahmundry	17.68	19.51	20.48	16/08/1986	19.38	17/07/2022 07	11	11	100.00
4	Godavari	Dowlaiswaram	14.25	16.08	18.36	16/08/1986	17.29	17/07/2022 02	57	57	100.00
5	Tungabhadra	Mantralayam	310.00	312.00	318.77	02/10/2009	312.45	09/09/2022 03	89	72	80.90
6	Pennar	Nellore Anicut	15.91	17.28	19.57	20/11/2021	12.4	15/10/2022 22	0	0	-
7	Godavari	Atreyapuram	13.50	15.00	14.16	18/08/2020	14.12	17/07/2022 03	5	5	100.00
8	Tungabhadra	Kurnool Town	273.00	274.00	281.23	02/10/2009	273.5	08/09/2022 20	14	9	64.29
9	Krishna	Avanigadda	9.00	11.00	11.87	05/10/2009	7.6	18/10/2022	0	0	-
10	Nagavali	Srikakulam	10.17	10.80	14.53	12/05/1990	10.77	15/08/2022 13	19	15	78.95
	Assam										
11	Brahmaputra	Dibrugarh	104.70	105.70	106.48	03/09/1998	105.56	28/06/2022 19	103	103	100.00
12	Brahmaputra	Neamatighat	84.54	85.54	87.37	11/07/1991	86.6	18/06/2022 23	124	123	99.19
13	Brahmaputra	Tezpur	64.23	65.23	66.59	27/08/1988	65.89	01/07/2022 07	70	70	100.00
14	Brahmaputra	Guwahati	48.68	49.68	51.46	21/07/2004	49.95	20/06/2022 10	19	19	100.00
15	Brahmaputra	Goalpara	35.27	36.27	37.43	31/07/1954	36.64	20/06/2022 22	39	39	100.00
16	Brahmaputra	Dhubri	27.62	28.62	30.37	18/07/2019	29.6	21/06/2022 01	111	111	100.00
17	Buridehing	Naharkatia	119.40	120.40	122.69	17/06/1973	118.96	16/05/2022 20	0	0	-
18	Buridehing	Khowang	101.11	102.11	104.16	02/09/2015	103.35	01/07/2022 12	44	44	100.00
19	Desang	Nanglamoraghat	93.46	94.46	96.49	06/09/1998	95.36	04/07/2022 18	78	78	100.00
20	Dikhow	Shivsagar	91.40	92.40	94.24	22/06/2020	92.39	04/07/2022 15	13	13	100.00
21	Subansiri	Badatighat	81.53	82.53	86.21	28/07/1972	82.57	19/06/2022 07	38	38	100.00
22	Dhansiri (S)	Golaghat	88.50	89.50	92.45	11/10/1986	88.34	18/05/2022 00	0	0	-
23	Dhansiri (S)	Numaligarh	77.42	78.42	80.16	02/08/2018	78.22	24/07/2022 19	74	74	100.00
24	Jiabharali	Jia-Bharali NT Road Crossing	77.00	78.00	78.50	26/07/2007	78.1	17/06/2022 07	271	271	100.00
25	Kopili	Kampur	59.50	60.50	61.79	20/07/2004	62.2	18/06/2022 14	56	55	98.21
26	Kopili	Dharamtul	55.00	56.00	58.09	21/07/2004	58	22/06/2022 03	85	85	100.00
27	Puthimari	Puthimari NH Crossing	51.31	52.31	55.08	31/08/2008	54.49	17/06/2022 12	31	28	90.32
28	Pagladiya	Pagladiya NT Road Crossing	51.75	52.75	55.45	08/07/2004	53.88	17/06/2022 08	35	34	97.14
29	Beki	Beki NH Crossing	44.10	45.10	46.20	04/08/2000	45.7	18/06/2022 12	191	191	100.00
30	Manas	Manas NH Crossing	47.81	48.42	50.08	15/09/1984	49.32	16/06/2022 20	41	41	100.00
31	Manas	Mathanguri	98.10	99.10	100.28	13/10/1973	96.2	18/06/2022 07	0	0	-
32	Sankosh	Golokganj	28.94	29.94	30.95	08/09/2007	30	18/06/2022 17	78	78	100.00
33	Barak	AP Ghat	18.83	19.83	21.84	01/08/1989	21.59	21/06/2022 14	68	67	98.53
34	Katakhal	Matizuri	19.27	20.27	22.73	10/09/2007	22.49	21/06/2022 08	44	43	97.73
35	Kushiyara	Karimganj	13.94	14.94	16.57	10/06/2010	16.52	22/06/2022 20	85	85	100.00
36	Barak	Badarpurghat	15.85	16.85	18.48	11/09/2007	18.44	23/06/2022 08	82	81	98.78
37	Subansiri	Choldhowaghat	99.43	100.43	101.31	27/07/1972	96.33	17/06/2022 12	0	0	-
38	Ranganadi	N H Crossing Ranganadi	93.81	94.81	95.92	02/07/1979	94.58	17/06/2022 16	20	19	95.00
39	Lohit	Dholla Bazaar	127.27	128.27	130.07	22/09/2012	126.53	18/06/2022 06	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
40	Gaurang	Kokrajhar	41.85	42.85	43.60	20/08/2015	43.07	16/06/2022 13	31	30	96.77
	Arunachal Pradesh										
41	Noa-Dehing	Namsai	144.80	145.80	146.60	07/10/1979	144.56	18/06/2022 11	0	0	-
42	Siang	Yingkiang	303.00	304.00			269.94	18/06/2022 08	0	0	-
43	Siang	Passighat	152.96	153.96	157.54	11/06/2000	152.9	28/06/2022 11	0	0	-
	Bihar										
44	Ganga	Buxar	59.32	60.32	62.09	01/05/1905	60.69	01/09/2022 00	12	11	91.67
45	Ganga	Patna Dighaghat	49.45	50.45	52.52	23/08/1975	50.77	01/09/2022 07	22	22	100.00
46	Ganga	Patna Gandhighat	47.60	48.60	50.52	20/08/2016	49.6	01/09/2022 07	54	53	98.15
47	Ganga	Hathidah	40.76	41.76	43.52	16/08/2021	42.7	02/09/2022 02	56	55	98.21
48	Ganga	Munger	38.33	39.33	40.99	19/09/1976	39.1	04/09/2022 01	16	15	93.75
49	Ganga	Bhagalpur	32.68	33.68	34.86	18/08/2021	33.94	02/09/2022 23	33	32	96.97
50	Ganga	Kahalgaon	30.09	31.09	32.87	17/09/2003	32.05	04/09/2022 01	61	61	100.00
51	Ghaghra	Darauli	59.82	60.82	61.74	29/08/1998	61.82	15/10/2022 17	75	75	100.00
52	Ghaghra	Gangpur Siswan	56.04	57.04	58.01	18/09/1983	57.96	16/10/2022 05	30	30	100.00
53	Ghaghra	Chhappra	52.68	53.68	54.59	03/09/1982	52.2	01/09/2022 05	0	0	-
54	Gandak	Chatia	68.15	69.15	70.04	26/07/2002	68.13	09/10/2022 17	0	0	-
55	Gandak	Rewaghat	53.41	54.41	55.46	24/07/2020	54.92	10/10/2022 05	29	29	100.00
56	Gandak	Hazipur	49.32	50.32	50.93	01/05/1905	49.61	01/09/2022 00	5	5	100.00
57	Burhi Gandak	Lalbeghiaghat	62.20	63.20	67.09	30/07/1975	61.42	04/08/2022 04	0	0	-
58	Burhi Gandak	Muzzafarpur Sikandarpur	51.53	52.53	54.29	15/08/1987	50.59	07/08/2022 03	0	0	-
59	Burhi Gandak	Samastipur	45.02	46.02	49.38	15/08/1987	43.97	08/08/2022 05	0	0	-
60	Burhi Gandak	Rosera	41.63	42.63	46.56	02/08/2020	41.47	08/08/2022 08	0	0	-
61	Burhi Gandak	Khagaria	35.58	36.58	39.22	29/05/1905	37.76	04/09/2022 01	58	57	98.28
62	Bagmati	Benibad	47.68	48.68	50.01	12/07/2004	49.81	03/08/2022 15	114	113	99.12
63	Bagmati	Hayaghat	44.72	45.72	48.96	14/08/1987	44.22	06/08/2022 16	0	0	-
64	Bagmati	Dheng Bridge	70.00	71.00	73.00	13/08/2017	71.4	29/06/2022 23	36	30	83.33
65	Adhwara Group	Kamtaul	49.00	50.00	52.99	12/08/1987	49.92	02/07/2022 08	12	12	100.00
66	Adhwara Group	Ekmighat	45.94	46.94	49.52	12/07/2004	45.62	10/09/2022 04	0	0	-
67	Adhwara	Sonebarsha	80.85	81.85	83.20	03/07/1999	81.38	29/06/2022 18	1	1	100.00
68	Kamla Balan	Jainagar	66.75	67.75	71.35	21/09/2016	68.9	29/06/2022 22	428	424	99.07
69	Bagmati	Runisaidpur	54.00	55.00	58.15	14/08/2017	56.52	03/08/2022 12	62	55	88.71
70	Parwan	Araria	46.00	47.00	49.40	14/08/2017	48.26	01/07/2022 14	144	142	98.61
71	Kamla Balan	Jhanjarpur	49.00	50.00	53.11	14/07/2019	51.7	30/06/2022 05	348	347	99.71
72	Kosi	Basua	46.75	47.75	49.24	13/08/2017	49.24	02/08/2022 19	290	287	98.97
73	Kosi	Baltara	32.85	33.85	36.40	15/08/1987	34.99	05/08/2022 05	121	116	95.87
74	Kosi	Kursela	29.00	30.00	32.10	07/09/1982	31.16	04/09/2022 21	77	75	97.40
75	Mahananda	Dhengraghat	34.65	35.65	38.20	14/08/2017	36.73	30/06/2022 14	55	55	100.00
76	Mahananda	Jhawa	30.40	31.40	34.07	14/08/2017	32.44	01/07/2022 06	79	76	96.20

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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
77	Mahananda	Taibpur	65.00	66.00	67.22	28/07/2016	67.26	29/06/2022 06	55	54	98.18
78	Gandak	Dumariaghat	61.22	62.22	64.36	24/07/2020	63.52	09/10/2022 09	131	127	96.95
79	Burhigandak	Ahirwalia	58.62	59.62	61.17	02/06/2014	57.03	05/08/2022 07	0	0	-
80	Sone	Inderpuri	107.20	108.20	108.85	23/08/1975	103.27	24/08/2022 00	0	0	-
81	Sone	Koelwar	54.52	55.52	58.88	20/07/1971	52.65	02/09/2022 05	0	0	-
82	Sone	Maner	51.00	52.00	53.79	10/09/1976	52.57	01/09/2022 00	23	23	100.00
83	PunPun	Sripalpur	49.60	50.60	53.91	18/09/1976	49.64	27/08/2022 06	2	2	100.00
	Chhattisgarh										
84	Indravathi	Jagdalpur	539.50	540.80	544.68	09/07/1973	542.9	16/08/2022 11	18	17	94.44
	Daman & Diu										
85	Damanganga	Daman	2.60	3.40	4.00	03/08/2004	2.5	16/09/2022 00	0	0	-
	Gujarat										
86	Sabarmati	Ahmedabad Shubhash	44.09	45.34	47.45	19/08/2006	42.8	24/08/2022 20	0	0	-
87	Mahi	Wanakbori	71.93	74.98	76.10	12/08/2006	71.17	24/08/2022 01	0	0	-
88	Narmada	Garudeswar	30.48	31.09	41.65	06/09/1970	25.7	24/08/2022 21	0	0	-
89	Narmada	Bharuch	6.71	7.31	12.65	07/09/1970	8.52	25/08/2022 06	23	23	100.00
90	Tapi	Surat	8.50	9.50	12.50	09/08/2006	6.6	20/07/2022 10	0	0	-
91	Damanganga	Vapi Town	18.20	19.20	23.76	03/08/2004	17.55	12/07/2022 04	0	0	-
	Haryana										
92	Yamuna	Karnal Bridge	248.80	249.50	250.07	17/06/2013	248.3	27/09/2022 04	1	0	0.00
	Himachal Pradesh										
93	Yamuna	Paonta Sahib	383.50	384.50	384.60	05/09/1995	383	26/09/2022 04	1	0	0.00
	Jammu & Kashmir										
94	Jhelum	Rammunshibagh	1584.87	1585.48	1588.99	08/09/2014	1586.18	23/06/2022 03	4	1	25.00
95	Jhelum	Sangam	1589.96	1590.88	1595.00	06/09/2014	1591.94	22/06/2022 20	2	1	50.00
96	Jhelum	Safapora	1579.36	1579.66	1582.10	09/09/2014	1580.32	23/06/2022 18	8	5	62.50
	Jharkhand										-
97	Ganga	Sahibganj	26.25	27.25	30.91	20/08/1998	28.23	19/10/2022 08	71	71	100.00
98	Subarnarekha	Jamshedpur	122.50	123.50	129.82	12/10/1973	125.36	21/08/2022 06	4	2	50.00
	Karnataka										
99	Bhima	Deongaon	402.00	404.50	409.00	18/10/2020	403.43	21/10/2022 00	9	5	55.56
	Kerala										
100	Periyar	Neeleswaram	9.00	10.00	12.40	15/08/2018	7.32	02/08/2022 06	0	0	-
101	Bharathapuzha	Kumbidi	8.20	9.20	11.27	17/08/2018	7.9	17/07/2022 05	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
102	Pamba	Malakkara	6.00	7.00	9.58	16/08/2018	6.46	04/08/2022 20	3	1	33.33
	Madhya Pradesh										
103	Narmada	Mandla	437.20	437.80	439.40	15/07/1974	438.5	22/08/2022 01	19	19	100.00
104	Narmada	Hoshangabad	292.80	293.80	301.33	27/08/1972	294.85	22/08/2022 21	23	23	100.00
	Maharashtra										
105	Godavari	Kopergaon	490.90	493.68	499.17	22/05/1905	493.2	12/07/2022 20	33	25	75.76
106	Godavari	Gangakhed	374.00	375.00	377.57	30/04/1905	370.98	19/09/2022 17	0	0	-
107	Godavari	Nanded	353.00	354.00	357.10	06/08/2006	349.84	13/07/2022 18	0	0	-
108	Wainganga	Bhandara	245.50	245.70	250.90	16/09/2005	248.38	16/08/2022 22	0	0	-
109	Wainganga	Pauni	226.73	227.73	237.12	07/09/1994	229.35	17/08/2022 05	0	0	-
110	Wardha	Balharsha	171.50	174.00	176.45	14/08/1986	173.67	20/07/2022 22	24	21	87.50
111	Krishna	Arjunwad	539.20	540.70	544.35	09/08/2019	536.74	13/08/2022 06	0	0	-
112	Godavari	Nasik	558.10	559.60	563.51	04/08/2019	558.91	12/07/2022 01	3	2	66.67
	NCT Delhi										
113	Yamuna	Delhi Rly Bridge	204.50	205.33	207.49	06/09/1978	206.59	28/09/2022 06	43	29	67.44
114	Sahibi	Dhansa	211.44	212.44	213.58	06/08/1977	211.05	09/10/2022 08	0	0	-
	Odisha										
115	Subarnarekha	Rajghat	9.45	10.36	12.69	19/06/2008	11.9	22/08/2022 04	3	3	100.00
116	Burhabalang	NH_5 _Road Bridge	7.21	8.13	9.50	12/10/1973	7.58	20/08/2022 20	4	4	100.00
117	Baitarni	Anandpur	37.44	38.36	41.35	23/09/2011	39.12	21/08/2022 03	7	4	57.14
118	Baitarni	Akhuapada	17.83	17.83	21.95	16/08/1960	19.02	21/08/2022 15	11	9	81.82
119	Brahmani	Jenapur	22.00	23.00	24.78	20/08/1975	21.23	25/08/2022 18	0	0	-
120	Rishikulya	Purushottampur	15.83	16.83	19.65	04/11/1990	15.79	06/10/2022 02	0	0	-
121	Vamsadhara	Gunupur	83.00	84.00	88.75	17/09/1980	83.97	14/08/2022 19	10	7	70.00
122	Vamsadhara	Kashinagar	54.10	54.60	58.93	18/09/1980	55.84	14/08/2022 22	33	29	87.88
123	Mahanadi	Naraj	25.41	26.41	27.61	31/08/1982	27.49	17/08/2022 08	17	16	94.12
124	Mahanadi	Alipingal Devi	10.85	11.76	13.11	11/09/2011	12.06	17/08/2022 06	9	8	88.89
125	Mahanadi	Nimapara	9.85	10.76	11.60	31/08/1982	10.58	17/08/2022 13	8	8	100.00
126	Jalaka	Mathani Road Bridge	5.50	5.50	7.31	22/09/2021	6.97	21/08/2022 00	87	83	95.40
	Rajasthan										
127	Chambal	Manderial	164.00	165.00	169.96	23/08/1996	170.05	25/08/2022 06	3	1	33.33
128	Chambal	Dholpur	129.79	130.79	145.54	23/08/1996	146.57	25/08/2022 19	30	14	46.67
129	Chambal	Kota City	239.00	242.00	248.68	16/09/2019	245.8	23/08/2022 16	15	4	26.67
130	Banas	Abu Road	258.00	259.00	265.40	31/08/1973	258.3	17/08/2022 18	0	0	-
	Sikkim										
131	Teesta	Malli Bazaar	223.00	224.00	225.25		217.25	12/10/2022 07	0	0	-
132	Teesta	Joretahang(Rothak)	350.60	351.60	353.20		348.95	01/09/2022 14	0	0	-
133	Teesta	Singtam	377.07	377.57	379.17		375.09	23/08/2022 20	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
	Tamilnadu										
134	Cauvery	Musiri(Srirangam)	82.12	83.12	86.98	25/11/2005	84.3	05/08/2022 18	108	101	93.52
135	Cauvery	Kodumudi (Erode)	125.50	126.50	128.14	17/08/2018	127.83	05/08/2022 07	65	58	89.23
136	Bhavani	Savandapur(Bhavani)	184.50	185.50	187.75	17/08/2018	184.88	06/08/2022 11	1	1	100.00
137	Vaigai	Madurai	131.50	132.50	134.76	17/11/1997	131.7	18/10/2022 14	4	3	75.00
	Telangana										
138	Godavari	Kaleswaram	103.50	104.75	107.05	15/08/1986	108.19	15/07/2022 00	10	8	80.00
139	Godavari	Eturunagaram	73.32	75.82	77.66	24/08/1990	77.11	15/07/2022 06	45	39	86.67
140	Godavari	Dummagudem	53.00	55.00	60.25	15/08/1986	59.62	15/07/2022 18	47	42	89.36
141	Godavari	Bhadrachalam	45.72	48.77	55.66	16/08/1986	54.34	16/07/2022 01	59	54	91.53
142	Wardha	Sirpur Town	159.95	160.95	161.34	18/08/2018	162.57	15/07/2022 04	32	26	81.25
	Tripura										
143	Manu	Kailashahar	24.34	25.34	25.95	13/06/2018	23.49	24/08/2022 11	0	0	-
144	Gumti	Sonamura	11.50	12.50	14.42	23/07/1993	12.01	20/06/2022	4	4	100.00
	Uttar Pradesh										
145	Ganga	Kannauj	124.97	125.97	126.78	27/09/2010	125.48	16/10/2022 06	7	7	100.00
146	Ganga	Ankinghat	123.00	124.00	124.49	28/09/2010	123.49	16/10/2022 22	12	12	100.00
147	Ganga	Kanpur	112.00	113.00	114.08	29/09/2010	112.47	17/10/2022 09	7	7	100.00
148	Ganga	Dalmau	98.36	99.36	99.84	03/08/1973	98.43	18/10/2022 09	3	3	100.00
149	Ganga	Phaphamau	83.73	84.73	87.98	08/09/1978	85.93	29/08/2022 06	8	6	75.00
150	Ganga	Allahabad Chhatnag	83.73	84.73	88.03	08/09/1978	85.1	29/08/2022 15	6	4	66.67
151	Ganga	Mirzapur	76.72	77.72	80.34	09/09/1978	78.11	30/08/2022 02	6	6	100.00
152	Ganga	Varanasi	70.26	71.26	73.90	09/09/1978	72.14	29/08/2022 21	7	6	85.71
153	Ganga	Ghazipur	62.10	63.10	65.22	09/09/1978	64.39	31/08/2022 01	13	12	92.31
154	Ganga	Ballia	56.62	57.62	60.39	25/08/2016	59.76	31/08/2022 04	35	26	74.29
155	Ramganga	Moradabad	189.60	190.60	192.88	21/09/2010	190.31	13/10/2022 21	6	6	100.00
156	Ramganga	Bareilly	162.07	163.07	162.88	06/08/1978	160.97	13/10/2022 07	0	0	-
157	Yamuna	Mawi	231.00	231.50	232.75	18/06/2013	231.16	27/09/2022 11	3	2	66.67
158	Yamuna	Mathura	165.20	166.00	169.73	08/09/1978	165.46	30/09/2022 17	8	5	62.50
159	Yamuna	Agra	151.40	152.40	154.76	09/09/1978	150.3	1/10/2022 03	0	0	-
160	Yamuna	Etawah	120.92	121.92	126.13	11/09/1978	122.1	27/08/2022 08	8	4	50.00
161	Yamuna	Auraiya	112.00	113.00	118.51	06/08/2021	117.98	27/08/2022 10	15	11	73.33
162	Yamuna	Kalpi	107.00	108.00	112.98	25/08/1996	112.93	27/08/2022 14	17	11	64.71
163	Yamuna	Hamirpur	102.63	103.63	108.59	12/09/1983	107.51	27/08/2022 05	15	13	86.67
164	Yamuna	Chillaghat	99.00	100.00	105.16	06/09/1978	102.83	27/08/2022 19	17	13	76.47
165	Yamuna	Naini	83.74	84.74	87.99	08/09/1978	85.9	29/08/2022 17	16	14	87.50
166	Betwa	Mohana	121.66	122.66	133.35	11/09/1983	122.03	23/08/2022 18	4	2	50.00
167	Ken	Banda	103.00	104.00	113.29	07/07/2005	105.67	24/08/2022 04	9	7	77.78
168	Gomati	Lucknow HanumanSetu	108.50	109.50	110.85	10/09/1971	106.16	30/10/2022 17	0	0	-
169	Gomati	Jaunpur	73.07	74.07	77.74	22/09/1971	71.13	14/10/2022 14	0	0	-
170	SAI	Rae-Bareli	100.00	101.00	104.81	17/09/1982	99.31	20/09/2022 03	0	0	-
171	Ghaghra	Elgin Bridge	105.07	106.07	107.62	18/08/2014	107.36	12/10/2022 04	101	101	100.00
172	Ghaghra	Ayodhya	91.73	92.73	94.01	11/10/2009	93.98	13/10/2022 04	97	95	97.94
173	Ghaghra	Turtipar	63.01	64.01	66.00	28/08/1998	65.68	15/10/2022 05	81	80	98.77
174	Rapti	Balrampur	103.62	104.62	105.54	15/08/2017	106.07	10/10/2022 07	43	42	97.67
175	Rapti	Bansi	83.90	84.90	85.95	03/09/2021	86.27	16/10/2022 04	25	25	100.00
176	Rapti	Gorakhpur Birdghat	73.98	74.98	77.54	23/08/1998	76.11	17/10/2022 07	27	27	100.00
177	Rapti	Kakardhari	130.00	131.00	132.37	15/08/2014	131.29	08/10/2022 18	10	10	100.00
178	Gandak	Khadda	95.00	96.00	97.50	23/07/2002	96.32	07/10/2022 14	198	196	98.99

Statewise Flood Forecasting Information In India during Flood Season 2022

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2022				
					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
179	Ganga	Fathegarh	136.60	137.60	138.14	26/09/2010	137.44	26/08/2022 03	59	59	100.00
180	Ganga	Dabri	136.30	137.30	139.70	28/09/1983	137.66	16/10/2022 05	14	13	92.86
181	Ganga	Garhmuktheswar	198.33	199.33	199.90	23/09/2010	198.65	09/08/2022 16	24	24	100.00
182	Ganga	Kachla Bridge	161.00	162.00	162.79	23/10/2021	162.73	24/08/2022 01	112	108	96.43
183	Betwa	Shahjina	103.54	104.54	108.67	12/09/1983	106.92	26/08/2022 22	12	10	83.33
	Uttarakhand										
184	Mandakini	Ganganagar	803.00	804.00	801.92	26/06/2015	801.2	12/07/2022 05	0	0	-
185	Alaknanda	Srinagar	535.00	536.00	537.90	17/06/2013	535.34	05/08/2022 11	4	2	50.00
186	Ganga	Rishikesh	339.50	340.50	341.72	05/09/1995	339.5	20/08/2022 21	0	0	-
187	Ganga	Haridwar	293.00	294.00	296.30	19/09/2010	294.68	20/08/2022 06	4	1	25.00
	West Bengal										
188	Ganga	Farakka	21.25	22.25	25.14	07/09/1998	23.23	05/09/2022 09	113	111	98.23
189	Mayurakshi	Narayanpur	26.99	27.99	29.69	27/09/1995	24.14	16/09/2022 21	0	0	-
190	Ajoy	Gheropara	38.42	39.42	43.94	27/09/1978	35.9	30/09/2022 04	0	0	-
191	Mundeswari	Harinkhola	11.80	12.80	14.60	28/07/2017	11.16	07/10/2022 09	0	0	-
192	Kangsabati	Mohanpur	24.73	25.73	29.87	02/09/1978	21.92	21/08/2022 15	0	0	-
193	Raidak-I	Tufanganj	34.22	35.30	36.50	12/08/2017	35.27	17/06/2022 18	18	15	83.33
194	Torsa	Hasimara	116.30	116.90	118.50	13/07/1996	117.1	18/06/2022 02	2	1	50.00
195	Torsa	Ghugumari	39.80	40.41	41.46	03/08/2000	40.56	18/06/2022 11	29	27	93.10
196	Jaldhaka	NH-31	80.00	80.90	81.33	28/08/1972	80.3	01/09/2022 13	26	23	88.46
197	Jaldhaka	Mathabanga	47.70	48.20	49.85	07/09/2007	47.98	29/06/2022 05	4	2	50.00
198	Tista	Domohani	85.65	85.95	89.30	14/10/1968	86.18	01/08/2022 07	92	82	89.13
199	Tista	Mekhliganj	65.45	65.95	66.62	20/10/2021	65.64	02/08/2022 02	4	4	100.00
							Total Level Forecasts		**6779**	**6476**	**95.53**
							Total Inflow Forecast		**4779**	**4369**	**91.42**
							Total Forecast		**11558**	**10845**	**93.83**

Statewise Flood Forecasting Information In India during Flood Season 2021

Sl.No.	Name of the river	Name of FF site	FRL/PL (m)	Maximum 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
	Andhra Pradesh							
1	Godavari	Indirasagar(Polavaram)	-	**27.07**	**16/07/2022 16**	113	112	99.12
2	Tungabhadra	Sunkesula Barrage	292	**956.36**	**20/08/2022 15**	190	181	95.26
3	Krishna	Srisailam Dam	269.75	**270.17**	**07/12/2022 13**	208	201	96.63
4	Krishna	Dr K L R S Pulichintala Dam	53.34	**169.39**	**20/08/2022 15**	177	162	91.53
5	Krishna	Prakasham Barrage	17.39	**17.98**	**16/10/2022 14**	200	188	94.00
6	North Pennar	Somasila Dam	100.58	**99.94**	**20/09/2022 06**	49	39	79.59
7	Vamsadhara	Gotta Barrage	34.84	**38.1**	**25/07/2022 09**	6	6	100.00
8	Nagavali	Thottapalli Reservoir Scheme	105	**105**	**24/09/2022 08**	2	2	100.00
9	Suwarnamukhi	Madduvalasa Reservoir	65	**64.5**	**31/10/2022 08**	3	3	100.00
10	Nagavali	Narayanapuram Anicut	32.77	**30.2**	**26/09/2022 08**	8	8	100.00
	Assam							
	Arunachal Pradesh							
	Bihar							
11	Sone	Indrapuri Barrage	173	NA		0	0	-
12	Gandak	Gandak Barrage	110.3	**110.09**	**07/10/2022 08**	0	0	-
13	Kosi	Kosi Barrage	74.69	**75.35**	**27/06/2022 08**	0	0	-
	Chhattisgarh							
14	Mahanadi	Ravishankar Dam	348.7	**348.75**	**31/08/2022 07**	8	5	62.50
15	Hasdeo	Bango Dam	359.66	**357.08**	**25/09/2022 08**	2	1	50.00
	Daman & Diu							
	Gujarat							
16	Mahi	Kadana Dam	127.71	**127.71**	**06/09/2022 15**	5	5	100.00
17	Panam	Panam Dam	127.41	**123.15**	**23/10/2022 08**	0	0	-
18	Sabarmati	Dharoi Dam	189.59	**189.59**	**06/10/2022 03**	30	27	90.00
19	Narmada	Sardar Sarovar Dam	138.38	**13861**	**14/10/2022 18**	145	143	98.62
20	Tapi	Ukai Dam	105.16	**105.9**	**24/10/2022 11**	134	133	99.25
21	Damanganga	Madhuban Dam	79.86	**79.86**	**05/10/2022 19**	26	26	100.00

22	Banas	Dantiwada Dam	184.1	**183.86**	**05/10/2022 08**	12	10	83.33
	Haryana							
23	Yamuna	Tajewala Weir	334	**334.32**	**03/07/2022 09**	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	**115.55**	**16/10/2022 07**	2	2	100.00
29	Ashra nadi	Sikatia Barrage	170.10	**161.09**	**14/09/2022 12**	0	0	-
30	Damodar	Tenughat Dam	268.83	**265.61**	**02/06/2022 05**	50	50	100.00
31	Barakar	Tilaiya Dam	372.46	**367.35**	**22/10/2022 15**	0	0	-
32	Konar	Konar Dam	427.93	**426.23**	**16/10/2022 06**	0	0	-
33	Damodar	Panchet Dam	132.59	**129.59**	**13/11/2022 18**	65	63	96.92
34	Barakar	Maithon Dam	150.88	**149.17**	**05/10/2022 09**	28	26	92.86
35	Anjanwa	Sundar Dam	110.795	**109.7**	**18/06/2022 10**	**0**	0	-
36	Subarnarekha	Getlasud Dam	590.06			0	0	-
37	Subernarekna	Chandil Dam	189	**183.2**	**21/08/2022 08**	5	4	80.00
38	Subarnarekha	Galudih Barrage	94.5	**92.5**	**21/08/2022 08**	10	9	90.00
	Karnataka							
39	Karanja	Karanja Dam	584.15	**584.09**	**04/11/2022 08**	0	0	-
40	Krishna	Hippargi Dam	524.87	**524.87**	**14/11/2022 08**	46	42	91.30
41	Ghataprabha	Hidkal Dam	662.94	**695.88**	**27/10/2022 08**	44	39	88.64
42	Krishna	Alamati Dam	519.6	**519.6**	**21/08/2022 15**	110	103	93.64
43	Malaprabha	Malaprabha Dam	633.83	**6728.64**	**02/12/2022 08**	27	22	81.48
44	Krishna	Narayanpur Dam	492.25	**492.25**	**30/10/2022 06**	109	100	91.74
45	Tunga	Upper Tunga	588.24	**5858.23**	**08/10/2022 08**	93	89	95.70
46	Bhadra	Bhadra Dam	657.75	**663.09**	**21/10/2022 08**	75	70	93.33
47	Tungabhadra	Tungabhadra Dam	497.74	**497.74**	**24/07/2022 08**	208	186	89.42
48	Krishna	Singatalur Barrage	507	**506.85**	**28/10/2022 08**	207	207	100.00
49	Harangi	Harangi Dam	871.42	**871.17**	**02/08/2022 06**	30	28	93.33
50	Hemavathy	Hemavathy Dam	890.63	**890.63**	**04/08/2022 07**	76	72	94.74

51	Kabini	Kabini Dam	752.49	6895.45	28/06/2022 06	121	115	95.04
52	Cauvery	Krishnarajasagar	696.16	1348.28	27/10/2022 08	79	76	96.20
	Kerala							
53	Periyar	Idduki Dam	732.43	727.87	13/09/2022 19	7	5	71.43
54	Edamalayar	Idamalayar	169	169.95	17/12/2022 01	4	3	75.00
	Madhya Pradesh							
55	Chambal	Gandhisagar Dam	399.9	399.67	06/10/2022 08	8	3	37.50
56	Betwa	Rajghat Dam	371	371	09/09/2022 06	25	18	72.00
57	Sone	Bansagar Dam	341.65	341.64	23/09/2022 08	16	4	25.00
58	Sindh	Madikhera(Atal Sagar)	346.25	346.25	15/09/2022 08	8	4	50.00
59	Wainganga	Upper Wainganga Project/SS	519.38	519.38	17/10/2022 08	0	0	-
60	Pench	Pench Reservoir/Chaurai/Ma	625.75	625.75	22/10/2022	0	0	-
61	Bawanthri	Bawanthadi Reservoir	344.4	344.4	11/10/2022 08	0	0	-
62	Narmada	Barna Dam	348.55	348.6	24/09/2022 18	7	7	100.00
63	Narmada	Bargi Dam	422.76	423.1	12/10/2022 09	12	12	100.00
64	Narmada	Tawa Dam	355.39	355.55	11/10/2022 02	20	20	100.00
65	Narmada	Indira Sagar Dam	262.13	262.13	08/09/2022 13	43	43	100.00
66	Narmada	Omkareshwar Dam	196.6	196.55	09/10/2022 08	0	0	-
	Maharashtra							
67	Godavari	N M D Weir	533.50	553.44	27/05/2022 08	0	0	-
68	Mula	Mula Dam	552.3	552.3	07/10/2022 06	0	0	-
69	Godavari	Jaikwadi Dam	463.91	1522	18/11/2022 13	12	8	66.67
70	Sindhpana	Manjlegaon	431.80	431.8	07/10/2022 06	0	0	-
71	Puma	Yeldari Dam	461.77	461.77	10/09/2022 06	0	0	-
72	Pench	Totladoh Project	490	490	14/09/2022 08	2	2	100.00
73	Wainganga	Goshikhurd Dam	245.5	244.5	11/10/2022 20	22	22	100.00
74	Wardha	Upper Wardha Project	342.5	342.5	02/10/2022 20	34	33	97.06
75	Penganga	Issapur/Upper Penganga Pro	441	441	10/10/2022 08	2	2	100.00
76	Nira	Veer Dam	579.85	579.85	12/08/2022 08	10	6	60.00
77	Bhima	Ujjani Dam	496.83	635.54	21/10/2022 08	23	13	56.52
78	Koyna	Koyna Dam	659.43	659.38	15/10/2022 08	20	12	60.00
79	Warana	Warana Dam	626.9	626.9	16/09/2022 08	1	0	0.00
80	Tapi	Hatnur Dam	212.02	214.1	12/11/2022 08	117	115	98.29
	NCT Delhi							

	Odisha							
81	Indravathi	Upper Indravathi Project	642	**693.63**	**13/10/2022 02**	0	0	-
82	Kolab	Kolab Project	858	**2688.3**	**11/07/2022 21**	0	0	-
83	Machhkund	Machhkund Project	838.2	**835.61**	**7/11/2022 18**	0	0	-
84	Balimela	Balimela Project	462.07	**1458.2**	**01/05/2022 08**	0	0	-
85	Salandi	Salandi Dam	82.3	**79.03**	**16/08/2022 08**	1	1	100.00
86	Brahmani	Rengali Dam	123.5	**123.72**	**26/10/2022 00**	13	9	69.23
87	Mahanadi	Hirakud Dam	192.02	**192.02**	**28/09/2022 13**	77	71	92.21
	Rajasthan							
88	Chambal	Rana Pratap Sagar	352.81	**352.81**	**30/09/2022 07**	5	4	80.00
89	Chambal	Kota Barrage	260.3	**260.36**	**24/07/2022 14**	0	0	-
90	Banas	Bisalpur Dam	315.50	**315.5**	**26/08/2022 08**	0	0	-
91	Kalisindh	Kalisindh Dam	316	**316**	**03/10/2022 08**	26	8	30.77
92	Parwan	Parwan Dam	308.8	NA		0	0	-
93	Gambhiri	Gambhiri Dam	431.90	**433.4**	**15/08/2022 08**	0	0	-
94	Gambhiri	Panchana Dam	258.62	**259.95**	**31/08/2022 08**	0	0	-
95	Mej	Gudha Dam	305.87	**305.99**	**02/09/2022 08**	0	0	-
96	Parwati	Parwati Dam	308.15	NA		0	0	-
97	Mahi	Mahi Bajajsagar Dam	281.5	**286.8**	**11/11/2022 08**	4	4	100.00
98	Som Kamla	Som Kamla Amba Dam	213.5	**213.5**	**30/09/2022 07**	0	0	-
	Sikkim							
99	Teesta	Teesta-III HEP Dam Chungta	1585	**15661**	**22/11/2022 12**	0	0	-
100	Teesta	Teesta V HEP Dam Singtam	579	**5743.1**	**25/11/2022 22**	0	0	-
101	Rongpo	Rongpo Dam	913.8	**910.75**	**14/08/2022 03**	0	0	-
102	Rongli	Rongli Dam	913.8	**910.74**	**14/08/2022 04**	0	0	-
103	Rangit	Rangit-III HEP Dam	640	**639.12**	**26/11/2022 14**	0	0	-
	Tamilnadu							
104	Cauvery	Mettur Dam	240.79	**277.61**	**26/10/2022 08**	168	151	89.88
105	Bhavani	Bhavanisagar Dam	280.42	**280.4**	**23/12/2022 08**	53	38	71.70
106	Kodaganar	Kodaganar Dam	200.25	**252.59**	**26/10/2022 06**	0	0	-
107	Cauvery	Grand Anicut	59.21	**88.06**	**14/12/2022 06**	212	172	81.13
108	Cauvery	Upper Anicut	74.4	**95.36**	**26/10/2022 06**	213	187	87.79
109	Kosasthaliyar	Poondi Satyamurthy reservoi	42.67	**42.67**	**30/12/2022 06**	4	2	50.00
110	Adyar	Chembarampakkam	26.03	**87.78**	**02/07/2022 06**	1	0	0.00

111	South Pennar	Sathnur Dam	222.2	283.3	24/07/2022 06	13	9	69.23
112	Gomukhinadi	Gomukhi Dam	183.18	182.79	31/12/2022 06	0	0	-
113	Periyar Odai	Wellington Dam	72.54	71.86	18/11/2022 06	0	0	-
114	Vaigai	Vaigai Dam	279.20	342.63	26/10/2022 06	63	55	87.30
	Telangana							
115	Manjira	Singur Dam	523.6	523.6	12/10/2022 12	1	1	100.00
116	Manjira	Nizamsagar Dam	428.24	1403.55	28/12/2022 13	1	1	100.00
117	Godavari	Sriram Sagar	332.54	629.66	01/05/2022 08	50	48	96.00
118	Kaddamvagu	Kaddam Dam	213.21	697.25	15/11/2022 08	2	2	100.00
119	Godavari	Sripada Yellampally Dam	148.00	148	02/11/2022 23	59	57	96.61
120	Godavari	Laxmi Barrage	100.00	104	15/07/2022 03	91	90	98.90
121	Godavari	PVNR Kanthapally Project	83	88.8	15/07/2022 02	106	104	98.11
122	Krishna	Priyadarshini	318.51	318.51	10/11/2022 08	177	171	96.61
123	Musi	Musi Project	196.60	290.7	04/08/2022 08	20	12	60.00
	Tripura							
	Uttar Pradesh							
123	Ganga	Dharmanagri Barrage	220.45	219.9	05/07/2022 08	102	89	87.25
124	Ganga	Narora Barrage	179.07	179.07	19/05/2022 08	19	17	89.47
125	Betwa	Matatilia Dam	308.46	308.46	17/09/2022 08	29	22	75.86
126	Ghaghra	Katerniaghat Dam	136.8	1550	04/08/2022 00	70	70	100.00
127	Rihand	Rihand Dam	265.18	261.61	23/10/2022 08	16	1	6.25
	Uttarakhand							
128	Ramganga	Kalagarh Dam	365.3	359.86	09/12/2022 08	0	0	-
129	Sharda	Banbasa	222.96	222.9	02/06/2022 08	6	6	100.00
	West Bengal							
130	Mayurakshi	Tilpara Barrage	62.79	62.76	28/08/2022 07	4	4	100.00
131	Damodar	Durgapur Barrage	64.47	634.47	28/12/2022 03	58	58	100.00
132	Kangsabati	Hinglow Dam	97.84	363.02	25/11/2022 08	0	0	-
133	Kangsabati	Kangsabati Dam	134.11	132.45	25/08/2022 20	19	18	94.74
			Total Inflow Forecast			**4779**	**4369**	**91.42**
			Total Level Forecast			**6779**	**6476**	**95.53**
			Total Forecast			**11558**	**10845**	**93.83**

Extreme Flood

Sl. No.	State	District	River	Station	Period	
					From	To
1	Assam	Nagaon	Kopili	Kampur	15/05/2022 1600 hrs	21/05/2022 2000hrs
					16/06/2022 1600 hrs	22/06/2022 1600hrs
2	Bihar	Kishanganj	Mahananda	Taibpur	29/06/2022 0400 hrs	29/06/2022 0800hrs
3		Supaul	Kosi	Basua	02/08/2022 1900 hrs	02/08/2022 2200 hrs
4		Siwan	Ghagra	Darauli	14/10/2022 0600 hrs	16/10/2022 2200hrs
5	Telangana	Bhupalpally	Godavari	Kaleswaram	14/07/2022 0600hrs	15/07/2022 1200hrs
6		Kumarambheem	Wardha	Sirpur(T)	14/07/2022 0300 hrs	17/07/2022 0200hrs
7	Andhra Pradesh	Alluri Sitharama raju	Sabri	Chinturu	15/07/2022 0100hrs	19/07/2022 1000hrs
8	Rajasthan	Karauli	Chambal	Manderial	25/08/2022 0400 hrs	25/08/2022 1100 hrs
9		Dholpur	Chambal	Dholpur	25/08/2022 0600hrs	26/08/2022 0700hrs
10	Uttar Pradesh	Balrampur	Rapti	Balrampur	08/10/2022 1100 hrs	13/10/2022 1900 hrs
11		Siddharthnagar	Rapti	Bansi	14/10/2022 1600hrs	19/10/2022 0900 hrs

Severe Flood

Sl. No.	State	District	River	Station
1	Assam	Jorhat	Brahmaputra	Neamatighat
2		Sivasagar	Desang	Nanglamoraghat
3		Dibrugarh	Buridehing	Khowang
4		Morigaon	Kopili	Dharamtul
5		Cachar	Barak	Annapurnaghat
6		Karimganj	Barak	Badarpurghat
7		Karimganj	Kushiyara	Karimganj
8		Hailakandi	Katakhal	Matizuri
9		Goalpara	Brahmaputra	Goalpara
10		Dhubri	Brahmaputra	Dhubri
11		Barpeta	Manas	Manas NH Xing
12		Kamrup	Brahmaputra	Guwahati DC Court
13		Nalbari	Pagladiya	Pagladiya NT Rd Crossing
14		Kokrajhar	Gaurang	Kokrajhar
15		Barpeta	Beki	Beki Rd Bridge
16		Sonitpur	Brahmaputra	Tezpur
17		Kamrup	Puthimari	Puthimari N H Crossing

18		Lakhimpur	Subansiri	Badatighat
19		Sonitpur	Jiabharali	Jia-Bharali NT Road Crossing
20		Dhubri	Sankosh	Golokganj
21	Jammu and Kashmir	Srinagar	Jhelum	Rammunshibagh
22		Anantnag	Jhelum	Sangam
23		Bandipora	Jhelum	Safapora
24	Bihar	Madhubani	Kamalabalan	Jainagar
25		Araria	Parwan	Araria
26		Purnea	Mahananda	Dhengraghat
27		Madhubani	Kamlabalan	Jhanjharpur
28		Sitamarhi	Lakhanadi	Runisaidpur
29		Muzzafarpur	Bagmati	Benibad
30		Katihar	Mahananda	Jhawa
31		Gopalganj	Gandak	Dumariaghat
32		Sitamarhi	Bagmati	Dheng Bridge
33		Khagaria	Kosi	Baltara
34		Katihar	Kosi	Kursela
35		Khagaria	Burhi Gandak	Khagaria
36		Bhagalpur	Ganga	Kahalgaon
37		Patna	Sone	Maner
38		Muzzafarpur	Gandak	Rewaghat
39		Patna	Ganga	Gandhighat
40		Bhagalpur	Ganga	Bhagalpur
41		Siwan	Ghagra	Gangpur Siswan
42		Patna	Ganga	Dighaghat
43		Buxar	Ganga	Buxar
44		Patna	Ganga	Hatidah
45	West Bengal	Jalpaiguri	Tista	Domohani
46		Alipurduar	Torsa	Hasimara
47		Coochbehar	Torsa	Ghugumari
48		Murshidabad	Ganga	Farakka
49	Tamilnadu	Erode	Cauvery	Kodumudi
50		Tiruchirapalli	Cauvery	Musiri
51	Andhra Pradesh	Kurnool	Tungabhadra	Mantralayam
52		East Godavari	Godavari	Kunavaram
53		East Godavari	Godavari	Dowlaiswaram
54		Srikakulam	Nagavali	Srikakulam
55	Telangana	Kothagudem	Godavari	Bhadrachalam
56		Kothagudem	Godavari	Dummugudem
57		Mulugu	Godavari	Eturunagaram
58	Chhatisgarh	Bastar	Indravathi	Jagdalpur
59		Gajapati	Vamsadhara	Kashinagar
60		Baitarani	Bhadrak	Akhuapada

61	Odisha	Baitarani	Keonjar	Anandpur
62		Balasore	Subarnarekha	Rajghat
63		Balasore	Jalaka	Mathani Rd Bridge
64		Cuttack	Mahanadi	Naraj
65		Jagatsinghpur	Mahanadi	Alipingal Devi
66	Uttar Pradesh	Badaun	Ganga	Kachlabridge
67		Barabanki	Ghaghra	Elginbridge
68		Ballia	Ghaghra	Turtipar
69		Ghazipur	Ganga	Ghazipur
70		Ballia	Ganga	Ballia
71		Varanasi	Ganga	Varanasi
72		Allahbad	Ganga	Phaphamau
73		Auraiya	Yamuna	Auraiya
74		Etawah	Yamuna	Etawah
75		Hamirpur	Betwa	Sahijina
76		Allahbad	Yamuna	Naini
77		Banda	Ken	Banda
78		Hamirpur	Yamuna	Hamirpur
79		Jalaun	Yamuna	Kalpi
80		Ayodhya	Ghaghra	Ayodhya
81		Gorakhpur	Rapti	Birdghat
82		Shahjahanpur	Ganga	Dabri
83		Shrawasti	Rapti	Kakardhari
84		Kushinagar	Gandak	Khadda
85		Banda	Yamuna	Chillaghat
86	Maharashtra	Bhandara	Wainganga	Pauni
87		Bhandara	Wainganga	Bhandara
88	Jharkhand	Sahibganj	Ganga	Sahibganj
89		Purba Singhbhum	Subarnarekha	Jamshedpur
90	Madhya Pradesh	Mandla	Narmada	Mandla
91		Hoshangabad	Narmada	Hoshangabad
92	Uttarakhand	Haridwar	Ganga	Haridwar
93	Rajasthan	Kota	Chambal	Kota City
94	NCT Delhi	North Delhi	Yamuna	Delhi Rly Bridge
95	Gujarat	Bharuch	Narmada	Bharuch

Above Normal

Sl. No.	State	District	River	Station
1		Golaghat	Dhansiri(s)	Numaligarh

2	Assam	Lakhimpur	Ranganadi	Ranganadi NT Rd Crossing
3		Sivasagar	Dikhow	Sivasagar
4		Dibrugarh	Brahmaputra	Dibrugarh
5	Bihar	Munger	Ganga	Munger
6		Darbhanga	Adhwara gr.	Kamtaul
7		Vaishali	Gandak	Hazipur
8		Adhwara	Sitamarhi	Sonebarsa
9		Patna	Punpun	Sripalpur
10	Uttar Pradesh	Kanpur	Ganga	Kanpur
11		Rae-Bareilly	Ganga	Dalmau
12		Kanpur	Ganga	Ankinghat
13		Mirzapur	Ganga	Mirzapur
14		Allahbad	Ganga	Allahbad
15		Farukkabad	Ganga	Fategarh
16		Ghaziabad	Ganga	Garhmukhteshwar
17		Kannauj	Ganga	Kannauj
18		Moradabad	Ramganga	Moradabad
19		Muzzafarnagar	Yamuna	Mawi
20		Mathura	Yamuna	Mathura
21		Jalaun	Betwa	Mohana
22	Uttrakhand	Dehradun	Ganga	Rishikesh
23		Pauri Garhwal	Alaknanda	Srinagar
24	Maharashtra	Chandrapur	Wardha	Balharsha
25		Ahmednagar	Godavari	Kopergaon
26		Nasik	Godavari	Nasik
27	Tripura	West Tripura	Gumti	Sonamura
28	West Bengal	Coochbehar	Jaldhaka	Mathabhanga
29		Jalpaiguri	Jaldhaka	NH 31
30		Coochbehar	Raidak-I	Tufanganj
31		Coochbehar	Teesta	Mekhliganj
32	Andhra Pradesh	Kurnool	Tungabhadra	Kurnool Town
33		East Godavari	Godavari	Rajamundry
34		East Godavari	Godavari	Atreyapuram
35	Madurai	Erode	Bhavani	Savandapur
36		Madurai	Vaigai	Madurai
37	Kerala	Pathanmitta	Pamba	Malakkara
38	Odisha	Puri	Mahanadi	Nimapara
39		Rayagada	Vamsadhara	Gunupur
40		Balasore	Burhabalang	Govindpur (NH5 Rd Bridge)
41	Rajasthan	Sirohi	Banas	Abu Road
42	Karnataka	Gulbarga	Bhima	Deongaon Bridge

Inflow Forecast

Sl. No.	State	District	River	Station
1	Tamilnadu	Salem	Cauvery	Mettur Dam
2		Thanjavur	Cauvery	Grand Anicut
3		Tiruchirapalli	Cauvery	Upper Anicut
4		Erode	Bhavani	Bhavanisagar Dam
5		Thiruvannamalai	Ponnaiyar	Sathanur Dam
6		Tiruvallur	Adyar	Chembarampakkam Lake
7		Tiruvallur	Kosasthaliyar	Poondi Satyamurthy reservoir
8		Theni	Vaigai	Vaigai Dam
9	Karnataka	Mysore	Kabini	Kabini Dam
10		Vijayapura	Krishna	Almatti Dam
11		Mandya	Cauvery	Krishnarajasagar Dam
12		Chikmagaluru	Bhadra	Bhadra Dam
13		Shivamogga	Tunga	Upper Tunga
14		Bagalkot	Krishna	Hippargi Dam
15		Belgaum	Malaprabha	Malaprabha Dam
16		Ballari	Tungabhadra	Tungabhadra Dam
17		Gadag	Krishna	Singatalur Barrage
18		Belagavi	Ghat Prabha	Hidkal Dam
19		Vijayapura	Krishna	Narayanpur Dam
20		Coorg	Harangi	Harangi Dam
21		Hassan	Hemavathy	Hemavathy Dam
22	Andhra Pradesh	Kurnool	Krishna	Srisailam Dam
23		Krishna	Krishna	Prakasham Barrage
24		Kurnool	Tungabhadra	Sunkesula Barrage
25		Guntur	Krishna	Dr KLRS Pulichintala Dam
26		West Godavari	Godavari	Indirasagar (Polavaram)
27		Srikakulam	Vamsadhara	Gotta Barrage
28		Vizianagaram	Nagavali	Thottapally Reservoir
29		Srikakulam	Nagavali	Narayanpuram Dam
30		Vizianagaram	Nagavali	Madduvalasa Reservoir
31		Nellore	North Pennar	Somasila Dam
32	Chhattisgarh	Dhamtari	Mahanadi	Ravishankar Sagar Dam
33		Korba	Hasdeo	Bango Dam
34	Gujarat	Surat	Tapi	Ukai Dam
35		Valsad	Damanganga	Madhuban Dam
36		Mehsana	Sabarmati	Dharoi Dam
37		Mahisagar	Mahi	Kadana Dam
38		Narmada	Narmada	Sardar Sarovar Dam
39		Banaskanta	Banas	Dantiwada Dam
40		Lalitpur	Betwa	Rajghat Dam
41		Raisan	Narmada	Barna Dam

42	Madhya Pradesh	Khandwa	Narmada	Indirasagar Dam
43		Hoshangabad	Narmada	Tawa Dam
44		Mandsaur	Chambal	Gandhisagar Dam
45		Shahdol	Sone	Bansagar Dam
46		Jabalpur	Narmada	Bargi Dam
47		Sivpuri	Sindh	Madikhera
48	Maharashtra	Satara	Koyna	Koyna Dam
49		Aurangabad	Godavari	Jaikwadi Dam
50		Jalgaon	Tapi	Hathnur Dam
51		Solapur	Bhima	Ujjani Dam
52		Bhandara	Wainganga	Gosikhurd Dam
53		Satara	Nira	Veer Dam
54		Nagpur	Pench	Totladah Dam
55		Yavatmal	Penganga	Issapur/Upper Penganga Projct.
56		Kolhapur	Warna	Warna Dam
57		Amaravati	Wardha	Upper Wardha Project
58	Odisha	Sambalpur	Mahanadi	Hirakud Dam
59		Kendujhar	Baitarani	Salandi Dam
60		Angul	Brahmani	Rengali Dam
61	Rajasthan	Jhalawar	Kalisindh	Kalisindh Dam
62		Chittorgarh	Chambal	Rana Pratap Sagar
63		Banswara	Mahi	Mahi Bajajsagar Dam
64	Telangana	Wanaparthy	Krishna	Priyadarshini Jurala
65		Nizamabad	Godavari	Sriram Sagar Dam
66		Karimnagar	Godavari	Sripada Yellempally Dam
67		Nalgonda	Musi	Musi Project
68		Bhupalpally	Godavari	Laxmi Barrage
69		Warangal	Godavari	PNVR Kanthapally Project
70		Kama Reddy	Manjira	Nizam Sagar Dam
71		Sanga Reddy	Manjira	Singur Dam
72		Adilabad	Kaddamvagu	Kaddam Dam
73	Uttar Pradesh	Bahraich	Ghagra	Katerniaghat Dam
74		Lalitpur	Betwa	Matatila Dam
75		Bijnor	Ganga	Dharmanagri Barrage
76		Sonebhadra	Rihand	Rihand Dam
77		Bulandshahar	Ganga	Narrora Barrage
78	Jharkhand	Bokaro	Damodar	Tenughat Dam
79		Dhanbad	Damodar	Panchet Dam
80		Dhanbad	Barakar	Maithon Dam
81		Sahibganj	Subarnarekha	Chandil Dam
82		Dumka	Mayurakshi	Massanjore Dam
83		Paschim Singbhum	Subarnarekha	Galudih Barrage
84	Kerala	Idukki	Periyar	Idukki Dam
85		Ernakulam	Periyar	Edamalayar Dam

86		Kangsabati	Medinipur	Kangsabati Dam
87		Birbhum	Mayurakshi	Tilpara Barrage
88	West Bengal	Burdwan	Damodar	Durgapur Barrage
89	Uttarakhand	Champawat	Sharda	Banbasa Barrage

Performance of Flood Forecasting Stations (Divisionwise) in India during Flood Season 2022

Sl. No	Division	Level Forecasts only					Inflow Forecasts only					Total Forecast Stations				
		Stns.	F/c issued for	Level Forecast	Level Forecast Within Limit	Accuracy	Stns.	F/c issued for	Inflow Forecast	Inflow Forecast Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy
1	Himalayan Ganga Divn, Dehradun	4	2	8	3	37.50	1	1	102	89	87.25	5	3	110	92	83.64
2	Middle Ganga Division 1, Lucknow	7	7	384	380	98.96	2	2	76	76	100.00	9	9	460	456	99.13
3	Middle Ganga Division 2, Lucknow	12	9	244	239	97.95	2	1	19	17	89.47	14	10	263	256	97.34
4	Middle Ganga Division 3, Varanasi	7	6	75	60	80.00	2	2	32	5	15.63	9	8	107	65	60.75
5	Lower Ganga Division I, Patna	25	17	2209	2167	98.10	2	0	0	0	-	27	17	2209	2167	98.10
6	Lower Ganga Division 2, Patna	18	15	602	595	98.84	4	0	0	0	-	22	15	602	595	98.84
7	Upper Yamuna Divn, Delhi	6	5	56	36	64.29	1	0	0	0	-	7	5	56	36	64.29
8	Chambal Division, Jaipur	3	2	18	5	27.78	10	3	39	15	38.46	13	5	57	20	35.09
9	Lower Yamuna Divn, Agra	10	10	143	99	69.23	3	3	62	44	70.97	13	13	205	143	69.76
10	Damodar Divn, Asansol	4	0	0	0	-	13	7	226	221	97.79	17	7	226	221	97.79
11	Upper Brahmaputra Divn, Dibrugarh	19	12	976	973	99.69	0	0	0	0	-	19	12	976	973	99.69
12	Middle Brahmaputra Divn, Guwahati	9	8	498	493	99.00	0	0	0	0	-	9	8	498	493	99.00
13	Meghna Division Silchar	2	1	4	4	100.00	0	0	0	0	-	2	1	4	4	100.00
14	Meghna Investigation Divn , Shillong	4	4	279	276	98.92	0	0	0	0	-	4	4	279	276	98.92
15	Lower Brahmaputra Divn, Jalpaiguri	8	8	253	232	91.70	0	0	0	0	-	8	8	253	232	91.70
16	Eastern Rivers Divn, Bhubaneswar	11	9	178	156	87.64	9	8	48	42	87.50	20	17	226	198	87.61
17	Mahanadi Divn, Burla	3	3	34	32	94.12	3	3	87	77	88.51	6	6	121	109	90.08
18	Lower Godavari Divn, Hyderabad	10	10	354	330	93.22	5	1	113	112	99.12	15	11	467	442	94.65
19	Upper Godavari Division	4	2	36	27	75.00	13	8	322	311	96.58	17	10	358	338	94.41
20	Lower Krishna Divn, Hyderabad	4	3	112	86	76.79	11	11	1652	1553	94.01	15	14	1764	1639	92.91
21	Mahi Divn, Gandhinagar	3	0	0	0	-	6	4	51	46	90.20	9	4	51	46	90.20
22	Tapi Divn,Surat	5	1	23	23	100.00	4	4	422	417	98.82	9	5	445	440	98.88
23	Narmada Divn, Bhopal	2	2	42	42	100.00	5	4	82	82	100.00	7	6	124	124	100.00
24	Chenab Divn. Jammu	3	3	14	7	50.00	0	0	0	0	-	3	3	14	7	50.00
25	Southern River Divn. Coimbtr.	4	4	178	163	91.57	6	5	709	603	85.05	10	9	887	766	86.36
26	Hydrology Divn. Chennai	1	0	0	0	-	6	4	67	50	74.63	7	4	67	50	74.63
27	Cauvery Divn. Bangalore	0	0	0	0	-	8	8	545	511	93.76	8	8	545	511	93.76
28	UKD Pune	1	0	0	0	-	4	4	54	31	57.41	5	4	54	31	57.41
29	WGD Nagpur	4	2	56	47	83.93	7	4	60	59	98.33	11	6	116	106	91.38
30	SWRD, Kochi	3	1	3	1	33.33	2	2	11	8	72.73	5	3	14	9	64.29
31	SID Gangtak	3	0	0	0	-	5	0	0	0	-	8	0	0	0	-
Total		**199**	**146**	**6779**	**6476**	**95.53**	**134**	**89**	**4779**	**4369**	**91.42**	**333**	**235**	**11558**	**10845**	**93.83**

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2022

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	0	0	0	14	7	50.00	0	0	-	14	7	50.00
2	Ganga & tributaries	136	96	40	44	23	21	3739	3584	95.85	556	467	83.99	4295	4051	94.32
3	Brahmaputra	44	39	5	16	11	5	1727	1698	98.32	0	0	-	1727	1698	98.32
4	Barak and others	6	6	0	1	1	0	283	280	98.94	0	0	-	283	280	98.94
5	Subarnarekha including Burhabalang	7	4	3	1	0	1	98	92	93.88	15	13	86.67	113	105	92.92
6	Brahmani and Baitarni	5	3	2	1	1	0	18	13	72.22	14	10	71.43	32	23	71.88
7	East flowing rivers between Mahanadi and Pennar	8	4	4	1	1	0	62	51	82.26	19	19	100.00	81	70	86.42
8	Narmada	10	4	6	2	1	1	65	65	100.00	227	225	99.12	292	290	99.32
9	Tapi	3	1	2	1	1	0	0	0	-	251	248	98.80	251	248	98.80
10	Mahi	5	1	4	3	1	2	0	0	-	9	9	100.00	9	9	100.00
11	Sabarmati	2	1	1	1	1	0	0	0	-	30	27	90.00	30	27	90.00
12	Mahanadi	6	3	3	0			34	32	94.12	87	77	88.51	121	109	90.08
13	Godavari	43	18	25	16	4	12	446	404	90.58	495	482	97.37	941	886	94.16
14	Krishna	24	5	19	2	2		112	86	76.79	1945	1804	92.75	2057	1890	91.88
15	West flowing rivers of Kutch and saurashtra including Luni	2	1	1	1	1	0	0	0	-	12	10	83.33	12	10	83.33
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	26	26	100.00	26	26	100.00
17	Cauvery and tributaries	12	3	9	1	0	1	174	160	91.95	952	839	88.13	1126	999	88.72
18	Pennr	2	1	1	1	1	0	0	0	-	49	39	79.59	49	39	79.59
19	East flowing rivers between Pennar and Kanyakumari	7	1	6	2	0	2	4	3	75.00	81	66	81.48	85	69	81.18
20	West Flowing river Tadri to Kanyakumari	5	3	2	2	2	0	3	1	33.33	11	8	72.73	14	9	64.29
Total		**333**	**199**	**134**	**98**	**53**	**45**	**6779**	**6476**	**95.53**	**4779**	**4369**	**91.42**	**11558**	**10845**	**93.83**

Annex VIII

Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2022

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	2	2	0	297	266	89.56	956	902	94.35	1253	1168	93.22
2	Arunachal Pradesh	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
3	Assam	30	30	0	5	5	0	1831	1820	99.40	0	0	-	1831	1820	99.40
4	Bihar	43	40	3	14	11	3	2429	2384	98.15	0	0	-	2429	2384	98.15
5	Chattisgarh	3	1	2	0	0	0	18	17	94.44	10	6	60.00	28	23	82.14
6	Gujarat	13	6	7	6	5	1	23	23	100.00	352	344	97.73	375	367	97.87
7	Haryana	2	1	1	1	0	1	1	0	0.00	0	0	-	1	0	0.00
8	Himachal Pradesh	1	1	0	0	0	0	1	0	0.00	0	0	-	1	0	0.00
9	Jammu & Kashmir	3	3	0	0	0	0	14	7	50.00	0	0	-	14	7	50.00
10	Jharkhand	17	2	15	9	0	9	75	73	97.33	160	154	96.25	235	227	96.60
11	Karnataka	15	1	14	1	0	1	9	5	55.56	1225	1149	93.80	1234	1154	93.52
12	Kerala	5	3	2	2	2	0	3	1	33.33	11	8	72.73	14	9	64.29
13	Madhya Pradesh	14	2	12	4	0	4	42	42	100.00	139	111	79.86	181	153	84.53
14	Maharashtra	22	8	14	9	5	4	60	48	80.00	243	213	87.65	303	261	86.14
15	Odisha	19	12	7	6	2	4	189	171	90.48	91	81	89.01	280	252	90.00
16	Rajasthan	15	4	11	9	1	8	48	19	39.58	35	16	45.71	83	35	42.17
17	Sikkim	8	3	5	8	3	5	0	0	-	0	0	-	0	0	-
18	Tamilnadu	15	4	11	3	0	3	178	163	91.57	727	614	84.46	905	777	85.86
19	Telangana	14	5	9	0	0	0	193	169	87.56	507	486	95.86	700	655	93.57
20	Tripura	2	2	0	1	1	0	4	4	100.00	0	0	-	4	4	100.00
21	Uttar Pradesh	44	39	5	5	5	0	1025	967	94.34	236	199	84.32	1261	1166	92.47
22	Uttarakhand	6	4	2	3	2	1	8	3	37.50	6	6	100.00	14	9	64.29
23	West Bengal	16	12	4	5	4	1	288	265	92.01	81	80	98.77	369	345	93.50
24	Daman n Diu	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
25	NCT, DELHI	2	2	0	1	1	0	43	29	67.44	0	0	-	43	29	67.44
Total		**333**	**199**	**134**	**98**	**53**	**45**	**6779**	**6476**	**95.53**	**4779**	**4369**	**91.42**	**11558**	**10845**	**93.83**

Annex-IX

FLOOD FORECASTING PERFORMANCE FROM 2000 TO 2022

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
2021	6670	6456	96.79	3947	3520	89.18	10617	9976	93.96
2022	6779	6476	95.53	4779	4369	91.42	11558	10845	93.83
Average	5231	5095	97.40	1565	1406	89.84	6797	6502	95.66

Annex-X

Extreme flood events in India under CWC FF & W Network - 2022 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	Kopili	Kampur	Assam	60.50	61.79	20/07/2004	62.20	18/06/2022 1400	15/05/2022 1600 16/06/2022 1600	21/05/2022 2000 22/06/ 2022 1600
2	Mahananda	Taibpur	Bihar	66.00	67.22	28/07/2016	67.26	29/09/2022 0600	29/06/2022 0400	29/06/2022 0800
3	Kosi	Basua	Bihar	47.75	49.24	13/08/2017	49.24	02/08/2022 1900	02/08/2022 1900	02/08/2022 2200
4	Ghagra	Darauli	Bihar	60.82	61.74	29/08/1998	61.82	15/10/2022 1700	14/10/2022 0600	16/10/2022 2200
5	Godavari	Kaleswaram	Telangana	104.75	107.05	15/08/1986	108.19	15/07/2022 0000	14/07/2022 0600	15/07/2022 1200
6	Wardha	Sirpur(T)	Telangana	160.95	161.34	18/08/2018	162.57	15/07/2022 0400	14/07/2022 0300	17/07/2022 0200
7	Sabri	Chinturu	Andhra Pradesh	43.00	44.91	18/08/2020	49.4	16/07/2022 1800	15/07/2022 0100	19/07/2022 1000
8	Chambal	Manderial	Rajasthan	165.00	169.96	23/08/1996	170.05	25/08/2022 0600	25/08/2022 0400	25/08/2022 1100
9	Chambal	Dholpur	Rajasthan	130.79	145.54	23/08/1996	146.57	25/08/2022 1900	25/08/2022 0600	26/08/2022 0700
10	Rapti	Balrampur	Uttar Pradesh	104.62	105.54	15/08/2017	106.07	10/10/2022 0700	08/10/2022 1100	13/10/2022 1900
11	Rapti	Bansi	Uttar Pradesh	84.90	85.95	03/09/2021	86.27	16/10/2022 0400	14/10/2022 1600	19/10/2022 0900

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
1	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	535.34	05/08/2022	13/07/2022 08	13/07/2022 09	1	-	-	-
								14/07/2022 08	14/07/2022 17	1	-	-	-
								28/07/2022 08	28/07/2022 11	1	-	-	-
								31/07/2022 00	31/07/2022 01	1	-	-	-
								05/08/2022 10	05/08/2022 16	1	-	-	-
2	Ganga	Rishikesh	Uttarakhand	339.50	340.50	339.5	20/08/2022	20/08/2022 21	20/08/2022 21	1	-	-	-
3	Ganga	Haridwar	Uttarakhand	293.00	294.00	294.68	20/08/2022	28/07/2022 19	28/07/2022 19	1	-	-	-
								31/07/2022 13	31/07/2022 13	1	-	-	-
								05/08/2022 18	05/08/2022 19	1	-	-	-
								07/08/2022 19	07/08/2022 19	1	-	-	-
								20/08/2022 05	21/08/2022 01	2	-	-	-
4	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.2	12/07/2022	-	-	-	-	-	-
5	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	125.48	16/10/2022	13/10/2022 06	19/10/2022 23	7	-	-	-
6	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	123.49	16/10/2022	30/09/2022 23	03/10/2022 03	4	-	-	-
								12/10/2022 18	20/10/2022 12	9	-	-	-
7	Ganga	Kanpur	Uttar Pradesh	112.00	114.00	112.47	17/10/2022	14/10/2022 09	20/10/2022 12	7	-	-	-
8	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	98.43	18/10/2022	17/10/2022 10	19/10/2022 22	3	-	-	-
9	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	85.93	29/08/2022	25/08/2022 10	01/09/2022 07	8	26/08/2022 11	31/08/2022 16	6
10	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	85.1	29/08/2022	26/08/2022 03	31/08/2022 17	6	27/08/2022 19	30/08/2022 21	4
11	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	78.11	30/08/2022	26/08/2022 08	01/09/2022 06	7	28/08/2022 10	31/08/2022 09	4
12	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	72.14	29/08/2022	25/08/2022 13	02/09/2022 00	9	27/08/2022 00	01/09/2022 06	6
13	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	64.39	31/08/2022	20/08/2022 02	03/09/2022 03	15	26/08/2022 05	02/09/2022 10	8
14	Ganga	Buxar	Bihar	59.32	60.32	60.69	01/09/2022	20/08/2022 23	23/08/2022 16	4	28/08/2022 04	30/08/2022 23	3
								25/08/2022 09	30/08/2022 23	6	01/09/2022 00	02/09/2022 04	2
								01/09/2022 00	03/09/2022 11	3	-	-	-
15	Ganga	Ballia	Uttar Pradesh	56.62	57.62	59.76	31/08/2022	18/08/2022 14	06/09/2022 06	20	19/08/2022 23	04/09/2022 05	16
								21/09/2022 22	02/10/2022 02	12	15/10/2022 07	18/10/2022 17	4
								13/10/2022 23	21/10/2022 23	9	-	-	-
16	Ganga	Patna Dighaghat	Bihar	49.45	50.45	50.77	01/09/2022	21/08/2022 01	30/08/2022 23	10	29/08/2022 11	30/08/2022 23	2
								01/09/2022 00	05/09/2022 08	5	01/09/2022 00	03/09/2022 20	3
								13/10/2022 10	20/10/2022 01	8	-	-	-
17	Ganga	Patna Gandhighat	Bihar	47.60	48.60	49.6	01/09/2022	02/08/2022 22	06/08/2022 22	5	22/08/2022 00	23/08/2022 17	2
								19/08/2022 16	09/09/2022 09	22	25/08/2022 02	30/08/2022 23	6
								20/09/2022 10	02/10/2022 12	13	01/09/2022 00	05/09/2022 00	5
								08/10/2022 05	23/10/2022 07	16	14/10/2022 21	19/10/2022 08	6
18	Ganga	Hathidah	Bihar	40.76	41.76	42.7	02/09/2022	04/08/2022 04	07/08/2022 16	4	22/08/2022 21	30/08/2022 23	9
								20/08/2022 05	10/09/2022 18	22	01/09/2022 00	06/09/2022 02	6
								20/09/2022 16	04/10/2022 02	15	11/10/2022 02	21/10/2022 10	11
								08/10/2022 02	25/10/2022 10	17	-	-	-
19	Ganga	Munger	Bihar	38.33	39.33	39.1	04/09/2022	27/08/2022 11	30/08/2022 23	4	-	-	-
								01/09/2022 00	06/09/2022 15	6	-	-	-
								16/10/2022 23	20/10/2022 13	5	-	-	-
20	Ganga	Bhagalpur	Bihar	32.68	33.68	33.94	02/09/2022	23/08/2022 10	30/08/2022 23	8	01/09/2022 00	06/09/2022 02	6
								01/09/2022 00	08/09/2022 22	8	-	-	-
								24/09/2022 09	28/09/2022 07	5	-	-	-
								11/10/2022 20	23/10/2022 10	13	-	-	-
21	Ganga	Colgong/ Kahalgaon	Bihar	30.09	31.09	32.05	04/09/2022	03/08/2022 21	11/08/2022 06	9	25/08/2022 15	30/08/2022 23	6
								21/08/2022 16	12/09/2022 16	23	01/09/2022 00	09/09/2022 13	9
								19/09/2022 13	05/10/2022 16	17	25/09/2022 19	27/09/2022 08	3
								08/10/2022 16	26/10/2022 15	19	12/10/2022 22	22/10/2022 16	11
22	Ganga	Sahibganj	Jharkhand	26.25	27.25	28.23	19/10/2022	03/08/2022 22	13/08/2022 05	11	27/08/2022 06	30/08/2022 23	4
								22/08/2022 08	14/09/2022 03	24	01/09/2022 00	09/09/2022 07	9
								19/09/2022 17	07/10/2022 20	19	25/09/2022 15	27/09/2022 06	3
								08/10/2022 22	27/10/2022 02	20	13/10/2022 15	23/10/2022 21	11
23	Ganga	Farakka	West Bengal	21.25	22.25	23.23	05/09/2022	03/08/2022 01	03/08/2022 15	1	27/08/2022 10	30/08/2022 23	4
								04/08/2022 11	12/08/2022 09	9	01/09/2022 00	10/09/2022 04	10
								22/08/2022 15	14/09/2022 14	24	14/10/2022 15	22/10/2022 20	9
								22/09/2022 08	06/10/2022 12	15	-	-	-
								11/10/2022 06	26/10/2022 05	16	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
24	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	190.31	13/10/2022	10/10/2022 21	15/10/2022 19	6	-	-	-
25	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	160.97	13/10/2022	-	-	-	-	-	-
26	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	231.16	27/09/2022	27/09/2022 05	27/09/2022 22	1	-	-	-
27	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	206.59	28/09/2022	01/08/2022 00	03/08/2022 22	3	07/08/2022 17	08/08/2022 05	2
								05/08/2022 23	10/08/2022 20	6	12/08/2022 16	14/08/2022 01	3
								12/08/2022 11	15/08/2022 23	4	26/09/2022 21	29/09/2022 11	4
								17/08/2022 00	18/08/2022 11	2	-	-	-
								22/08/2022 16	23/08/2022 04	2	-	-	-
								26/09/2022 01	03/10/2022 07	8	-	-	-
28	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	165.46	30/09/2022	29/09/2022 13	01/10/2022 21	3	-	-	-
29	Yamuna	Agra	Uttar Pradesh	151.40	152.40	150.3	01/10/2022	-	-	-	-	-	-
30	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	122.1	27/08/2022	25/08/2022 21	28/08/2022 09	4	26/08/2022 18	27/08/2022 15	2
31	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	117.98	27/08/2022	19/08/2022 05	19/08/2022 21	1	24/08/2022 10	29/08/2022 12	6
								24/08/2022 05	29/08/2022 17	6	-	-	-
32	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.93	27/08/2022	19/08/2022 08	20/08/2022 03	2	24/08/2022 12	30/08/2022 11	7
								24/08/2022 07	30/08/2022 16	7	-	-	-
33	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	107.51	27/08/2022	19/08/2022 12	19/08/2022 22	1	24/08/2022 07	30/08/2022 01	7
								24/08/2022 02	30/08/2022 09	7	-	-	-
34	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	102.83	27/08/2022	24/08/2022 04	30/08/2022 23	7	24/08/2022 10	30/08/2022 17	7
35	Yamuna	Naini	Uttar Pradesh	83.74	84.74	85.9	29/08/2022	25/08/2022 11	01/09/2022 03	8	26/08/2022 14	31/08/2022 12	6
36	Sahibi	Dhansa	NCT Delhi	211.44	212.44	211.05	09/10/2022	-	-	-	-	-	-
37	Betwa	Mohana	Uttar Pradesh	121.66	122.66	122.03	23/08/2022	23/08/2022 08	24/08/2022 05	2	-	-	-
38	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	106.92	26/08/2022	24/08/2022 05	29/08/2022 22	6	24/08/2022 14	29/08/2022 13	6
39	Ken	Banda	Uttar Pradesh	103.00	104.00	105.67	24/08/2022	22/08/2022 21	25/08/2022 00	4	23/08/2022 01	24/08/2022 19	2
40	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	106.16	30/10/2022	-	-	-	-	-	-
41	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	71.13	14/10/2022	-	-	-	-	-	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	99.31	20/09/2022	-	-	-	-	-	-
43	Ghaghra	Elginbridge	Uttar Pradesh	105.07	106.07	107.36	12/10/2022	01/07/2022 14	02/07/2022 15	2	01/08/2022 20	02/08/2022 09	2
								10/07/2022 14	04/10/2022 02	87	06/08/2022 00	09/08/2022 16	4
								06/10/2022 18	23/10/2022 05	18	30/08/2022 20	31/08/2022 14	2
								-	-	-	03/09/2022 11	05/09/2022 12	3
								-	-	-	17/09/2022 10	21/09/2022 09	5
								-	-	-	26/09/2022 13	28/09/2022 13	3
								-	-	-	08/10/2022 00	16/10/2022 08	9
44	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	93.98	13/10/2022	12/07/2022 08	12/07/2022 22	1	04/09/2022 16	05/09/2022 22	2
								17/07/2022 05	18/07/2022 17	2	18/09/2022 02	22/09/2022 05	5
								21/07/2022 20	29/08/2022 05	9	27/09/2022 18	28/09/2022 23	2
								30/08/2022 08	10/09/2022 17	12	08/10/2022 17	18/10/2022 01	11
								11/09/2022 11	04/10/2022 02	24	-	-	-
								06/10/2022 04	25/10/2022 15	20	-	-	-
45	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	65.68	15/10/2022	23/07/2022 09	26/07/2022 14	4	03/08/2022 20	04/08/2022 16	4
								29/07/2022 15	17/08/2022 02	20	07/08/2022 20	11/08/2022 14	5
								19/08/2022 13	20/08/2022 16	2	05/09/2022 15	07/09/2022 23	3
								25/08/2022 03	25/08/2022 13	1	18/09/2022 22	25/09/2022 10	8
								01/09/2022 02	11/09/2022 06	11	28/09/2022 01	01/10/2022 05	4
								15/09/2022 08	05/10/2022 09	21	09/10/2022 02	21/10/2022 17	13
								06/10/2022 00	31/10/2022 00	26	-	-	-
46	Ghaghra	Darauli	Bihar	59.82	60.82	61.82	15/10/2022	23/07/2022 19	26/07/2022 15	4	19/09/2022 15	24/09/2022 20	6
								31/07/2022 03	16/08/2022 19	17	29/09/2022 09	30/09/2022 15	2
								31/08/2022 00	31/08/2022 23	1	09/10/2022 13	20/10/2022 11	12
								01/09/2022 13	11/09/2022 06	11	-	-	-
								15/09/2022 13	06/10/2022 00	22	-	-	-
								07/10/2022 06	30/10/2022 02	24	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
47	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	57.96	16/10/2022	02/09/2022 07	05/09/2022 00	4	23/09/2022 01	24/09/2022 04	2
								06/09/2022 01	08/09/2022 12	3	12/10/2022 01	19/10/2022 12	8
								20/09/2022 01	23/09/2022 01	4	-	-	-
								24/09/2022 05	27/09/2022 05	4	-	-	-
								28/09/2022 08	02/10/2022 00	5	-	-	-
								10/10/2022 01	12/10/2022 00	3	-	-	-
								19/10/2022 13	30/10/2022 02	12	-	-	-
48	Ghaghra	Chhapra	Bihar	52.68	53.68	52.2	01/09/2022	-	-	-	-	-	-
49	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	106.07	10/10/2022	02/09/2022 10	03/09/2022 13	2	18/09/2022 22	20/09/2022 03	3
								17/09/2022 14	22/09/2022 09	6	06/10/2022 19	15/10/2022 20	10
								25/09/2022 07	26/09/2022 19	2	-	-	-
								06/10/2022 09	18/10/2022 02	13	-	-	-
50	Rapti	Bansi	Uttar Pradesh	83.90	84.90	86.27	16/10/2022	19/09/2022 04	23/09/2022 06	5	10/10/2022 17	22/10/2022 06	13
								26/09/2022 18	26/09/2022 22	1	-	-	-
								06/10/2022 23	24/10/2022 03	19	-	-	-
51	Rapti	Birdghat	Uttar Pradesh	73.98	74.98	76.11	17/10/2022	18/09/2022 23	25/09/2022 23	8	09/10/2022 06	24/10/2022 23	16
								07/10/2022 07	27/10/2022 18	21	-	-	-
52	Sone	Inderpuri	Bihar	107.20	108.20	103.27	24/08/2022	-	-	-	-	-	-
53	Sone	Koelwar	Bihar	54.52	55.52	52.65	02/09/2022	-	-	-	-	-	-
54	Sone	Maner	Bihar	51.00	52.00	52.57	01/09/2022	20/08/2022 10	30/08/2022 23	11	27/08/2022 01	30/08/2022 23	4
								01/09/2022 00	05/09/2022 04	5	01/09/2022 00	03/09/2022 18	3
								13/10/2022 03	20/10/2022 04	8	-	-	-
55	PunPun	Sripalpur	Bihar	49.60	50.60	49.64	27/08/2022	27/08/2022 02	28/08/2022 12	2	-	-	-
56	Yamuna	Karnal Bridge	Haryana	248.80	249.50	248.3	27/09/2022	-	-	-	-	-	-
57	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	383	26/09/2022	-	-	-	-	-	-
58	Gandak	Khadda	Uttar Pradesh	95.00	96.00	96.32	07/10/2022	19/06/2022 21	20/06/2022 11	2	07/10/2022 03	08/10/2022 10	2
								25/06/2022 13	01/07/2022 06	7	-	-	-
								09/07/2022 22	10/07/2022 18	2	-	-	-
								21/07/2022 05	16/08/2022 07	27	-	-	-
								19/08/2022 15	22/08/2022 07	4	-	-	-
								24/08/2022 12	25/08/2022 08	2	-	-	-
								27/08/2022 17	08/09/2022 23	13	-	-	-
								10/09/2022 00	14/09/2022 10	5	-	-	-
								15/09/2022 06	20/09/2022 00	6	-	-	-
								06/10/2022 05	13/10/2022 11	8	-	-	-
59	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	137.44	26/08/2022	17/07/2022 14	19/07/2022 00	3	-	-	-
								29/07/2022 12	29/07/2022 15	1	-	-	-
								01/08/2022 03	29/08/2022 16	29	-	-	-
								20/09/2022 16	04/10/2022 21	15	-	-	-
								09/10/2022 12	19/10/2022 19	11	-	-	-
60	Ganga	Dabri	Uttar Pradesh	136.30	137.30	137.66	16/10/2022	29/09/2022 09	01/10/2022 22	3	14/10/2022 06	18/10/2022 10	5
								11/10/2022 13	22/10/2022 07	12	-	-	-
61	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	198.65	09/08/2022	13/07/2022 15	13/07/2022 16	1	-	-	-
								29/07/2022 13	02/08/2022 14	5	-	-	-
								04/08/2022 10	04/08/2022 13	1	-	-	-
								05/08/2022 09	10/08/2022 20	6	-	-	-
								11/08/2022 14	11/08/2022 20	1	-	-	-
								12/08/2022 09	13/08/2022 16	2	-	-	-
								16/08/2022 13	17/08/2022 21	2	-	-	-
								20/08/2022 19	23/08/2022 06	4	-	-	-
								19/09/2022 06	19/09/2022 10	1	-	-	-
								27/09/2022 09	27/09/2022 21	1	-	-	-
								12/10/2022 01	12/10/2022 06	1	-	-	-
62	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.73	24/08/2022	03/07/2022 19	04/07/2022 10	2	15/07/2022 13	17/07/2022 22	3
								10/07/2022 19	08/09/2022 18	61	27/07/2022 05	28/07/2022 17	2
								13/09/2022 15	06/11/2022 02	55	30/07/2022 17	20/08/2022 07	22
								-	-	-	21/08/2022 20	26/08/2022 14	6
								-	-	-	27/08/2022 00	27/08/2022 10	1
								-	-	-	31/08/2022 18	01/09/2022 06	2
								-	-	-	18/09/2022 18	21/09/2022 15	4
								-	-	-	22/09/2022 06	03/10/2022 01	12

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
								-	-	-	09/10/2022 04	16/10/2022 21	8
63	Gandak	Chatia	Bihar	68.15	69.15	68.13	09/10/2022	-	-	-	-	-	-
64	Gandak	Rewaghat	Bihar	53.41	54.41	54.92	10/10/2022	30/06/2022 23	02/07/2022 16	3	05/08/2022 11	06/08/2022 09	2
								02/08/2022 13	10/08/2022 08	9	31/08/2022 11	31/08/2022 23	1
								29/08/2022 22	01/09/2022 08	4	08/10/2022 17	11/10/2022 17	4
								02/09/2022 13	06/09/2022 20	5	-	-	-
								17/09/2022 01	20/09/2022 11	4	-	-	-
								07/10/2022 22	13/10/2022 08	7	-	-	-
65	Gandak	Hazipur	Bihar	49.32	50.32	49.61	01/09/2022	29/08/2022 19	30/08/2022 23	2	-	-	-
								01/09/2022 00	04/09/2022 08	4	-	-	-
66	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	61.42	04/08/2022	-	-	-	-	-	-
67	Burhi Gandak	Muzaffarpur (Sikandarpur	Bihar	51.53	52.53	50.59	07/08/2022	-	-	-	-	-	-
68	Burhi Gandak	Samastipur	Bihar	45.02	46.02	43.97	08/08/2022	-	-	-	-	-	-
69	Burhi Gandak	Rosera	Bihar	41.63	42.63	41.47	08/08/2022	-	-	-	-	-	-
70	Burhi Gandak	Khagaria	Bihar	35.58	36.58	37.76	04/09/2022	04/08/2022 20	11/08/2022 09	8	26/08/2022 10	07/09/2022 12	13
								21/08/2022 11	11/09/2022 02	22	10/09/2022 00	10/09/2022 23	1
								21/09/2022 19	03/10/2022 20	13	12/10/2022 20	21/10/2022 22	10
								09/10/2022 14	25/10/2022 04	17	-	-	-
71	Bagmati	Benibad	Bihar	47.68	48.68	49.81	03/08/2022	15/06/2022 18	07/07/2022 07	23	16/06/2022 09	17/06/2022 15	2
								08/07/2022 17	11/07/2022 21	4	18/06/2022 12	22/06/2022 11	5
								14/07/2022 14	15/07/202212	2	25/06/2022 12	25/06/2022 12	1
								19/07/2022 19	14/08/2022 12	27	29/06/2022 23	03/07/2022 09	5
								15/08/2022 12	17/08/2022 06	3	29/07/2022 08	29/07/2022 19	1
								20/08/2022 04	24/08/2022 15	5	01/08/2022 06	09/08/2022 18	9
								25/08/2022 13	26/08/2022 11	2	11/08/2022 11	12/08/2022 05	2
								29/08/2022 10	18/10/2022 19	21	21/08/2022 10	22/08/2022 06	2
								-	-	-	29/08/2022 15	30/08/2022 12	2
								-	-	-	01/09/2022 14	09/09/2022 23	9
								-	-	-	11/09/2022 00	13/09/2022 20	3
								-	-	-	15/09/2022 18	22/09/2022 05	8
								-	-	-	07/10/2022 17	08/10/2022 12	2
72	Bagmati	Hayaghat	Bihar	44.72	45.72	44.22	06/08/2022	-	-	-	-	-	-
73	Adhwara Group	Kamtaul	Bihar	49.00	50.00	49.92	02/07/2022	01/07/2022 21	06/07/2022 14	6	-	-	-
								03/09/2022 16	08/09/2022 20	6	-	-	-
74	Adhwara Group	Ekmighat	Bihar	45.94	46.94	45.62	10/09/2022	-	-	-	-	-	-
75	Kamla Balan	Jhanjharpur	Bihar	49.00	50.00	51.7	30/06/2022	31/05/2022 13	02/06/2022 02	3	18/06/2022 18	22/06/2022 07	5
								04/06/2022 18	06/06/2022 07	3	25/06/2022 12	25/06/2022 12	1
								09/06/2022 08	11/06/2022 09	3	29/06/2022 09	05/07/2022 12	7
								13/06/2022 11	13/07/2022 08	31	30/07/2022 19	05/08/2022 06	7
								23/07/2022 16	25/07/2022 06	3	06/08/2022 21	07/08/2022 00	2
								26/07/2022 07	14/08/2022 14	20	31/08/2022 12	09/09/2022 23	10
								16/08/2022 07	17/08/2022 00	2	10/09/2022 12	11/09/2022 04	2
								21/08/2022 16	22/08/2022 14	2	16/09/2022 16	16/09/2022 21	1
								28/08/2022 16	26/10/2022 11	60	17/09/2022 14	17/09/2022 20	1
								-	-	-	26/09/2022 21	27/09/2022 10	2
								-	-	-	30/09/2022 18	30/09/2022 21	1
								-	-	-	12/10/2022 22	13/10/2022 03	2
76	Kosi	Basua	Bihar	46.75	47.75	49.24	02/08/2022	08/09/2022 09	31/10/2022 08	54	09/06/2022 17	06/07/2022 20	28
								-	-	-	07/07/2022 17	22/10/2022 21	108
77	Kosi	Baltara	Bihar	32.85	33.85	34.99	05/08/2022	18/06/2022 21	24/06/2022 14	7	01/07/2022 04	05/07/2022 00	5
								25/06/2022 12	25/06/2022 12	1	25/07/2022 22	26/07/2022 14	2
								27/06/2022 12	09/07/2022 20	13	28/07/2022 12	14/08/2022 19	18
								10/07/2022 05	17/07/2022 20	8	29/08/2022 21	21/09/2022 14	24
								20/07/2022 08	21/10/2022 06	94	27/09/2022 22	28/09/2022 15	2
								-	-	-	14/10/2022 01	15/10/2022 01	2
78	Kosi	Kursela	Bihar	29.00	30.00	31.16	04/09/2022	02/08/2022 14	15/08/2022 05	14	24/08/2022 16	10/09/2022 23	18
								22/08/2022 00	16/09/2022 03	26	24/09/2022 05	29/09/2022 09	6
								18/09/2022 13	27/10/2022 06	40	12/10/2022 05	23/10/2022 06	12
79	Mahananda	Dhengraghat	Bihar	34.65	35.65	36.73	30/06/2022	16/06/2022 07	08/07/2022 03	23	19/06/2022 21	20/06/2022 13	2
								28/07/2022 10	09/08/2022 05	13	21/06/2022 07	23/06/2022 19	3
								01/09/2022 13	09/09/2022 23	9	25/06/2022 12	25/06/2022 12	1
								25/09/2022 08	29/09/2022 19	5	28/06/2022 12	05/07/2022 07	8
								07/10/2022 14	09/10/2022 00	4	01/08/2022 21	05/08/2022 02	5
								11/10/2022 12	15/10/2022 13	5	02/09/2022 13	03/09/2022 13	2

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
								-	-	-	26/09/2022 12	27/09/2022 09	2
80	Mahananda	Jhawa	Bihar	30.40	31.40	32.44	01/07/2022	18/06/2022 07	24/06/2022 14	7	22/06/2022 22	23/06/2022 09	2
								25/06/2022 12	25/06/2022 12	1	25/06/2022 12	25/06/2022 12	1
								28/06/2022 07	06/07/2022 09	9	29/06/2022 18	03/07/2022 10	5
								08/07/2022 01	08/07/2022 12	1	04/07/2022 05	04/07/2022 07	1
								29/07/2022 07	09/08/2022 04	12	02/08/2022 22	03/08/2022 15	2
								02/09/2022 12	09/09/2022 16	8	-	-	-
								26/09/2022 07	29/09/2022 04	4	-	-	-
								12/10/2022 16	15/10/2022 07	4	-	-	-
81	Gandak	Dumariaghat	Bihar	61.22	62.22	63.52	09/10/2022	10/06/2022 10	13/06/2022 18	4	30/06/2022 09	02/07/2022 18	3
								16/06/2022 09	23/06/2022 07	8	30/07/2022 00	30/07/2022 09	1
								24/06/2022 04	25/06/2022 01	2	02/08/2022 06	12/08/2022 18	11
								26/06/2022 06	05/10/2022 03	102	29/08/2022 14	31/08/2022 09	3
								06/10/2022 05	24/10/2022 05	19	02/09/2022 01	06/09/2022 11	5
								-	-	-	10/09/2022 00	10/09/2022 09	1
								-	-	-	16/09/2022 16	20/09/2022 02	5
								-	-	-	07/10/2022 07	13/10/2022 13	7
82	Burhigandak	Ahirwalia	Bihar	58.62	59.62	57.03	05/08/2022	-	-	-	-	-	-
83	Mayurakshi	Narayanpur	West Bengal	26.86	27.86	24.14	16/09/2022	-	-	-	-	-	-
84	Ajoy	Gheropara	West Bengal	38.42	39.42	35.9	30/09/2022	-	-	-	-	-	-
85	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	11.16	07/10/2022	-	-	-	-	-	-
86	Kangsabati	Mohanpur	West Bengal	24.73	25.73	21.92	21/08/2022	-	-	-	-	-	-
87	Bagmati	Dheng Bridge	Bihar	70.00	71.00	71.4	29/06/2022	15/06/2022 15	16/06/2022 08	2	29/06/2022 16	30/06/2022 07	2
								17/06/2022 21	17/06/2022 22	1	-	-	-
								18/06/2022 16	20/06/2022 10	3	-	-	-
								25/06/2022 16	25/06/2022 22	1	-	-	-
								28/06/2022 05	28/06/2022 09	1	-	-	-
								29/06/2022 05	01/07/2022 05	3	-	-	-
								21/07/2022 21	23/07/2022 04	3	-	-	-
								28/07/2022 06	28/07/2022 23	1	-	-	-
								30/07/2022 07	30/07/2022 09	1	-	-	-
								31/07/2022 08	05/08/2022 07	6	-	-	-
								06/08/2022 08	06/08/2022 20	1	-	-	-
								19/08/2022 10	19/08/2022 17	1	-	-	-
								20/08/2022 11	21/08/2022 04	2	-	-	-
								28/08/2022 13	29/08/2022 07	2	-	-	-
								31/08/2022 16	03/09/2022 08	4	-	-	-
								04/09/2022 07	09/09/2022 23	6	-	-	-
								10/09/2022 16	10/09/2022 23	1	-	-	-
								15/09/2022 08	19/09/2022 06	5	-	-	-
								20/09/2022 07	21/09/2022 08	2	-	-	-
								26/09/2022 11	26/09/2022 17	1	-	-	-
								07/10/2022 09	07/10/2022 16	1	-	-	-
								08/10/2022 07	08/10/2022 13	1	-	-	-
88	Adhwara	Sonebarsha	Bihar	80.85	81.85	81.38	29/06/2022	29/06/2022 15	29/06/2022 22	1	-	-	-
89	Kamla Balan	Jainagar	Bihar	66.75	67.75	68.9	29/06/2022	01/05/2022 08	19/08/2022 07	111	04/06/2022 10	04/06/2022 14	1
								21/08/2022 08	22/08/2022 08	2	16/06/2022 17	17/06/2022 02	2
								28/08/2022 07	29/10/2022 21	63	18/06/2022 02	20/06/2022 22	3
								-	-	-	21/06/2022 07	21/06/2022 17	1
								-	-	-	24/06/2022 18	25/06/2022 12	2
								-	-	-	29/06/2022 07	01/07/2022 12	3
								-	-	-	02/07/2022 05	04/07/2022 04	3
								-	-	-	30/07/2022 09	30/07/2022 16	2
								-	-	-	31/07/2022 07	03/08/2022 17	4
								-	-	-	06/08/2022 07	06/08/2022 19	1
								-	-	-	28/08/2022 09	28/08/2022 15	1
								-	-	-	31/08/2022 07	31/08/2022 13	1
								-	-	-	01/09/2022 05	03/09/2022 10	3
								-	-	-	04/09/2022 13	07/09/2022 20	4
								-	-	-	08/09/2022 06	10/09/2022 13	3
								-	-	-	16/09/2022 08	17/09/2022 13	2
								-	-	-	21/09/2022 11	21/09/2022 12	1
								-	-	-	26/09/2022 12	27/09/2022 05	2
								-	-	-	29/09/2022 18	30/09/2022 18	2

Above Normal and Severe flood events on main Ganga and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
								-	-	-	12/10/2022 12	12/10/2022 23	1
90	Bagmati	Runisaidpur	Bihar	54.00	55.00	56.52	03/08/2022	15/06/2022 14	17/06/2022 19	3	19/06/2022 17	20/06/2022 13	2
								18/06/2022 07	23/06/2022 00	6	30/06/2022 08	01/07/2022 22	2
								26/06/2022 05	26/06/2022 20	1	01/08/2022 12	05/08/2022 20	5
								28/06/2022 10	04/07/2022 08	7	06/08/2022 22	06/08/2022 23	1
								22/07/2022 11	24/07/2022 19	3	07/08/2022 09	07/08/2022 15	1
								28/07/2022 15	13/08/2022 04	17	02/09/2022 16	03/09/2022 06	2
								15/08/2022 07	16/08/2022 07	2	04/09/2022 19	06/09/2022 09	3
								19/08/2022 20	22/08/2022 06	4	07/09/2022 09	09/09/2022 14	3
								29/08/2022 13	30/08/2022 05	2	17/09/2022 09	19/09/2022 05	3
								01/09/2022 07	09/09/2022 23	9	07/10/2022 15	07/10/2022 23	1
								11/09/2022 00	14/09/2022 07	4	-	-	-
								15/09/2022 05	22/09/2022 07	8	-	-	-
								24/09/2022 08	24/09/2022 10	1	-	-	-
								07/10/2022 06	09/10/2022 05	3	-	-	-
91	Parwan	Araria	Bihar	46.00	47.00	48.26	01/07/2022	15/06/2022 14	24/06/2022 05	10	25/06/2022 12	25/06/2022 12	1
								25/06/2022 12	25/06/2022 12	1	29/06/2022 02	05/07/2022 22	7
								27/06/2022 17	08/07/2022 00	12	29/07/2022 23	07/08/2022 07	10
								25/07/2022 12	12/08/2022 08	19	04/09/2022 19	09/09/2022 22	6
								01/09/2022 08	09/09/2022 23	9	-	-	-
								11/09/2022 00	16/09/2022 05	6	-	-	-
								17/09/2022 08	03/10/2022 11	17	-	-	-
								06/10/2022 09	18/10/2022 15	13	-	-	-
92	Mahananda	Taibpur	Bihar	65.00	66.00	67.26	29/06/2022	16/06/2022 12	23/06/2022 02	8	19/06/2022 16	19/06/2022 22	1
								24/06/2022 13	26/06/2022 00	3	20/06/2022 11	20/06/2022 21	1
								27/06/2022 09	03/07/2022 12	7	21/06/2022 10	22/06/2022 09	2
								27/07/2022 16	28/07/2022 14	2	28/06/2022 10	30/06/2022 08	3
								29/07/2022 10	30/07/2022 15	2	30/07/2022 02	30/07/2022 09	1
								31/07/2022 14	03/08/2022 15	4	01/09/2022 16	02/09/2022 11	2
								06/08/2022 15	07/08/2022 14	2	-	-	-
								01/09/2022 10	04/09/2022 13	4	-	-	-
								25/09/2022 09	26/09/2022 23	2	-	-	-
								11/10/2022 16	12/10/2022 09	2	-	-	-
93	Chambal	Kota City	Rajasthan	239.00	242.00	245.8	23/08/2022	24/07/2022 17	24/07/2022 18	1	22/08/2022 10	24/08/2022 17	3
								25/07/2022 17	25/07/2022 18	1	-	-	-
								16/08/2022 21	17/08/2022 22	2	-	-	-
								21/08/2022 21	25/08/2022 01	5	-	-	-
94	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	131.29	08/10/2022	17/09/2022 17	19/09/2022 06	3	08/10/2022 12	09/10/2022 07	2
								06/10/2022 07	10/10/2022 21	5	-	-	-
95	Chambal	Dholpur	Rajasthan	129.79	130.79	146.57	25/08/2022	14/06/2022 16	14/06/2022 16	1	14/06/2022 16	14/06/2022 16	1
								13/08/2022 11	15/08/2022 04	3	13/08/2022 15	14/08/2022 17	2
								17/08/2022 08	20/08/2022 01	4	17/08/2022 12	19/08/2022 20	3
								22/08/2022 22	28/08/2022 15	7	22/08/2022 23	28/08/2022 11	7
								09/10/2022 18	10/10/2022 15	2	-	-	-
96	Chambal	Manderial	Rajasthan	164.00	165.00	170.05	25/08/2022	23/08/2022 03	26/08/2022 08	4	23/08/2022 07	26/08/2022 05	4

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
1	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00	269.94	18/06/2022	-	-	-	-	-	-
2	Siang	Passighat	Arunachal Pradesh	152.96	153.96	152.90	28/06/2022	-	-	-	-	-	-
3	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	144.56	18/06/2022	-	-	-	-	-	-
4	Brahmaputra	Dibrugarh	Assam	104.70	105.70	105.56	28/06/2022	14/05/2022 19	16/05/2022 20	3	-	-	-
								17/05/2022 18	21/05/2022 09	5	-	-	-
								13/06/2022 06	14/06/2022 06	2	-	-	-
								15/06/2022 17	23/06/2022 00	9	-	-	-
								25/06/2022 02	04/07/2022 02	10	-	-	-
								20/07/2022 01	21/07/2022 11	2	-	-	-
								22/07/2022 14	24/07/2022 00	3	-	-	-
								09/08/2022 18	10/08/2022 00	1	-	-	-
								10/08/2022 18	10/08/2022 22	1	-	-	-
								20/08/2022 17	21/08/2022 00	2	-	-	-
								03/09/2022 22	11/09/2022 09	9	-	-	-
								23/09/2022 12	29/09/2022 13	7	-	-	-
								09/10/2022 08	15/10/2022 16	7	-	-	-
								26/10/2022 08	26/10/2022 22	1	-	-	-
5	Brahmaputra	Neamatighat	Assam	84.54	85.54	86.60	18/06/2022	15/05/2022 09	25/05/2022 17	11	15/05/2022 20	17/05/2022 05	3
								28/05/2022 13	30/05/2022 17	3	18/05/2022 17	22/05/2022 03	5
								04/06/2022 07	10/07/2022 21	37	11/06/2022 06	12/06/2022 00	2
								12/07/2022 17	14/07/2022 05	3	13/06/2022 12	15/06/2022 07	3
								20/07/2022 11	25/07/2022 23	6	16/06/2022 06	22/06/2022 21	7
								28/07/2022 00	05/08/2022 12	9	28/06/2022 04	03/07/2022 21	6
								05/08/2022 15	07/08/2022 15	2	05/09/2022 05	10/09/2022 19	6
								10/08/2022 21	12/08/2022 01	3	25/09/2022 08	26/09/2022 01	2
								29/08/2022 22	15/09/2022 14	18	11/10/2022 03	15/10/2022 21	5
								16/09/2022 08	20/09/2022 16	5	27/10/2022 08	27/10/2022 23	1
								24/09/2022 02	03/10/2022 21	10	-	-	-
								06/10/2022 13	18/10/2022 19	13	-	-	-
								26/10/2022 22	30/10/2022 00	5	-	-	-
6	Brahmaputra	Tezpur	Assam	64.23	65.23	65.89	01/07/2022	16/05/2022 18	24/05/2022 01	9	17/06/2022 15	23/06/2022 01	7
								11/06/2022 20	08/07/2022 21	29	29/06/2022 04	04/07/2022 07	6
								22/07/2022 13	23/07/2022 04	2	06/09/2022 09	08/09/2022 16	3
								24/07/2022 20	25/07/2022 12	2	12/10/2022 13	16/10/2022 02	5
								01/08/2022 16	04/08/2022 00	4	-	-	-
								05/09/2022 10	14/09/2022 02	10	-	-	-
								25/09/2022 09	02/10/2022 06	8	-	-	-
								08/10/2022 17	19/10/2022 04	12	-	-	-
7	Brahmaputra	Guwahati	Assam	48.68	49.68	49.95	20/06/2022	17/06/2022 12	24/06/2022 15	8	19/06/2022 16	21/06/2022 22	3
								30/06/2022 00	05/07/2022 01	6	-	-	-
								13/10/2022 14	17/10/2022 07	5	-	-	-
8	Brahmaputra	Goalpara	Assam	35.27	36.27	36.64	20/06/2022	20/05/2022 02	24/05/2022 03	5	18/06/2022 22	22/06/2022 20	5
								15/06/2022 00	07/07/2022 05	23	-	-	-
								08/09/2022 00	12/09/2022 04	5	-	-	-
								13/10/2022 07	18/10/2022 12	6	-	-	-
9	Brahmaputra	Dhubri	Assam	27.62	28.62	29.6	21/06/2022	18/05/2022 10	26/05/2022 03	9	15/06/2022 22	25/06/2022 22	11
								13/06/2022 00	09/07/2022 17	27	29/06/2022 22	05/07/2022 13	7
								02/08/2022 06	06/08/2022 21	5	-	-	-
								07/09/2022 18	15/09/2022 04	9	-	-	-
								12/10/2022 09	20/10/2022 05	9	-	-	-
10	Buridehing	Naharkatia	Assam	119.40	120.40	118.96	16/05/2022	-	-	-	-	-	-
								16/05/2022 10	21/05/2022 18	6	18/05/2022 02	18/05/2022 05	1
								14/06/2022 13	24/06/2022 19	11	29/06/2022 21	05/07/2022 03	7

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
11	Buridehing	Chenimari/Khwong	Assam	101.11	102.11	**103.35**	**01/07/2022**	25/06/2022 07	27/06/2022 10	3	05/07/2022 13	06/07/2022 09	1
								28/06/2022 17	07/07/2022 11	10	-	-	-
								21/07/2022 02	24/07/2022 12	4	-	-	-
								26/07/2022 15	31/07/2022 07	6	-	-	-
								29/08/2022 22	31/08/2022 11	3	-	-	-
								06/09/2022 11	09/09/2022 01	4	-	-	-
12	Subansiri	Badatighat	Assam	81.53	82.53	82.57	**19/06/2022**	17/06/2022 08	23/06/2022 12	7	19/06/2022 00	19/06/2022 21	**1**
								28/06/2022 13	03/07/2022 22	6	-	-	-
								06/09/2022 04	08/09/2022 05	3	-	-	-
								10/10/2022 18	15/10/2022 12	6	-	-	-
13	Dikhow	Sivasagar	Assam	91.40	92.40	**92.39**	**04/07/2022**	01/07/2022 18	03/07/2022 18	3	-	-	-
								04/07/2022 08	05/07/2022 11	2	-	-	-
								07/09/2022 01	07/09/2022 13	1	-	-	-
14	Desang	Nanglamoraghat	Assam	93.46	94.46	**95.36**	**04/07/2022**	16/05/2022 22	23/05/2022 22	8	17/05/2022 21	22/05/2022 15	6
								14/06/2022 21	17/06/2022 18	4	22/06/2022 07	23/06/2022 17	2
								20/06/2022 13	27/06/2022 11	7	30/06/2022 11	06/07/2022 10	7
								28/06/2022 21	07/07/2022 01	10	28/07/2022 06	31/07/2022 22	4
								27/07/2022 13	01/08/2022 22	6	07/09/2022 08	09/09/2022 04	3
								03/09/2022 17	09/09/2022 21	6	-	-	-
								25/09/2022 16	27/09/2022 11	3	-	-	-
15	Dhansiri(S)	Golaghat	Assam	88.50	89.50	**88.34**	**18/05/2022**	-	-	-	-	-	-
16	Dhansiri(S)	Numaligarh	Assam	77.42	78.42	**78.22**	**24/07/2022**	18/05/2022 03	22/05/2022 02	5	-	-	-
								18/06/2022 08	22/06/2022 23	5	-	-	-
								24/06/2022 12	25/06/2022 05	2	-	-	-
								26/06/2022 06	27/06/2022 04	2	-	-	-
								29/06/2022 09	03/07/2022 22	5	-	-	-
								04/07/2022 04	04/07/2022 19	1	-	-	-
								05/07/2022 10	07/07/2022 19	3	-	-	-
								12/07/2022 13	13/07/2022 06	2	-	-	-
								24/07/2022 07	01/08/2022 04	9	-	-	-
								03/08/2022 11	05/08/2022 22	3	-	-	-
								06/08/2022 15	09/08/2022 16	4	-	-	-
								10/08/2022 14	11/08/2022 00	2	-	-	-
								14/09/2022 07	15/09/2022 15	2	-	-	-
17	Kopili	Kampur	Assam	59.50	60.50	**62.2**	**18/06/2022**	13/05/2022 18	27/05/2022 13	**15**	14/05/2022 03	24/05/2022 14	11
								08/06/2022 02	09/06/2022 07	**2**	15/06/2022 19	26/06/2022 06	12
								15/06/2022 05	29/06/2022 12	**15**	-	-	-
								26/10/2022 14	27/10/2022 05	**2**	-	-	-
18	Kopili	Dharamtul	Assam	55.00	56.00	**58.00**	**22/06/2022**	14/05/2022 13	01/06/2022 09	**19**	17/05/2022 21	29/05/2022 08	13
								16/06/2022 03	10/07/2022 13	25	17/06/2022 17	05/07/2022 22	19
19	Jiabharali	NT.Rd.X-ing	Assam	77.00	78.00	**78.1**	**17/06/2022**	12/05/2022 15	12/05/2022 15	**1**	17/06/2022 05	17/06/2022 22	**1**
								14/05/2022 03	22/05/2022 18	**9**	18/06/2022 06	18/06/2022 09	**1**
								03/06/2022 21	06/06/2022 06	**4**	-	-	-
								08/06/2022 11	05/07/2022 00	**28**	-	-	-
								21/07/2022 07	21/07/2022 08	1	-	-	-
								22/07/2022 09	22/07/2022 23	1	-	-	-
								27/07/2022 06	28/07/2022 12	2	-	-	-
								29/07/2022 09	29/07/2022 16	1	-	-	-
								30/07/2022 08	07/08/2022 12	9	-	-	-
								28/08/2022 16	11/09/2022 15	15	-	-	-
								13/09/2022 11	13/09/2022 16	1	-	-	-
								16/09/2022 09	18/09/2022 13	3	-	-	-
								22/09/2022 08	02/10/2022 04	11	-	-	-
								05/10/2022 05	16/10/2022 11	12	-	-	-
								25/10/2022 17	29/10/2022 13	5	-	-	-
20	Subansiri	Choldhowaghat	Assam	99.43	100.43	**96.33**	**17/06/2022**	-	-	-	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
21	Ranganadi	N H Crossing Ranganadi	Assam	93.81	94.81	**94.58**	**17/06/2022**	16/05/2022 20	17/05/2022 12	2	-	-	-
								10/06/2022 19	10/06/2022 21	1	-	-	-
								16/06/2022 08	19/06/2022 15	4	-	-	-
								20/06/2022 02	20/06/2022 14	1	-	-	-
								05/09/2022 05	05/09/2022 17	1	-	-	-
								25/10/2022 15	26/10/2022 20	2	-	-	-
22	Lohit	Dholla Bazaar	Assam	127.27	128.27	**126.53**	**18/06/2022**	-	-	-	-	-	-
23	Puthimari	Puthimari _NHX	Assam	51.31	52.31	**54.49**	**17/06/2022**	16/05/2022 10	18/05/2022 07	3	15/06/2022 12	21/06/2022 03	7
								12/06/2022 18	13/06/2022 07	2	-	-	-
								14/06/2022 16	23/06/2022 14	23	-	-	-
								01/08/2022 16	02/08/2022 12	2	-	-	-
								03/08/2022 06	04/08/2022 00	2	-	-	-
24	Pagladia	Pagladia_NTX	Assam	51.75	52.75	**53.88**	**17/06/2022**	15/05/2022 10	18/05/2022 14	**4**	15/06/2022 13	21/06/2022 03	7
								19/05/2022 05	19/05/2022 11	**1**	01/08/2022 14	02/08/2022 08	2
								09/06/2022 16	10/06/2022 00	**2**	-	-	-
								12/06/2022 08	13/06/2022 15	**2**	-	-	-
								14/06/2022 12	22/06/2022 17	**9**	-	-	-
								01/08/2022 06	03/08/2022 17	**3**	-	-	-
25	Barak	APGhat	Assam	18.83	19.83	**21.59**	**21/06/2022**	13/05/2022 20	24/05/2022 17	**12**	14/05/2022 15	23/05/2022 06	10
								17/06/2022 10	10/07/2022 04	**24**	18/06/2022 11	01/07/2022 14	14
								-	-	-	03/07/2022 21	05/07/2022 22	3
26	Katakhal	Matizuri	Assam	19.27	20.27	**22.49**	**21/06/2022**	18/05/2022 11	22/05/2022 20	5	19/06/2022 00	24/06/2022 19	6
								18/06/2022 12	27/06/2022 17	10	08/07/2022 03	09/07/2022 01	2
								04/07/2022 02	05/07/2022 04	2	-	-	-
								07/07/2022 10	09/07/2022 20	3	-	-	-
								04/08/2022 08	05/08/2022 08	2	-	-	-
								06/08/2022 19	08/08/2022 05	3	-	-	-
27	Barak	Badarpurghat	Assam	15.85	16.85	**18.44**	**23/06/2022**	13/05/2022 21	26/05/2022 10	14	14/05/2022 14	24/05/2022 05	11
								17/06/2022 02	14/07/2022 03	28	18/06/2022 06	09/07/2022 19	21
28	Kushiyara	Karimganj	Assam	13.94	14.94	**16.52**	**22/06/2022**	13/05/2022 15	27/05/2022 05	**15**	14/05/2022 12	25/05/2022 05	12
								15/06/2022 22	14/07/2022 04	**30**	17/06/2022 12	09/07/2022 22	23
29	Manu	Kailashar	Tripura	24.34	25.34	**23.49**	**24/08/2022**	-	-	-	-	-	-
30	Gumti	Sonamura	Tripura	11.50	12.50	**12.01**	**20/06/2022**	20/06/2022 09	21/06/2022 19	2	-	-	-
31	Manas	Mathanguri	Assam	98.10	99.10	**96.2**	**18/06/2022**	-	-	-	-	-	-
32	Manas	Manas NH- Crossing	Assam	47.81	48.42	**49.32**	**16/06/2022**	12/06/2022 15	13/06/2022 05	**2**	15/06/2022 08	20/06/2022 01	6
								15/06/2022 00	21/06/2022 01	**7**	-	-	-
								28/06/2022 14	30/06/2022 03	**3**	-	-	-
								01/08/2022 04	02/08/2022 11	**2**	-	-	-
								17/05/2022 01	17/05/2022 18	1	16/06/2022 22	20/06/2022 20	**5**
								08/06/2022 16	10/06/2022 17	3	27/06/2022 14	27/06/2022 22	**1**
								11/06/2022 16	13/06/2022 09	3	28/06/2022 07	29/06/2022 22	**2**

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Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
33	Beki	Beki Rd. Bridge	Assam	44.10	45.10	45.7	18/06/2022	14/06/2022 15	06/07/2022 17	23	30/06/2022 08	30/06/2022 17	**1**
								14/07/2022 14	14/07/2022 21	1	01/08/2022 06	02/08/2022 14	**2**
								21/07/2022 08	12/08/2022 03	23	03/08/2022 11	03/08/2022 20	**1**
								14/08/2022 12	16/08/2022 19	3	-	-	-
								19/08/2022 16	19/08/2022 23	1	-	-	-
								20/08/2022 15	20/08/2022 23	1	-	-	-
								22/08/2022 14	22/08/2022 19	1	-	-	-
								29/08/2022 13	29/08/2022 16	1	-	-	-
								31/08/2022 08	15/09/2022 23	16	-	-	-
								16/09/2022 11	16/09/2022 23	1	-	-	-
								17/09/2022 09	18/09/2022 19	2	-	-	-
								23/09/2022 15	30/09/2022 10	8	-	-	-
								05/10/2022 06	07/10/2022 17	3	-	-	-
								08/10/2022 20	14/10/2022 23	7	-	-	-
								25/10/2022 18	26/10/2022 19	2	-	-	-
34	Gaurang	Kokrajhar	Assam	41.85	42.85	43.07	16/06/2022	12/06/2022 06	12/06/2022 22	1	16/06/2022 05	16/06/2022 20	1
								14/06/2022 18	21/06/2022 01	8	-	-	-
								28/06/2022 08	29/06/2022 16	2	-	-	-
								31/07/2022 10	03/08/2022 14	4	-	-	-
								29/08/2022 18	30/08/2022 02	2	-	-	-
								31/08/2022 11	01/09/2022 03	2	-	-	-
								05/09/2022 06	06/09/2022 17	2	-	-	-
35	Sankosh	Golokganj	Assam	28.94	29.94	30.00	18/06/2022	15/06/2022 22	23/06/2022 08	9	18/06/2022 13	18/06/2022 21	1
								28/06/2022 13	04/07/2022 03	7	-	-	-
								24/07/2022 04	29/07/2022 02	6	-	-	-
								31/07/2022 08	09/08/2022 23	10	-	-	-
								30/08/2022 07	30/08/2022 12	1	-	-	-
								05/09/2022 06	08/09/2022 04	4	-	-	-
								10/09/2022 05	12/09/2022 17	3	-	-	-
								25/09/2022 18	26/09/2022 19	2	-	-	-
								11/10/2022 13	14/10/2022 05	4	-	-	-
								15/06/2022 15	15/06/2022 20	1	20/06/2022 03	20/06/2022 06	1
								16/06/2022 05	17/06/2022 15	2	21/06/2022 02	21/06/2022 05	1
								18/06/2022 07	18/06/2022 23	1	28/06/2022 23	29/06/2022 10	2
								19/06/2022 07	19/06/2022 22	1	01/08/2022 04	02/08/2022 04	2
								20/06/2022 01	20/06/2022 15	1	06/08/2022 11	06/08/2022 17	1
								21/06/2022 00	21/06/2022 19	1	01/09/2022 06	01/09/2022 21	1
								24/06/2022 07	26/06/2022 22	3	12/10/2022 12	12/10/2022 18	1
								27/06/2022 13	27/06/2022 15	1	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
36	Teesta	Domohani	W.B.	85.65	85.95	86.18	01/08/2022	28/06/2022 11	30/06/2022 14	3	-	-	-
								01/07/2022 11	02/07/2022 19	2	-	-	-
								26/07/2022 00	26/07/2022 01	1	-	-	-
								27/07/2022 09	27/07/2022 23	1	-	-	-
								29/07/2022 04	29/07/2022 17	1	-	-	-
								31/07/2022 11	03/08/2022 22	4	-	-	-
								06/08/2022 07	06/08/2022 20	1	-	-	-
								07/08/2022 16	07/08/2022 18	1	-	-	-
								14/08/2022 12	14/08/2022 20	1	-	-	-
								15/08/2022 06	15/08/2022 16	1	-	-	-
								29/08/2022 09	29/08/2022 17	1	-	-	-
								31/08/2022 07	31/08/2022 12	1	-	-	-
								01/09/2022 05	02/09/2022 19	2	-	-	-
								03/09/2022 11	04/09/2022 16	2	-	-	-
								06/09/2022 08	06/09/2022 21	1	-	-	-
								17/09/2022 06	17/09/2022 19	1	-	-	-
								24/09/2022 11	27/09/2022 08	4	-	-	-
								29/09/2022 05	29/09/2022 09	1	-	-	-
								10/10/2022 07	10/10/2022 16	1	-	-	-
								11/10/2022 17	13/10/2022 00	3	-	-	-
37	Teesta	Mekhliganj	W.B.	65.45	65.95	65.64	02/08/2022	20/06/2022 13	20/06/2022 16	1	-	-	-
								01/08/2022 20	02/08/2022 06	2	-	-	-
								01/09/2022 23	02/09/2022 04	2	-	-	-
38	Jaldhaka	N H 31	W.B.	80.00	80.90	80.3	01/09/2022	14/06/2022 13	14/06/2022 17	1	-	-	-
								15/06/2022 10	15/06/2022 13	1	-	-	-
								16/06/2022 08	16/06/2022 15	1	-	-	-
								18/06/2022 05	18/06/2022 08	1	-	-	-
								20/06/2022 07	20/06/2022 11	1	-	-	-
								21/06/2022 02	21/06/2022 12	1	-	-	-
								22/06/2022 08	22/06/2022 11	1	-	-	-
								28/06/2022 17	28/06/2022 23	1	-	-	-
								29/06/2022 20	30/06/2022 01	2	-	-	-
								01/07/2022 15	01/07/2022 16	1	-	-	-
								29/07/2022 06	29/07/2022 09	1	-	-	-
								30/07/2022 08	30/07/2022 12	1	-	-	-
								01/08/2022 06	01/08/2022 13	1	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
								02/08/2022 11	02/08/2022 15	1	-	-	-
								29/08/2022 08	29/08/2022 11	1	-	-	-
								01/09/2022 09	01/09/2022 20	1	-	-	-
								24/09/2022 09	24/09/2022 14	1	-	-	-
								25/09/2022 10	25/09/2022 16	1	-	-	-
								12/10/2022 06	12/10/2022 12	1	-	-	-
39	Jaldhaka	Mathabhanga	W.B.	47.70	48.20	47.98	29/06/2022	16/06/2022 15	16/06/2022 19	1	-	-	-
								21/06/2022 11	21/06/2022 15	1	-	-	-
								29/06/2022 01	29/06/2022 10	1	-	-	-
40	Torsa	Ghughumari	W. B.	39.80	40.41	40.56	18/06/2022	15/06/2022 16	15/06/2022 18	1	18/06/2022 08	18/06/2022 14	1
								16/06/2022 10	19/06/2022 18	4	-	-	-
								20/06/2022 11	20/06/2022 15	1	-	-	-
								21/06/2022 11	21/06/2022 22	1	-	-	-
								22/06/2022 08	22/06/2022 19	1	-	-	-
								24/06/2022 12	24/06/2022 22	1	-	-	-
								27/06/2022 16	27/06/2022 23	1	-	-	-
								28/06/2022 03	29/06/2022 14	2	-	-	-
								01/07/2022 08	02/07/2022 01	2	-	-	-
								01/08/2022 14	02/08/2022 01	2	-	-	-
41	Radak-I	Tufanganj	W. B.	34.22	35.30	35.27	17/06/2022	16/06/2022 07	21/06/2022 06	6	-	-	-
								28/06/2022 16	30/06/2022 08	3	-	-	-
								01/08/2022 23	03/08/2022 07	3	-	-	-
42	Teesta	Malli Bazaar	Sikkim	223.00	224.00	217.25	12/10/2022	-	-	-	-	-	-
43	Teesta	Joretahang(Rothak)	Sikkim	350.60	351.60	348.95	01/09/2022	-	-	-	-	-	-
44	Teesta	Singtam	Sikkim	377.70	377.57	375.09	23/08/2022	-	-	-	-	-	-
45	Torsa	Hasimara	West Bengal	116.30	116.90	117.1	18/06/2022	18/06/2022 00	18/06/2022 09	1	18/06/2022 01	18/06/2022 04	1

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No. of days	From	To	No. of days
1	Jhelum	Rammunshibagh	Jammu & Kashmir	1584.87	1585.48	1586.18	23/06/2022	22/06/2022 15	24/06/2022 07	3	22/06/2022 18	23/06/2022 21	2
2	Jhelum	Sangam	Jammu & Kashmir	1589.96	1590.88	1591.94	22/06/2022	22/06/2022 08	23/06/2022 19	2	22/06/2022 11	23/06/2022 10	2
3	Jhelum	Safapora	Jammu & Kashmir	1579.36	1579.66	1580.32	23/06/2022	22/06/2022 19	25/06/2022 16	4	22/06/2022 22	25/06/2022 06	4
4	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	125.36	21/08/2022	20/08/2022 16	21/08/2022 16	2	20/08/2022 19	21/08/2022 14	2
5	Subernarekna	Rajghat	Odisha	9.45	10.36	11.9	22/08/2022	21/08/2022 12	23/08/2022 18	3	21/08/2022 15	23/08/2022 05	3
6	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	7.58	20/08/2022	15/08/2022 08	16/08/2022 05	2	-	-	-
								20/08/2022 16	22/08/2022 02	3	-	-	-
7	Baitarni	Anandpur	Odisha	37.44	38.36	39.12	21/08/2022	14/08/2022 20	15/08/2022 17	2	20/08/2022 20	21/08/2022 11	2
								20/08/2022 18	21/08/2022 16	2	-	-	-
8	Baitarni	Akhuapada	Odisha	17.83	17.83	19.02	21/08/2022	13/08/2022 12	16/08/2022 21	4	13/08/2022 12	16/08/2022 21	4
								20/08/2022 22	22/08/20222 17	3	20/08/2022 22	22/08/20222 17	3
9	Brahmani	Jenapur	Odisha	22	23	21.23	25/08/2022	-	-	-	-	-	-
10	Rushikuluya	Purushottampur	Odisha	15.83	16.83	15.79	06/10/2022	-	-	-	-	-	-
11	Vamsadhara	Gunupur	Odisha	83.00	84.00	83.97	14/08/2022	09/08/2022 15	09/08/2022 18	1	-	-	-
								14/08/2022 15	16/08/2022 00	3	-	-	-
								20/08/2022 08	21/08/2022 04	2	-	-	-
12	Vamsadhara	Kashinagar	Odisha	54.10	54.60	55.84	14/08/2022	17/07/2022 12	17/07/2022 19	1	17/07/2022 13	17/072022 16	1
								09/08/2022 15	11/08/2022 09	3	09/08/2022 19	10/08/2022 06	2
								14/08/2022 00	18/08/2022 07	5	14/08/2022 03	16/08/2022 06	3
								20/08/2022 07	21/08/2022 16	2	20/08/2022 11	21/08/2022 07	2
								20/09/2022 23	21/09/2022 14	2	21/09/2022 02	21/09/2022 06	1
13	Jalaka	Mathani Road Bridge	Odisha	5.50	5.50	6.97	21/08/2022	11/08/2022 15	17/08/2022 13	7	11/08/2022 15	17/08/2022 13	7
								19/08/2022 15	26/08/2022 08	8	19/08/2022 15	26/08/2022 08	8
								28/08/2022 04	29/08/2022 09	2	28/08/2022 04	29/08/2022 09	2
								11/09/2022 07	14/09/2022 22	4	11/09/2022 07	14/09/2022 22	4
								18/09/2022 08	18/09/2022 21	1	18/09/2022 08	18/09/2022 21	1
								20/09/2022 07	21/09/2022 09	2	20/09/2022 07	21/09/2022 09	2
								05/10/2022 02	07/10/2022 22	3	05/10/2022 02	07/10/2022 22	3
14	Mahanadi	Naraj	Odisha	25.41	26.41	27.49	17/08/2022	14/08/2022 08	22/08/2022 17	9	15/08/2022 06	20/08/2022 14	6
15	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	12.06	17/08/2022	15/08/2022 21	20/08/2022 07	6	16/08/2022 18	17/08/2022 19	2
16	Mahanadi	Nimapara	Odisha	9.85	10.76	10.58	17/08/2022	16/08/2022 12	20/08/2022 09	5	-	-	-
17	Godavari	Atreyapuram	Andhra Pradesh	13.50	15.00	14.12	17/07/2022	16/07/2022 02	18/07/2022 11	3	-	-	-
18	Godavari	Kopergaon	Maharashtra	490.90	493.68	493.2	12/07/2022	11/07/2022 18	13/07/2022 15	3	-	-	-
								14/07/2022 06	16/07/2022 15	3	-	-	-
								17/08/2022 06	18/08/2022 14	2	-	-	-
								01/09/2022 19	03/09/2022 00	3	-	-	-
								09/09/2022 11	09/09/2022 23	1	-	-	-
								16/09/2022 15	21/10/2022 13	6	-	-	-
19	Godavari	Gangakhed	Maharashtra	374.00	375.00	370.98	19/09/2022	-	-	-	-	-	-
20	Godavari	Nanded	Maharashtra	351.00	354.00	349.84	13/07/2022	-	-	-	-	-	-
21	Godavari	Kaleswaram	Telangana	103.50	104.75	108.19	15/07/2022	10/07/2022 14	11/07/2022 10	2	13/07/2022 04	16/07/2022 08	4
								12/07/2022 20	16/07/2022 22	5	-	-	-
								19/07/2022 23	20/07/2022 13	2	-	-	-
								10/08/2022 19	14/08/2022 08	5	-	-	-
								17/08/2022 10	18/08/2022 08	2	-	-	-
								12/09/2022 18	13/09/2022 19	2	-	-	-
22	Godavari	Eturunagaram	Telangana	73.32	75.82	77.11	15/07/2022	10/07/2022 17	12/07/2022 07	3	14/07/2022 03	16/07/2022 07	3
								12/07/2022 22	19/07/2022 09	7	-	-	
								20/07/2022 05	21/07/2022 06	2	-	-	
								09/08/2022 13	14/08/2022 18	6	-	-	
								15/08/2022 16	19/08/2022 10	5	-	-	
								12/09/2022 12	14/09/2022 17	3	-	-	

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No. of days	From	To	No. of days
23	Godavari	Dummagudam	Telangana	53.00	55.00	59.62	15/07/2022	11/07/2022 01	19/07/2022 16	9	11/07/2022 12	12/07/2022 03	2
								20/07/2022 13	21/07/2022 10	2	13/07/2022 16	17/07/2022 15	5
								09/08/2022 19	15/08/2022 03	7	17/08/2022 03	17/08/2022 13	1
								16/08/2022 01	19/08/2022 13	4	-	-	-
								12/09/2022 17	15/09/2022 03	4			
24	Godavari	Bhadrachalam	Telangana	45.72	48.77	54.34	16/07/2022	11/07/2022 01	22/07/2022 11	12	11/07/2022 17	12/07/2022 07	2
								23/07/2022 02	23/07/2022 21	1	13/07/2022 16	19/07/2022 11	7
								25/07/2022 04	26/07/2022 07	2	16/08/2022 21	18/08/2022 11	3
								09/08/2022 17	20/08/2022 11	12	-	-	-
								12/09/2022 15	15/09/2022 17	4	-	-	-
25	Wardha	Sirpur Town	Telangana	159.95	160.95	162.57	15/07/2022	11/07/2022 05	11/07/2022 08	1	13/07/2022 19	17/07/2022 06	5
								13/07/2022 09	17/07/2022 10	5	19/07/2022 20	22/07/2022 01	4
								19/07/2022 11	22/07/2022 05	4	09/08/2022 19	13/08/2022 15	5
								28/07/2022 00	28/07/2022 00	1	13/09/2022 22	14/09/2022 18	2
								09/08/2022 05	13/08/2022 20	5	-	-	-
								12/09/2022 22	16/09/2022 08	5	-	-	-
26	Godavari	Kunavaram	Andhra Pradesh	37.74	39.24	48.87	16/07/2022	11/07/2022 10	24/07/2022 15	14	11/07/2022 17	22/07/2022 16	12
								25/07/2022 02	28/07/2022 02	4	10/08/2022 03	20/08/2022 22	11
								09/08/2022 15	21/08/2022 07	13	13/09/2022 06	16/09/2022 03	4
								12/09/2022 18	16/09/2022 22	5	-	-	-
27	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	19.38	17/07/2022	14/07/2022 22	20/07/2022 08	7	-	-	-
28	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	17.29	17/07/2022	12/07/2022 00	24/07/2022 17	13	15/07/2022 10	19/07/2022 13	5
								26/07/2022 13	27/07/2022 03	2	-	-	-
								10/08/2022 09	21/08/2022 12	12	-	-	-
								13/09/2022 12	16/09/2022 18	4	-	-	-
29	Wainganga	Bhandara	Maharashtra	245.50	245.70	248.38	16/08/2022	10/08/2022 20	12/08/2022 04	3	10/08/2022 21	12/08/2022 02	3
								15/08/2022 08	18/08/2022 01	4	15/08/2022 09	18/08/2022 00	4
30	Wainganga	Pauni	Maharashtra	226.73	227.73	229.35	17/08/2022	13/07/2022 22	14/07/2022 12	2	14/07/2022 04	14/07/2022 05	1
								18/07/2022 15	18/07/2022 21	1	10/08/2022 15	12/08/2022 07	3
								10/08/2022 14	12/08/2022 10	3	15/08/2022 10	18/08/2022 03	4
								15/08/2022 08	18/08/2022 07	4	-	-	-
								14/09/2022 12	14/09/2022 16	1	-	-	-
31	Wardha	Balharsha	Maharashtra	171.50	174.00	173.67	20/07/2022	13/07/2022 12	16/07/2022 12	4	-	-	-
								19/07/2022 11	21/07/2022 15	3	-	-	-
								09/08/2022 08	13/08/2022 09	5	-	-	-
								13/09/2022 21	14/09/2022 04	2	-	-	-
32	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	542.9	16/08/2022	12/07/2022 19	14/07/2022 09	3	13/07/2022 14	14/07/2022 00	2
								08/08/2022 04	11/08/2022 05	4	08/08/2022 12	10/08/2022 20	3
								14/08/2022 21	18/08/2022 02	5	15/08/2022 02	17/08/2022 19	3
33	Krishna	Arjunwad	Maharashtra	539.20	540.70	536.74	13/08/2022	-	-	-	-	-	-

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No. of days	From	To	No. of days
34	Bhima	Deongaon	Karnataka	402.00	404.50	403.43	21/10/2022	10/09/2022 21	11/09/2022 07	2	-	-	-
								19/09/2022 01	20/09/2022 20	2	-	-	-
								20/10/2022 11	22/10/2022 01	3	-	-	-
35	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	312.45	09/09/2022	14/07/2022 14	22/07/2022 18	9	18/07/2022 09	19/07/2022 05	2
								29/07/2022 15	30/07/2022 22	2	10/08/2022 13	11/08/2022 19	2
								31/07/2022 01	31/07/2022 15	1	12/08/2022 06	12/08/2022 14	1
								03/08/2022 01	06/08/2022 18	4	07/09/2022 18	09/09/2022 13	3
								07/08/2022 19	17/08/2022 01	11	-	-	-
								27/08/2022 17	05/09/2022 17	10	-	-	-
								07/09/2022 02	10/09/2022 13	4	-	-	-
								01/10/2022 04	03/10/2022 21	3	-	-	-
								12/10/2022 11	16/10/2022 06	5	-	-	-
								17/10/2022 15	18/10/2022 14	2	-	-	-
36	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	273.5	08/09/2022	16/07/2022 16	16/07/2022 17	1	-	-	-
								18/07/2022 16	19/07/2022 12	2	-	-	-
								10/08/2022 19	12/08/2022 21	3	-	-	-
								07/09/2022 23	09/09/2022 23	3	-	-	-
37	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.8	10.77	15/08/2022	15/08/2022 08	16/08/2022 08	2	-	-	-
								21/08/2022 09	21/08/2022 19	1	-	-	-
								09/09/2022 23	10/09/2022 07	2	-	-	-
								11/09/2022 04	12/09/2022 17	2	-	-	-
								07/10/2022 10	08/10/2022 23	2	-	-	-
38	Pennar	Nellore	Andhra Pradesh	15.91	17.28	12.4	15/10/2022	-	-	-	-	-	
39	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat	44.09	45.34	42.8	24/08/2022	-	-	-	-	-	-
40	Mahi	Wanakbori	Gujarat	71.93	74.98	71.17	24/08/2022	-	-	-	-	-	-
41	Naramada	Mandla	Madhya Pradesh	437.20	437.80	438.5	22/08/2022	13/08/2022 15	13/08/2022 20	1	21/08/2022 14	22/08/2022 10	2
								15/08/2022 11	16/08/2022 07	2	-	-	-
								21/08/2022 09	22/08/2022 14	2	-	-	-
42	Naramada	Hoshangabad	Madhya Pradesh	292.80	293.80	294.85	22/08/2022	15/08/2022 20	17/08/2022 05	3	16/08/2022 00	16/08/2022 22	1
								22/08/2022 15	24/08/2022 16	3	22/08/2022 17	24/08/2022 08	3
43	Naramada	Garudeswar	Gujarat	30.48	31.09	25.7	24/08/2022	-	-	-	-	-	-
44	Naramada	Bharuch	Gujarat	6.71	7.31	8.52	25/08/2022	17/08/2022 05	20/08/2022 00	4	17/08/2022 10	19/08/2022 21	3
								23/08/2022 17	26/08/2022 23	4	23/08/2022 22	26/08/2022 19	4
45	Tapi	Surat	Gujarat	8.50	9.50	6.6	20/07/2022	-	-	-	-	-	-
46	Damanganga	Vapi Town	Gujarat	18.20	19.20	17.55	12/07/2022	-	-	-	-	-	-
47	Damanganga	Daman	Dadra & Nagar Have	2.60	3.40	2.5	16/09/2022	-	-	-	-	-	-
48	Cauvery	Musiri	Tamilnadu	82.12	83.12	84.3	05/08/2022	17/07/2022 09	24/07/2022 10	8	17/07/2022 17	20/07/2022 08	4
								02/08/2022 04	17/08/2022 09	16	03/08/2022 17	13/08/2022 11	11
								27/08/2022 08	13/09/2022 05	18	28/08/2022 04	02/09/2022 09	6
								14/09/2022 11	17/09/2022 09	4	07/09/2022 10	10/09/2022 01	4
								14/10/2022 12	26/10/2022 15	13	16/10/2022 12	19/10/2022 17	4
								14/11/2022 01	16/11/2022 06	3	21/10/2022 12	23/10/2022 12	3

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2022 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2022		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No. of days	From	To	No. of days
49	Cauvery	Kodumudi	Tamilnadu	125.5	126.5	127.83	05/08/2022	16/07/2022 19	20/07/2022 10	5	17/07/2022 11	19/07/2022 19	3
								21/07/2022 08	21/07/2022 22	1	03/08/2022 06	12/08/2022 20	10
								03/08/2022 00	16/08/2022 00	14	28/08/2022 13	01/09/2022 18	5
								27/08/2022 06	02/09/2022 00	7	07/09/2022 07	09/09/2022 06	3
								06/09/2022 05	09/09/2022 21	4	15/10/2022 23	19/10/2022 00	5
								15/10/2022 12	19/10/2022 06	5	21/10/2022 07	22/10/2022 17	2
								20/10/2022 05	24/10/2022 15	5	-	-	-
50	Bhavani	Savandapur	Tamilnadu	184.50	185.50	184.88	06/08/2022	06/08/2022 08	06/08/2022 21	1	-	-	-
51	Sabari	Chinturu	Andhra Pradesh	41.50	43.00	49.4	16/07/2022	12/07/2022 06	20/07/2022 23	9	14/07/2022 07	20/07/2022 07	7
								11/08/2022 04	15/08/2022 05	5	-	-	-
								16/08/2022 18	19/08/2022 21	4	-	-	-
								14/09/2022 14	14/09/2022 21	1	-	-	-
52	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	7.6	18/10/2022	-	-	-	-	-	-
53	Periyar	Neeleswaram	Kerala	9.00	10.00	7.32	02/08/2022	-	-	-	-	-	-
54	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	7.9	17/07/2022	-	-	-	-	-	-
55	Pamba	Malakkara	Kerala	6.00	7.00	6.46	04/08/2022	04/08/2022 11	05/08/2022 18	2	-	-	-
56	Godavari	Nasik	Maharashtra	558.10	559.60	558.91	12/07/2022	11/07/2022 16	12/07/2022 18	2	-	-	-
57	Banas	Abu Road	Rajasthan	258.00	259.00	258.3	17/08/2022	17/08/2022 17	18/08/2022 00	2	-	-	-
								23/08/2022 13	23/08/2022 15	1	-	-	-
58	Vaigai	Madurai	Tamilnadu	131.50	132.50	131.7	18/10/2022	06/09/2022 17	06/09/2022 18	1	-	-	-
								18/10/2022 11	19/10/2022 08	2	-	-	-
								13/11/2022 14	13/11/2022 20	1	-	-	-

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