No.12/09/2018-CWRCS/

Cauvery Water Regulatory Committee Secretariat

Office: O/o Chief Engineer, Yamuna Basin Organisation, CWC,
KalindiBhawan, B-5, Tara Crescent Road, Qutub Institutional Area, N. Delhi 110016.

Dated:6th July, 2018

Subject: Minutes of First Meeting of Cauvery Water Regulatory Committee(CWRC) heldon 5thJuly, 2018, at New Delhi.

Please find enclosed herewith the Minutes of the First Meeting of Cauvery Water Regulatory Committee, held on 5th July, 2018, at Central Water Commission, New Delhi.

Enclosure : as above (24 pages)

(**A.S.Goel**)
Member Secretary, CWRC
Tele-fax : 011-26526865
Email: ceybo-cwc@nic.in

To:

1. Sh. Navin Kumar, Chief Engineer, IMO, CWC/ Chairman,CWRC,[ceimo-cwc@nic.in]
2. Sri H L Prasanna, MD, Cauvery Niravari Nigam Ltd,Govt of Karnataka,[cnnlmd@yahoo.com]
3. Sri K.A. Joshy, Chief Engineer, ISW Govt. of Kerala, [cea.irrgn@kerala.gov.in]
4. Sri V. Shanmugasundaram, Chief Engineer, PWD, Govt. of Puducherry, [cepwd.pon@gov.in]
5. Sri. R. Senthil Kumar , Chief Engineer, WRD, Govt. of TN, [cetrydb@hotmail.com]
6. Dr. M. Mohapatra,Scientist G (Services), IMD, [mohapatraimd@gmail.com]
7. Sri N.M. Krishnanunni, Chief Engg., C&SRO, Coimbatore , CWC, [cecsro-cwc@nic.in]
8. Dr. B.N.Srinivas Murthy,Commissioner (Horticulture), MoA&FW, [bns.murthy@gov.in]

MINUTES OF FIRST MEETING OF CAUVERY WATER REGULATION COMMITTEE HELD ON 05.07.2018 .

The first meeting of Cauvery Water Regulation Committee (CWRC), was held under the chairmanship of Sh. Navin Kumar, Chief Engineer (IMO), CWC and Chairman, CWRC on 5th July, 2018, at 1130 Hrs at Sewa Bhawan, Central Water Commission, New Delhi. List of participating members is enclosed as **Annex-I.**

In his opening remarks, the Chairman of the Committee welcomed the participants and briefed the members on the key decisions taken in the 1st meeting of Cauvery Water Management Authority (CWMA) held on 2nd July, 2018. He expressed hope that with cooperation of all members, the Committee would be able to achieve its mandate and fulfill the expectations from the Committee.

The representative of Government of Tamil Nadu read out his written submissions in the opening remarks, which are enclosed at **Annex II**. He stressed that as per the agricultural pattern in Cauvery Delta, water should have been released by 12th June for Kuruvai crops. However, due to insufficient storage in the Mettur reservoir, irrigation has not been possible so far. He desired that the CWRC may monitor release at Billigundulu, broken in 3 spells of 10 days interval.

The representative of Government of Karnataka also expressed hope that the Regulation Committee would come up to the expectations. He submitted the written submissions of the Govt. of Karnataka on the agenda items, which are placed at **Annex III.** Govt. of Kerala representative hoped similarly as representative of Karnataka and desired that the Committee should get the adequacy of gauging presently being done in Cauvery basin examined and suggest corrective actions, if any. The representative of Government of Puducherry also informed that due to delay in releases from Mettur Dam, its farmers were suffering. He requested the Committee to consider early releases from Mettur Dam, so that the farmers of Puducherry could take up irrigation of their crops.

Thereafter, the Chairman requested the Member Secretary to take up the agenda items.

Agenda 1.1. (1.1.1-1.1.3) Hydro- meteorological situation in Cauvery basin

The hydro-meteorological situation in Cauvery Basin for June 2018 was discussed. On the basis of information furnished by Member States, a consolidated

table indicating the Storage, Inflow, Outflow and Withdrawal of 8 reservoirs in Cauvery Basin for the month of June, 2018 is at **Annex-IV**. The Member States expressed the need for evolving proforma for sharing of the information related to inflow, outflow, withdrawal, storage , demand and rainfall. The Member from IMD, Dr. N. Mohapatra, made a brief presentation before the Committee, on the activities of IMD in Cauvery basin and the details of rainfall received during the month of June, 2018 in the sub-basins of Cauvery. A copy of presentation is placed at **Annex-V.**

It was noted by all the members of the Committee that the rainfall in the catchment area of Cauvery basin of Karnataka and Kerala during the month of June, 2018 was more than normal and there were no indications of distress in any part of the basin till the date of meeting.

During discussions after the presentation, the issue of access of authentic rainfall data for different sub-basins in the Cauvery basin, came up. It was decided that the Member from IMD would provide rainfall data on 10 daily basis to all Members, for each of the sub-basins (with area figures indicated for each sub basin) in the Cauvery Basin as mentioned below.

1. Kabini Catchment
2. KRS catchment
3. Billingundulu except KRS and Kabini
4. Billingudulu catchment
5. Cauvery except Billingudulu
6. Cauvery

(Action : IMD)

Agenda 1.2 Arrangements for collection and compilation of data regarding actual yield in the basin

In order to assess yield at any point in the basin, need for data abstractions for the current year as well as for previous years by the State of Karnataka, Kerala, Tamil Nadu and UT of Puducherry, was stressed upon by the Committee. In this regard, the requirement of the following kind of data was placed before the Committee:

i. Withdrawal for abstractions from all the major reservoirs.
ii. Minor Irrigation and Anicut.

iii. Abstractions (withdrawals + change in storage + evaporation) from reservoirs in Cauvery basin other than major reservoirs.

iv. Any other abstractions including withdrawals from Lift Irrigation Schemes and other domestic/industrial schemes.

After discussion, it was decided that Members would give views/comments on the above by 16th July, 2018 to Member Secretary.

(Action : All Members)

Agenda 1.3 Procedure for compilation and reconciliation of monthly water account for each reservoir

After deliberations on the agenda item it was decided that after the finalisation of the formats for supply of data, the data would be submitted by the Member States in the prescribed format and the data so submitted would be compiled on regular basis. Monthly data so compiled would be reconciled in the subsequent month(s). The procedure for reconciliation would be further discussed after submission of the data for the first time by the Member States in the prescribed formats.

Under the above agenda item, the issue of assessment of the evaporation loss from the designated 8 reservoirs in the Cauvery Basin was also discussed and it was decided that the Members from the three Party States (TN, Karnataka & Kerala) would provide the status report on the equipments available and the procedures presently adopted by them to all the members of the Committee in 10 days' time. The Member from the IMD would convey recommendations of IMD on the procedure to be adopted, within two weeks, which would subsequently be discussed by the Committee for evolving a common procedure to be adopted by the Party States.

(Action: TN, Karnataka, Kerala, IMD)

Agenda 1.4 Any other item with the permission of the Chair

(a) The issue of adequate technical information pertaining to the Cauvery basin, such as inflow, outflow, withdrawal, storage, crop area and domestic and industrial requirement from above reservoirs and rainfall in the catchment of above reservoirs was discussed. It was felt that standard formats be devised by the Committee, with the terminology used therein appropriately defined. In this regard, 4 formats pertaining to details of water requirement for all purposes in the Cauvery basin, water requirement for different crops in the

Command (for each cropping season), irrigation demand, domestic/industrial demand and proforma for maintaining data of storage, inflow, outflow and withdrawal of the reservoirs in Cauvery Basin, were circulated, which are placed at **Annex VI to IX** respectively. After deliberation, it was decided that the Members would give their inputs on the circulated formats by 16th July, 2018 to the Member Secretary.

(Action: All Members)

(b) State Government representatives of Karnataka and Tamil Nadu stated that the data of Billigundulu was being received late in case of continuous holidays. The issue was discussed and Chief Engineer, C&SRO & Member, CWRC agreed to provide the data without check at higher levels for immediate information, which would be checked and confirmed later. CWRC agreed to the proposal.

(Action: Chief Engineer, C&SRO, CWC)

The next date of meeting was fixed tentatively as 19th July, 2018 at New Delhi.

The meeting ended with a vote of thanks to the Chair.

****

Annex - I

1ST MEETING OF

THE CAUVERY WATER REGULATION COMMITTEE

HELD ON 5.7.2018

LIST OF PARTICIPANTS

1.	Shri Navin Kumar, Chief Engineer, IMO,CWC & Chairman, CWRC
2.	Shri H.L.Prasanna, MD, Cauvery Neeravari Nigam Ltd., Govt of Karnataka
3.	Shri K.A. Joshy, Chief Engineer, ISW, Govt. of Kerala
4.	Shri V. Shanmugasundaram, Chief Engineer, PWD, Govt. of Puducherry
5.	Shri. R. Senthil Kumar, Chief Engineer, WRD, Govt. of Tamil Nadu
6.	Dr. M.Mohapatra, Scientist G (Services), IMD, New Delhi.
7.	Shri N.M. Krishnanunni, Chief Engineer., C&SRO, CWC, Coimbatore
8.	Dr. B.N.Shrinivas Murthy, Commissioner (Horticulture), Ministry of Agriculture Cooperation and Farmers Welfare, New Delhi.
9.	Shri A.S.Goel, Chief Engineer, CWC, & Member Secretary, CWRC.

****

Annex – II

Ist Meeting of Cauvery Water Regulation Committee (CWRC) on 5th July 2018 at New Delhi.

Respected Chairman, Respected Member Secretary, Members of Cauvery Water Regulation Committee, officers of Government of India and from the States of Karnataka, Kerala and Puducherry.

The Committee meeting has given a good opportunity for having a better interaction and exchange of data with all the Central and party States' officials. The Government of Tamil Nadu and farmers of Cauvery Delta hope and expect that the due share of water to Tamil Nadu will be made available to them in time by the Authority and the Committee and the farmers fervently hope that their problems would be alleviated.

During the previous year 2017-2018, we were unable to have sufficient carry over storage in Mettur reservoir, due to insufficient realisation at Billigundulu. Hence, we were unable to commence irrigation activities in Cauvery Delta area in this year 2018-19, in time.

As per the agricultural pattern in Cauvery Delta, water should have been released by 12th June with assured storage position at Mettur for Kuruvai Crops. Because of insufficient storage at Mettur, we were unable to open the Reservoir on the scheduled date. Water is being released only for drinking and other environmental needs for the downstream districts of Mettur Dam.

As on 4th July, 2018, the gross storage in Mettur reservoir is only 26.24 TMC and only 1000 cusecs is being released. This year, sufficient rainfall has been received till now in this South-West Monsoon season in the catchment areas in Karnataka and Kerala and I hope that the monsoon in this year will be normal.

We are aware that the Cauvery Water Management Authority passed orders to release 31.24 TMC of water at Billigundulu for the month of July 2018, in its First meeting held on 2nd July, 2018, as per Supreme Court Judgement. I request the Chairman of this Committee to monitor the realisation of July flows due to Tamil Nadu at Billigundulu, broken in 3 spells of 10.41 TMC ft. spread over ten days intervals. I hope that the indicated quantities in the judgement for the subsequent months would also be ensured so as to supply water to the farmers of Tamil Nadu in the irrigation season 2018-19. By receiving the quantity of water due in July, 2018, we can ensure the opening of Mettur Dam at a suitable date to commence the cultivation.

I also request the Chairman of the Cauvery Water Regulation Committee to organise the next meeting of this Committee at Bengaluru, by 16th of July, 2018.

I thank the Chairman, Member Secretary and all other members for giving me this opportunity to express my views on behalf of Government of Tamil Nadu.

Annex-III

Written Submissions of Govt. of Karnataka on Agenda Items

CAUVERY NEERAVARI NIGAMA LIMITED

Surface Water Data Centre Building,
3rd & 4th Floor, Anandarao Circle,
Bengaluru-560 009.
Date: 04.07.2018.

To:

The Chairman,
Cauvery Water Regulation Committee,
New Delhi.

Sir,

Sub: First meeting of Cauvery Water Regulation Committee (CWRC) on 05.07.2018 – submissions of Karnataka to the agenda – Reg.

The submissions of Karnataka to the agenda and additional agenda items of the First meeting of Cauvery Water Regulation Committee (CWRC) on 05.07.2018 are attached herewith. I request you to take them on record.

Yours faithfully,

(H.L. PRASANNA)
Member of the Committee,
Karnataka and
Managing Director,
CNNL, Bengaluru.

First Meeting of Cauvery Water Regulation Committee (CWRC) 5th July, 2018

Agenda

Agenda Item	Submissions of Karnataka
1.1 Hydro-meteorological situation in Cauvery basin	The Cauvery river basin is influenced by south-west monsoon and north-east monsoon. It is an acknowledged Hydro-meteorological situation that the basin in Karnataka is significantly influenced by south-west monsoon; whereas the basin in the State of Tamil Nadu is influenced both by south-west monsoon and north-east monsoons. While deciding the scheduled flows at Biligundlu, this situation must be considered and factored into while determining the flows to be realized at Biligundlu. During the years of distress, apart from consideration of flows as distinctly from what is available in south-west monsoon to Karnataka and the flows available to Tamil Nadu in north-east monsoon and south-west monsoon, the ground realities must also be factored in.

1.1.1 Total residual storage in Banasurasagar (Kerala); Hemavathy, Harangi, Kabini and Krishnarajasagara (Karnataka); Lower Bhavani, Amaravathy and Mettur (Tamil Nadu), as on 1st June, 2018	Total Residual Storage (gross storage) as of 01.06.2018 (tmc) Hemavathy : 5.037 tmc Harangi : 0.551 tmc Kabini : 6.533 tmc Krishnarajasagara : 8.674 tmc --------- Total 20.795 tmc ---------
1.1.2 Inflow, outflow, withdrawal, storage, cropped area and domestic and industrial requirement from above reservoirs and rainfall in the catchment of above reservoirs during June, 2018.	Vide Statement-1 **(enclosed)** However, it is the considered opinion that the Rainfall data in the catchment is not relevant and consequential, since, the allocations to the party States have been made by CWDT on the basis of the gross yield of 740 tmc at 50% dependability at Lower Coleroon Anicut.
1.1.3 Bringing out indications of distress, if any, in the basin in the month of June, 2018.	With reference to average flows into four reservoirs for the period from 1974-75 to 2016-17, the flow in the month of June 2018 might be considered as normal.

	While making submissions to Agenda Item No.1.1.5.5, the State of Karnataka has taken the ground as follows: *"The "indication of distress" (which is different from determination of distress) in the Cauvery basin is possible only at the end of June after considering the inflows into 4 reservoirs. However, the first tentative determination of distress upto the inter-State border Biligundlu should be at the end of September and the second tentative determination of distress which is up to the Lower Coleroon Anicut in Tamil Nadu should be at the end of December based on ground realities. The final determination of distress should at the end of water year i.e., 31st May against the normal yield of 740 tmc.* *The monthly determination of distress in the absence of monthly normal yield (monthly component of 740 tmc) is not possible and any 'ad hoc' determination will be prejudicial to the interests of Karnataka".* This has been reiterated during discussions in the CWMA meeting on 02.07.2018.
1.2 Arrangements for collection and compilation of data regarding actual yield in the basin.	The monthly data of utilisation for irrigation, domestic, industrial, evaporation and accretion /

	depletion and flow at Biligundlu and Lower Coleroon Anicut may be obtained from the party States. An agreed format may have to be designed by the CWRC.
1.3 Procedure for compilation and reconciliation of monthly water account for each reservoir.	An agreed Common Format for Water Balance at the reservoir may have to be designed -
1.4 Any other item with the permission of the Chair.	-

(H.L. Prasanna)
Member of the Committee, Karnataka
and Managing Director, CNNL,
Bengaluru.

Additional Agenda items proposed for the first meeting of Cauvery Water Regulation Committee (CWRC) scheduled for 5th July, 2018

Agenda Item	Submissions of Karnataka
1.4.1 Type, frequency, and format for data requirement from State Governments and CWC, to be finalized.	The frequency of supply of data should be on a monthly basis covering the 10-daily period of that month. In the first meeting of CWMA on 02.07.2018, the Member, Karnataka has submitted as follows: "The Cauvery Monitoring Committee constituted vide Notification dated 11.8.1998 had decided the formats in the 22nd meeting of the Monitoring Committee held on 23.6.2005 on 10 daily data. The State of Karnataka requests the CWMA to adopt the same for future also. The data for the period from 1st June to 30th June, 2018 is enclosed herewith".
1.4.2 Format and frequency for Indents to be provided by Member States to CWMA, in the context of Para 10.3 (i).	The requirement of submitting of Indent by the State Governments is an extremely complex process which neither this Committee nor the Authority can handle. Moreover, such a data is not necessary as long as the requisite quantity of water flows at the inter-State border Biligundlu is

	realised. In any case, the question of supplying Indent may become necessary, if at the end of September in the distress year, the State of Karnataka is in default. Absent such default, requiring the State of Karnataka to submit Indent is wholly unnecessary and unreasonable. Similarly, the State of Tamil Nadu should be mandated to supply Indent for its irrigation systems in the distress year.
1.4.3 Procedure for Assessment and Regulation of water realized at Biligundlu, in view of directions of CWMA for release to be made by Karnataka during the month of July, 2018.	The water realized at Biligundlu is measured by the Gauge and Discharge division of the Central Water Commission. The said data is taken as the basis for assessing whether the State of Karnataka has ensured the requisite quantity of water or not.

(H.L. Prasanna)
Member of the Committee, Karnataka
and Managing Director, CNNL,
Bengaluru.

STATEMENT-1

RESERVOIR AND CROP AREA INFORMATION - JUNE 2018

Sl. No.	Dam/Project	Inflow	Outflow	Withdrawal (tmc)					Crop Area (acres)	Storage		Rainfall
				Irrigation	Domestic		Industries			Beginning of the month	End of the month	
					Withdrawals	Consumptive use	Withdrawals	Consumptive use				
1	Hemavathy	20.261	0.518	0.423	0.490	0.098	0.024	-	5850	5.037	24.195	IMD
2	Harangi	4.777	0.078	0.004	-	-	-	-	-	0.551	5.254	IMD
3	Kabini	27.768	15.674	0.004	1.650	0.33	-	-	-	6.533	18.321	IMD
4	Krishnarajasagara	23.837	0.819	2.137			-	-	39800	8.674	29.236	IMD
	TOTAL	76.047	16.493	2.568	2.140	0.428	0.024	0	45650			

NOTE: 1) The outflows from Hemavathy and Harangi are deducted from Inflow into Krishnarajasagara

2) The outflows from Hemavathy and Harangi are not considered since, the outflows is accounted for in the inflows into Krishnarajasagara.

Annex- IV

Storage, Inflow, Outflow and Withdrawl of 8 reservoirs in Cauvery Basin for the month of June, 2018 (all figures in TMC)

Sl No	Reservoir	Inflow	Outflow	Withdrawal				Live Storage	
				Irrigation	Domestic	Industries	Total	beginning of month	end of month
1	Banasurasagar	*	*	*	*	*		0.171	*
2	Hemavathy	20.261	0.518	0.423	0.588	0.024	1.035	5.037	24.195
3	Harangi	4.777	0.078	0.004	-	-	0.004	0.551	5.254
4	Kabini	27.768	15.674	0.004	1.980	-	4.121	6.533	18.321
5	KrishnarajSagara			2.137		-		8.674	29.236
6	Lower Bhavani	9.529	0.527	0.013	-	-	0.013	5.320	14.011
7	Amaravathy	1.577	1.459	0.552	-	-	0.552	0.876	1.192
8	Mettur	13.447	1.296	1.296	-	-	1.296	10.930	22.581

**** The Information is awaited from Govt. of Kerala.***

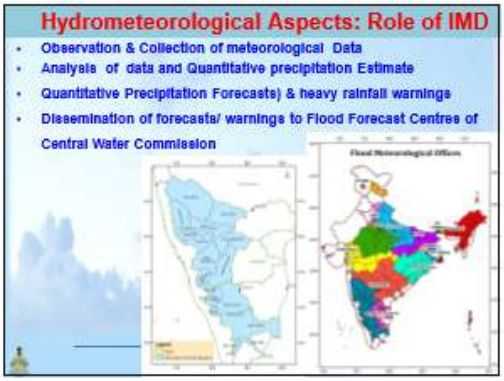
Note :

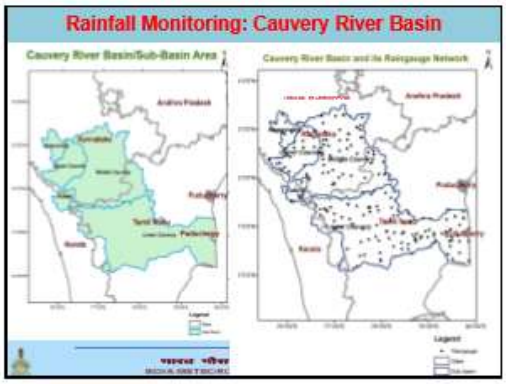
1. The outflow from Hemavathy and Harangi are deducted from Inflow into Krishnarajasagara.

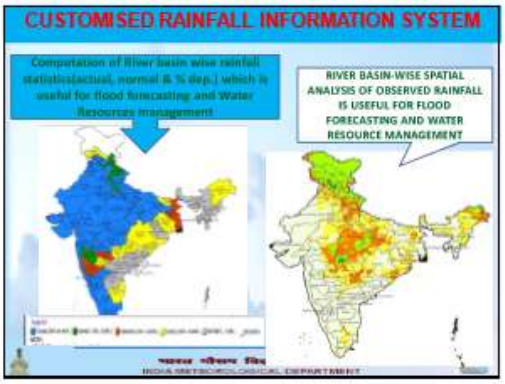
2. The outflows from Hemavathy and Harangi are not considered since, the outflows is accounted for in the inflows into krishnarajasagara.

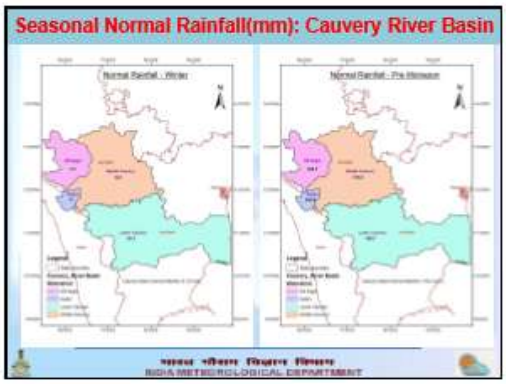
Annex-V

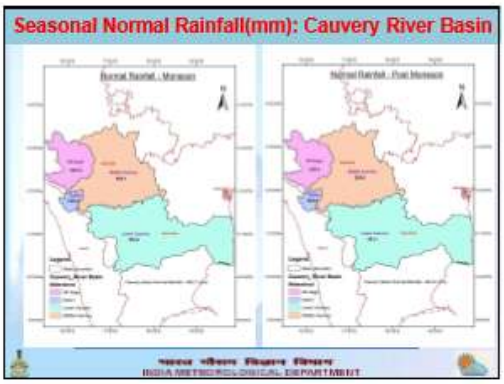
Presentation by IMD on rainfall monitoring in Cauvery Basin

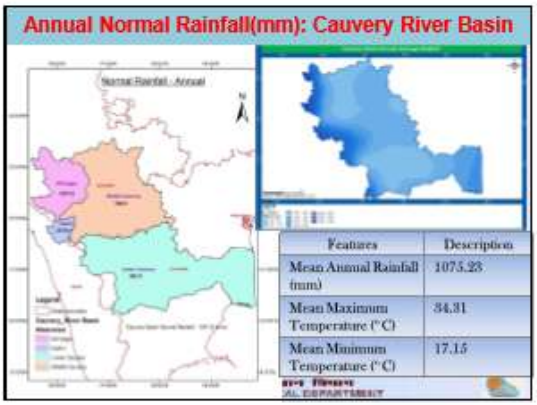




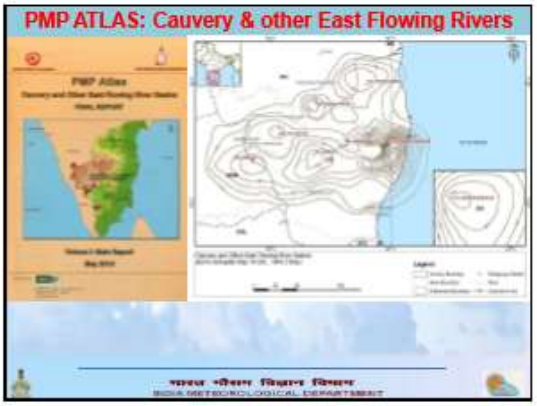


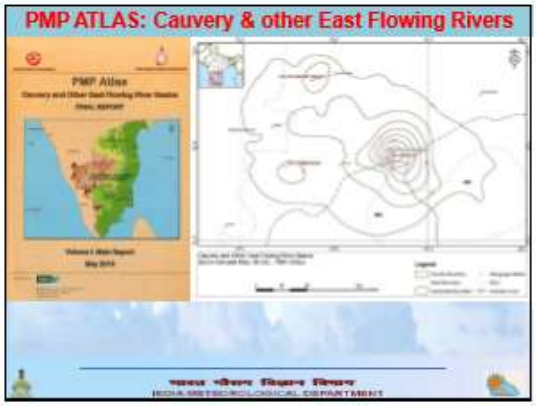


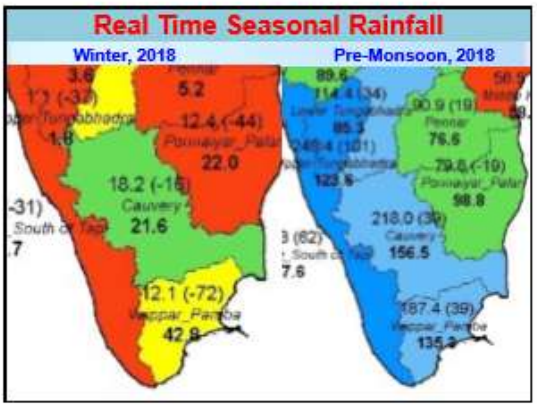


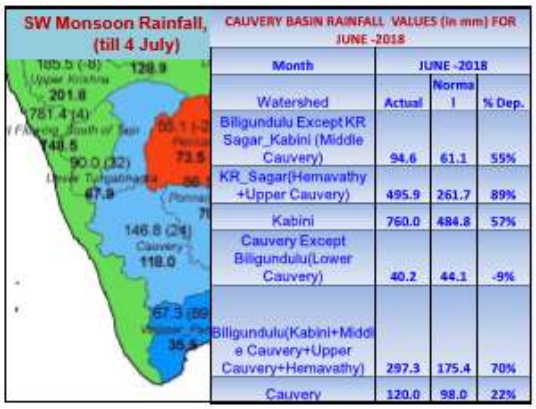


S. N	Cauvery sub-basins	Area (sq km)	Rainfall (mm)							
			June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Harangi	421	377.8	287.7	403.0	195.7	85.7	48.0	14.5	1705.7
2	Hemavathi	2997	314.1	314.0	216.0	136.5	81.5	50.9	11.1	1143.4
3	Kabini	2177	547.0	529.0	345.0	213.1	141.9	65.2	22.4	1863.8
4	Middle Cauvery	29869	68.1	75.4	72.6	112.1	92.1	64.3	13.6	500.6
5	Upper Cauvery	7040	277.7	380.6	280.6	154.1	88.8	47.8	14.6	1139.7
6	Lower Cauvery	42982	46.7	52.5	79.6	75.1	130.5	80.6	67.3	532.2
7	Upper Vaigai	2273	44.6	28.9	38.3	44.7	127.4	94.3	42.9	421.1
8	Lower Vaigai	4122	28.8	41.9	72.1	90.3	165.4	65.8	48.5	512.8
9	Pennar	634	253.3	181.9	147.4	97.3	109.7	118.7	44.9	970.2
	Cauvery basin Total		1978.8	2142.6	1695.2	1186.0	1037.5	629.9	282.0	









Month	JUNE -2018		
Watershed	Actual	Normal	% Dep.
Biligundulu Except KR Sagar_Kabini (Middle Cauvery)	94.6	61.1	55%
KR_Sagar(Hemavathy +Upper Cauvery)	495.9	261.7	89%
Kabini	760.0	484.8	57%
Cauvery Except Biligundulu(Lower Cauvery)	40.2	44.1	-9%
Biligundulu(Kabini+Middle Cauvery+Upper Cauvery+Hemavathy)	297.3	175.4	70%
Cauvery	120.0	98.0	22%

MONTHLY AAP VALUES TILL 2018 FOR VARIOUS SUB BASINS OF CAUVERY

	Harangi	Hemavathy	Kabini	Middle Cauvery	Upper Cauvery	Lower Cauvery	Upper Vaigai	Lower Vaigai	Periyar	Accorage For Cauvery	Av. for 9 sub basin
Jan	0.0	0.0	0.0	0.1	0.0	15.9	0.9	2.0	0.0	14.0	16.8
Feb	0.0	2.2	7.3	4.7	5.8	9.1	7.2	12.5	54.2	98.6	102.5
Mar	79.6	49.5	80.5	32.7	46.1	14.4	56.2	28.9	50.2	302.6	418.0
Apr	95.4	57.5	105.7	58.0	59.6	18.7	94.1	48.6	152.8	374.6	670.1
May	387.6	295.0	545.1	199.5	260.9	104.0	197.4	152.6	545.8	1588. 0	2285. 8
Jun	861.4	511.7	708.4	79.5	584.0	55.0	52.1	19.7	654.4	2777. 7	5485. 9

Rainfall Forecasting

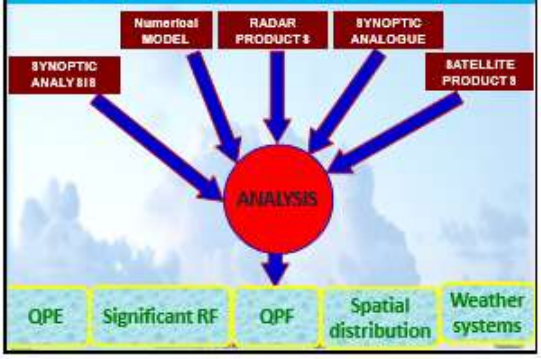
MINISTERIAL COMMITTEE ON FLOODS &FLOOD RELIEF-1972 RECOMMENDED THAT

- Flood Forecasting Centres should be established in all flood prone basins.
- Flood Meteorological Offices should be established by India Meteorological Department to work in close co-operation with Flood

In India Flood Forecasting activity is the joint responsibility of
- >India Meteorological Department
- > Central Water Commission.

IMD provides Hydromet input through their Flood Forecasting Offices(FMOs).
In hydromet input, Quantitative Precipitation Forecast (QPF) is the main input which is used in rainfall runoff models by CWC.

Quantitative Precipitation Forecast (QPF



Forecast for Cauvery Basin issued on 03 July 2018

		DAY-1	DAY-2	DAY-3	DAY-1	DAY-2	DAY-3
1.	HARANGI	0.1-10	11-25	11-25	L/M FWS	L/M FWS	L/M FWS
2.	HEMAVATHY	0.1-10	0.1-10	11-25	L/M SCT	L/M SCT	L/M FWS
3.	KABINI	0.1-10	0.1-10	11-25	L/M SCT	L/M FWS	L/M FWS
4.	MIDDLE CAUVERY	0.1-10	0.1-10	0.1-10	L/M ISL	L/M ISL	L/M ISL
5.	UPPER CAUVERY	0.1-10	11-25	11-25	L/M SCT	L/M FWS	M/H FWS
6.	LOWER CAUVERY	0.1-10	0.1-10	0.1-10	L/M SCT	L/M SCT	L/M ISL
7.	UPPER VAIGAI	0.1-10	0.1-10	0.1-10	L/M SCT	L/M SCT	L ISL
	LOWER VAIGAI	0.1-10	0.1-10	0.1-10	L/M SCT	L/M SCT	L ISL
9.	PERIYAR	0.1-10	0.1-10	0.1-10	L SCT	L SCT	L SCT

Heavy Rainfall Warning Issued On 03 July 2018

NAME OF BASIN/SUB-BASIN	Day-1	Day-2	Day-3
CAUVERY			
HARANGI	NIL	NIL	NIL
HEMAVATHY	NIL	NIL	Heavy at ISOL places
KABINI	NIL	NIL	NIL
MIDDLE CAUVERY	NIL	NIL	NIL
UPPER CAUVERY	NIL	NIL	Heavy at ISOL places
LOWER CAUVERY	NIL	NIL	NIL
UPPER VAIGAI	NIL	NIL	NIL
LOWER VAIGAI	NIL	NIL	NIL
PERIYAR	NIL	NIL	NIL

Outlook For Subsequent Four Days Issued On 03 July 2018

	Day-4	Day-5	Day-6	Day-7
HARANGI	Increase in Rainfall	No Large Change	No Large Change	No Large Change
HEMAVATHY	Increase in Rainfall	No Large Change	No Large Change	No Large Change
KABINI	No Large Change	No Large Change	No Large Change	No Large Change
MIDDLE CAUVERY	No Large Change	No Large Change	No Large Change	No Large Change
UPPER CAUVERY	Increase in Rainfall	No Large Change	No Large Change	No Large Change
LOWER CAUVERY	No Large Change	No Large Change	No Large Change	No Large Change
UPPER VAIGAI	No Large Change	No Large Change	No Large Change	No Large Change
LOWER VAIGAI	No Large Change	No Large Change	No Large Change	No Large Change
PERIYAR	No Large	No Large	No Large	No Large

SUB-BAISN CODE/NAME	REALISED 24 hr AVERAGE RAINFALL (mm) Recorded on 03 July 2018(0830 IST)
HARANGI	10.0
HEMAVATHY	1.5
KABINI	1.9
MIDDLE CAUVERY	3.4
UPPER CAUVERY	5.7
LOWER CAUVERY	13.2
UPPER VAIGAI	2.8
LOWER VAIGAI	8.7
PERIYAR	8.6

INDIA METEOROLOGICAL DEPARTMENT

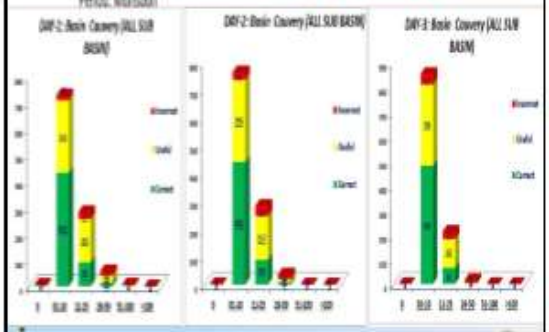
Addresses to which QPF and Hydromet Bulletins are sent daily by FMO, Bengaluru

Sl. No.	Name of the Addressee	E-mail address
1.	Directorate, Flood forecasting Monitoring, CWC, New Delhi	ffmcwc@gmail.com, fmdte@nic.in
2.	Hydrology division, CWC, Chennai	eecwcchennai@yahoo.co.in
3.	Chief Engineer, CWC, Coimbatore	srdcwc@rediffmail.com
4.	Southern Division, CWC, Coimbatore	cecsro-cwc@nic.in
5.	Planning &Development Directorate, CWC, New Delhi	pnddte-cwc@nic.in
6.	Lower Krishna Division, CWC, Hyderabad	eelkd2010@yahoo.in
7.	DGM, Hydrology, New Delhi, RMC Chennai and related MC.	dgmfmu@rediffmail.com
8.	O/o of EE, Jalasouda, HMT post, Bangalore	[illegible]

INDIA METEOROLOGICAL DEPARTMENT

Verification of Forecast

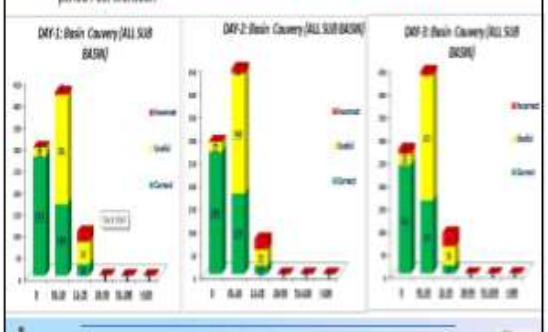
Period: Monsoon



INDIA METEOROLOGICAL DEPARTMENT

Verification of Forecast

period Post Monsoon



INDIA METEOROLOGICAL DEPARTMENT

Thank you

INDIA METEOROLOGICAL DEPARTMENT

Proforma for maintaining data of inflow and outflow of the reservoirs in the Cauvery Basin

1 Elevation-Capacity curve of each reservoir
2 Elevation-Area curve of each reservoir
3 Name of reservoir

Year
Month

S.No.	Date	Time	Initial water level	Intial Storage			Releases				Canal releases (TMC)	Others (TMC)	Evaporation (TMC)	Total abstraction including evaporation lossess (TMC)	Final Storage			Final water level	Change in storage (TMC)	Gross Inflow (TMC)	Import from other basin (TMC)	Net Inflow (TMC)
				Gross (TMC)	Live (TMC)	Active (TMC)	Spill (TMC)	Power house (TMC)	River sluice (TMC)	Total (TMC)					Gross (TMC)	Live (TMC)	Active (TMC)					
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11=8+9+10*	*12*	*13*	*14*	*15=12+13+14*	*16*	*17*	*18*	*19*	*20=17-6*	*21=20-(11+15)*	*22*	*23=21-22*
1	01.06.2018	8:00:00																				
2	02.06.2018	8:00:00																				
3	...	..																				
..	...	..																				

Annex-VI

Proforma for Water Requirement

Sheet 1

Name of State: Year:

Sl. No.	Name of Project/Scheme	Crop-wise Details									Evaporation Losses (TMC)	Total water requirement (TMC) i.e. sum of col. 5, 8, 11 & so on	Remarks
		Crop 1			Crop 2			Crop 3 & so on					
		Area (acre)	Delta (feet)	Water Requirement (TMC)	Area (acre)	Delta (feet)	Water Requirement (TMC)	Area (acre)	Delta (feet)	Water Requirement (TMC)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A. Major Projects/Schemes													Break-up of Total water requirement on 10-daily basis is as per Sheet 2 & 3.
1													
2													
.													
.													
.													
B. Medium Projects/Schemes													
1													
2													
.													
.													
.													
C. Minor Projects/Schemes													
1													
2													
.													
.													
.													
D. Domestic Demand		-	-	-	-	-	-	-	-	-			
E. Industrial Demand		-	-	-	-	-	-	-	-	-			
Grand Total of Water Requirement in TMC (A + B + C + D + E)													

Annex VIII

Proforma for Water Requirement

Sheet 2 - Irrigation Demand

Name of Project/Scheme: *Scheme 1*

Sl. No.	Crop-wise Details	June - I	June - II	June - III	July - I	July - II	July - III	Aug - I	Aug- II	Aug- III	Sept - I	Sept - II	Sept - III	Oct -I	Oct -II	Oct -III	& so on	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Crop 1																	Sum = col. 5 of Sheet 1
2	Crop 2																	Sum = col. 8 of Sheet 1
3	Crop 3 & so on																	Sum = col. 11 of Sheet 1
4																		
5																		
	Sub - Total 1(TMC)																	

Name of Project/Scheme: *Scheme 2*

Sl. No.	Crop-wise Details	June - I	June - II	June - III	July - I	July - II	July - III	Aug - I	Aug- II	Aug- III	Sept - I	Sept - II	Sept - III	Oct -I	Oct -II	Oct -III	& so on	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Crop 1																	Sum = col. 5 of Sheet 1
2	Crop 2																	Sum = col. 8 of Sheet 1
3	Crop 3 & so on																	Sum = col. 11 of Sheet 1
4																		
5																		
	Sub - Total 2(TMC)																	

Name of Project/Scheme: *Scheme 3 & so on*

Sl. No.	Crop-wise Details	June - I	June - II	June - III	July - I	July - II	July - III	Aug - I	Aug- II	Aug- III	Sept - I	Sept - II	Sept - III	Oct -I	Oct -II	Oct -III	& so on	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Crop 1																	Sum = col. 5 of Sheet 1
2	Crop 2																	Sum = col. 8 of Sheet 1
3	Crop 3 & so on																	Sum = col. 11 of Sheet 1
4																		
	Sub - Total 3(TMC)																	
	Grand Total (TMC) i.e. sum of Sub-Totals 1, 2 , 3 & so on																	

Annex-IX

Proforma for Water Requirement

Sheet 3 - Domestic / Industrial Demand

Sl. No.	Domestic / Industrial Details	June - I	June - II	June - III	July - I	July - II	July - III	Aug - I	Aug - II	Aug- III	Sept - I	Sept - II	Sept - III	Oct - I	Oct - II	Oct - III	& so on	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																		Sum = col. 12 of Sheet 1
2																		
3																		
4																		
5																		
Total (TMC)																		

Note: Separate sheets should be made for both domestic as well as for industrial demands.