

BRIEF NOTE ON LIVE STORAGE STATUS OF 120 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 14.11.2019)

1. ALL INDIA STATUS

Central Water Commission is monitoring live storage status of 120 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 44 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 120 reservoirs is **170.328 BCM** which is about **66.06%** of the live storage capacity of 257.812 BCM which is estimated to have been created in the country. As per reservoir storage bulletin dated **14.11.2019**, live storage available in these reservoirs is **153.472 BCM**, which is **90%** of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was **109.82 BCM** and the average of last 10 years live storage was **114.09 BCM**. Thus, the live storage available in 120 reservoirs as per **14.11.2019 Bulletin** is **140%** of the live storage of corresponding period of last year and **135%** of storage of average of last ten years.

As per Table-01, the overall storage position is **better than the** corresponding period of last year in the country as a whole and is also **better than the** average storage of last ten years during the corresponding period.

2. REGION WISE STORAGE STATUS:

a) NORTHERN REGION

The northern region includes States of Himachal Pradesh, Punjab and Rajasthan. There are 8 reservoirs under CWC monitoring having total live storage capacity of 19.17 BCM. As per Reservoir Storage Bulletin dated **14.11.2019**, the total live storage available in these reservoirs is **14.92 BCM** which is **78%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **80%** and average storage of last ten years during corresponding period was **72%** of live storage capacity of these reservoirs. Thus, storage during current year is less than the corresponding period of last year but it is better than the average storage of last ten years during the corresponding period.

b) EASTERN REGION

The Eastern region includes States of Jharkhand, Odisha, West Bengal, Tripura and Nagaland. There are 17 reservoirs under CWC monitoring having total live storage capacity of 19.37 BCM. As per Reservoir Storage Bulletin dated **14.11.2019**, the total live storage available in these reservoirs is **17.15 BCM** which is **89%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **69%** and average storage of last ten years during corresponding period was **74%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year and is also better than the average storage of last ten years during the corresponding period.

c) WESTERN REGION

The Western region includes States of Gujarat and Maharashtra. There are 41 reservoirs under CWC monitoring having total live storage capacity of 34.84 BCM. As per Reservoir Storage Bulletin dated **14.11.2019**, the total live storage available in these reservoirs is **33.45 BCM** which is **96%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **54%** and average storage of last ten years during corresponding period was **64%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

d) CENTRAL REGION

The Central region includes States of Uttar Pradesh, Uttarakhand, Madhya Pradesh and Chhattisgarh. There are 18 reservoirs under CWC monitoring having total live storage capacity of 44.14 BCM. As per Reservoir Storage Bulletin dated **14.11.2019**, the total live storage available in these reservoirs is **41.62 BCM** which is **94%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **70%** and average storage of last ten years during corresponding period was **68%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

e) SOUTHERN REGION

The Southern region includes States of Andhra Pradesh, Telangana, AP&TG (2combined projects in both states), Karnataka, Kerala and Tamil Nadu. There are 36 reservoirs under CWC monitoring having total live storage capacity of 52.81 BCM. As per Reservoir Storage Bulletin dated **14.11.2019**, the total live storage available in these reservoirs is **46.34 BCM** which is **88%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **60%** and average storage of last ten years during corresponding period was **64%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year and is also better than the average storage of last ten years during the corresponding period.

The region wise and reservoir wise details are given in the following pages of the Bulletin.

BROAD ANALYSIS OF OTHER TABLES IN THE BULLETIN

- Normal storage means average storage of last ten years, Close to normal storage means where shortfall is upto 20% of normal, deficient storage is where shortfall is more than 20% of the normal and upto 60% of the normal, highly deficient means where shortfall is more than 60% of normal.
- In the table on page 11, better than normal storage is available in Narmada, Tapi, Mahi, Sabarmati, Rivers of Kutch, Godavari, Krishna, Cauvery & neighbouring EFRs, Ganga and Mahanadi & Neighbouring East Flowing Rivers and West Flowing Rivers of South. Close to Normal in Indus and NIL in Deficient and in Highly Deficient.
- Table on page 12-14 of the bulletin. The numbers of reservoirs having storage more than last year are **105** and reservoirs having storage more than average of last ten years are **110** The numbers of reservoirs having storage less than or equal to 20% with respect to last year is **1** and having storage less than or equal to 20% with reference to average of last ten years is **2**. The number of reservoirs having storage less than or equal to 50% with respect to last year are **1** and having storage less than or equal to 50% with reference to average of last ten years are **3**.

States having better storage (in %) than last year for corresponding period:

Rajasthan, Jharkhand, Odisha, West Bengal, Nagaland, Gujarat, Maharashtra, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Chhattisgarh, AP&TG (Two combined projects in both states), Andhra Pradesh , Telangana, Karnataka, Kerala and Tamil Nadu.

States having equal storage (in %) to last year for corresponding period: NIL

States having lesser storage (in %) than last year for corresponding period: Himachal Pradesh, Punjab and Tripura,

STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON : 14.11.2019

- 1 Central Water Commission is monitoring storage status of 120 important reservoirs spread all over the country, in which **44** reservoirs have hydropower benefit each with installed capacity of more than 60 MW. These reservoirs are identified thus(*) in the enclosed weekly report.
- 2 The total live storage in 120 important reservoirs in different parts of the country, monitored by CWC as on **14.11.2019** is **153.472** BCM (**90** percent of the live storage capacity at FRL).The current year's storage is nearly **140** percent of last year's storage and **135** percent of the average of last ten years.

3 Region wise storage status:-

REGION (States), (Monitoring No. of Reservoirs)	Filling position of 120 reservoirs w.r.t. FRL									Departure from Normal storage	
	100%	91%- 99%	81%- 90%	71%- 80%	61%- 70%	51%- 60%	41%- 50%	40% & below			
NORTH (HP,Punjab & Rajasthan), (8 Resv.)	3	2	-	2	1	-	-	-	H.P.	-7 %	
									PUNJAB	33 %	
									RAJASTHAN	44 %	
EAST (Jharkhand,Odisha, Tripura, Nagaland & W.Bengal) (17 Resv.)	4	5	2	2	2	1	1	-	JHARKHAND	16 %	
									ODISHA	19 %	
									W. BENGAL	76 %	
									TRIPURA	-21 %	
									NAGALAND	7 %	
WEST (Guj.& Mah.), (41 Resv.)	19	14	3	4	-	-	-	1	GUJARAT	75 %	
									MAH.	32 %	
CENTRAL (MP,UP,Uttarakhand & Chh.), (18 Resv)	3	7	3	5	-	-	-	-	U.P.	87 %	
									UTTARAKHAND	4 %	
									M.P.	39 %	
									CHHATISGARH	27 %	
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (36 Resv.)	8	11	6	4	3	1	-	3	AP&TG	35 %	
									A.P	62 %	
									TELANGANA	35 %	
									KARNATAKA	34 %	
									KERALA	11 %	
									T.N.	76 %	
Status of 120 reservoirs	37	39	14	17	6	2	1	4			

4 Basin wise storage position:

Better than normal:

Ganga, Narmada ,Tapi, Mahi,Sabarmati, Rivers of Kutch , Godavari, Krishna, Mahanadi & Neighbouring East Flowing Rivers, Cauvery & neighbouring EFRs. and West Flowing Rivers of South.

Close to normal: Indus

Deficient: NIL

Highly deficient: NIL

5 Out of 120 reservoirs, **116** reservoirs reported more than 80% of normal storage & **4** reservoirs reported 80% or below of normal storage. Out of these **4** reservoirs **3** having storage upto 50% of normal storage.

Name of reservoir	%
OMKARESHWAR	0
SINGUR	10
NIZAM SAGAR	47

1 reservors having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
0	0	1

6 Out of **44** reservoirs with significant(*) hydropower generation, the storage build up is less than or equal to normal in **5** reservoirs.

NOTE : **Normal:** Average of previous ten years, **Close to normal:** Where shortfall is up to 20% of the normal,

Deficient: Where shortfall is more than 20% of the normal and up to 60% of the normal,

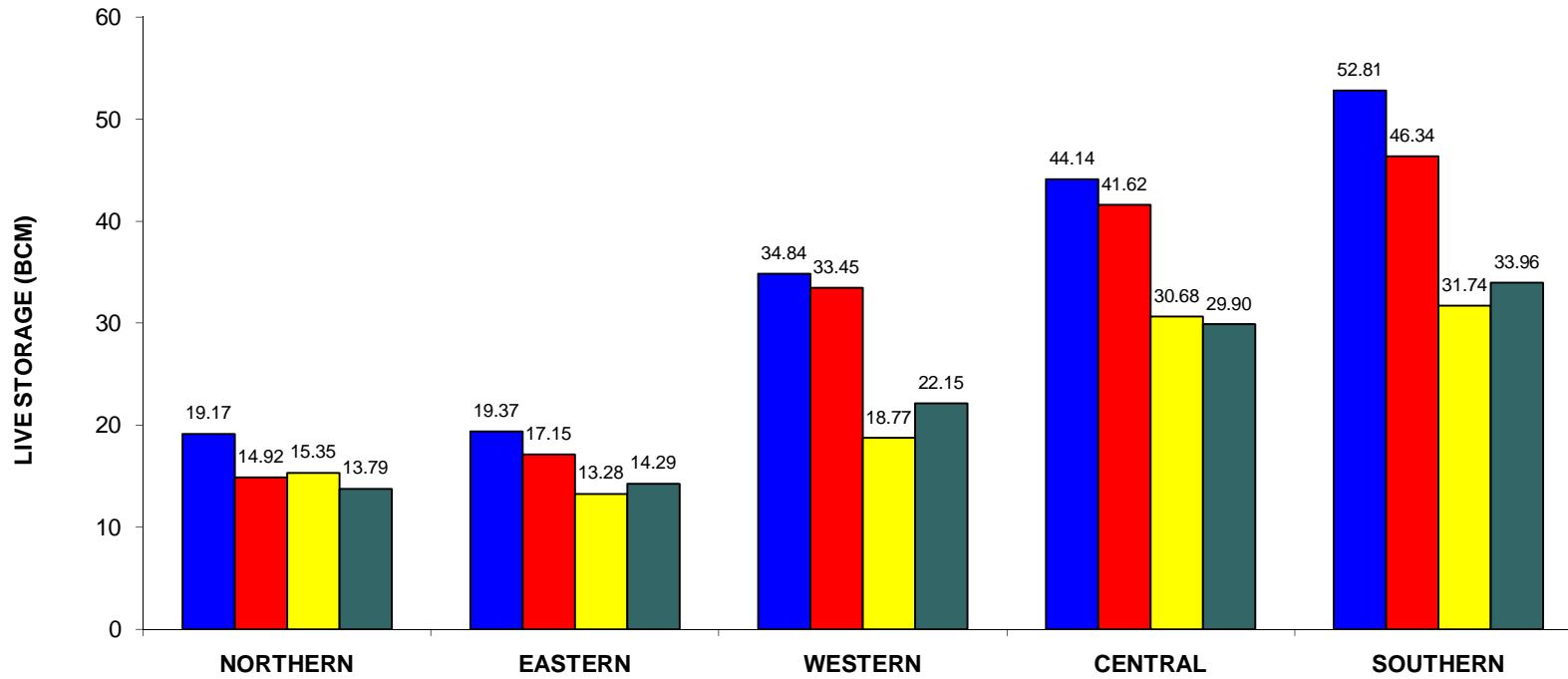
Highly deficient : Where shortfall is more than 60% of the normal

TABLE-01
STATUS OF CURRENT STORAGE
14.11.2019

S. NO.	REGION/STATE	NO. OF RESERVOIRS MONITORED	LIVE CAPACITY AT FRL (BCM)	LIVE STORAGE (BCM)			STORAGE AS PERCENTAGE OF LIVE CAPACITY AT FRL			% depa rture from 10 yrs
				CURRENT YEAR	LAST YEAR	LAST 10 YRS. AVG.	CURRENT YEAR	LAST YEAR	LAST 10 YRS. AVERAGE	
NORTHERN REGION										
1	H.P.	3	12.48	8.79	10.72	9.42	70	86	76	-7
2	PUNJAB	1	2.34	1.84	1.96	1.38	79	84	59	33
3	RAJASTHAN	4	4.36	4.29	2.67	2.99	99	61	69	44
SUB-TOTAL		8	19.17	14.92	15.35	13.79	78	80	72	8
EASTERN REGION										
1	JHARKHAND	5	1.79	1.39	1.05	1.20	78	58	67	16
2	ODISHA	8	15.33	14.18	11.27	11.97	92	73	78	19
3	W. BENGAL	2	1.39	1.07	0.46	0.61	76	33	44	76
4	TRIPURA	1	0.31	0.16	0.24	0.20	50	78	63	-21
5	NAGALAND	1	0.54	0.35	0.27	0.33	65	50	61	7
SUB-TOTAL		17	19.37	17.15	13.28	14.29	89	69	74	20
WESTERN REGION										
1	GUJARAT	17	17.96	17.11	8.26	9.78	95	46	54	75
2	MAH.	24	16.88	16.34	10.51	12.36	97	62	73	32
SUB-TOTAL		41	34.84	33.45	18.77	22.15	96	54	64	51
CENTRAL REGION										
1	U.P.	4	6.83	6.63	3.88	3.55	97	57	52	87
2	UTTARAKHAND	2	4.81	3.94	3.86	3.78	82	80	79	4
3	M.P.	9	28.40	27.59	20.31	19.84	97	72	70	39
4	CHHATISGARH	3	4.10	3.45	2.62	2.73	84	64	67	27
SUB-TOTAL		18	44.14	41.62	30.68	29.90	94	70	68	39
SOUTHERN REGION										
1	AP&TG	2	13.40	10.75	5.50	7.95	80	41	59	35
2	A.P.	2	2.50	2.47	1.59	1.53	99	63	61	62
3	TELANGANA	4	4.23	3.08	1.31	2.28	73	31	54	35
4	KARNATAKA	16	24.63	22.83	17.13	17.08	93	70	69	34
5	KERALA	6	3.83	3.07	2.91	2.76	80	76	72	11
6	T.N.	6	4.23	4.14	3.32	2.36	98	78	56	76
SUB-TOTAL		36	52.81	46.34	31.74	33.96	88	60	64	36
COUNTRY AS A WHOLE		120	170.33	153.47	109.82	114.09	90	64	67	35

REGIONWISE STORAGE POSITION

(As on 14.11.2019)



REGION	(H.P., Pun., Raj.)	(Jhar., Ori, W.B., Tripura, Nagaland)	(Guj., Mah.)	(U.P., Uttranchal, M.P., Chht.)	(A.P., TG., Kar., T.N., Ker)
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█ DESIGNED CAPACITY	█ CURRENT STORAGE	█ LAST YEAR'S STORAGE	█ 10 YRS AVG. STORAGE
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**Table-02 STATEWISE DISTRIBUTION OF PROJECTS HAVING
STORAGE 80% OR LESS OF AVG. OF LAST 10 YRS' STORAGE AS
ON:
14.11.2019**

STATE	TOTAL NO OF PROJECTS MONITORED	PROJECTS HAVING DEFICIENCY MORE THAN 20% OF AVG. OF LAST 10 YRS.	Current Year's Storage as %age of NORMAL
Telengana	4	NIZAM SAGAR	47
		SINGUR	10
Mahaya Pradesh	9	OMKARESHWAR	0
Tripura	1	GUMTI	79

Statewise distribution of projects having storage 50% or less of avg.

Of last 10 yrs' storage as on:

14.11.2019

STATE	TOTAL NO OF PROJECTS MONITORED	PROJECTS HAVING DEFICIENCY MORE THAN 50% OF AVG. OF LAST 10 YRS.	Current Year's Storage as %age of NORMAL
Telengana	4	NIZAM SAGAR	47
		SINGUR	10
Mahaya Pradesh	9	OMKARESHWAR	0

**IMD SUB-DIVISIONS HAVING LOW RAINFALL (80% OR LESS THAN 80% OF NORMAL) AND
STORAGE IN RESERVOIRS FALLING UNDER THESE AREAS AS ON:**

14.11.2019

RAINFALL POSITION*			STORAGE POSITION			
Meteorological Sub-Divisions	CUMULATIVE RAINFALL (mm) (1st October to 06th Nov 2019)	%AGE DEPARTURE FROM NORMAL	RESERVOIRS BENEFITING IMD SUB-DIVISION	LIVE STORAGE CAPACITY (BCM)	CURRENT STORAGE (BCM)	%AGE DEPARTURE FROM LAST 10 YRS AVG. STORAGE
Andaman & Nicobar Islands	212	-36	No reservoir monitored by CWC falls under this IMD sub-Division			
Arunachal Pradesh	118	-41	No reservoir monitored by CWC falls under this IMD sub-Division			
Sub- Himalayan West Bengal & Sikkim	116	-26	No reservoir monitored by CWC falls under this IMD sub-Division			
Bihar	25	-59	No reservoir monitored by CWC falls under this IMD sub-Division			
East Uttar Pradesh	25	-34	Jirgo	0.15	0.12	81
West Uttar Pradesh	9	-60	Matatila	0.71	0.53	23
			Ramganga	2.20	1.57	3
			Sharda Sagar	0.33	0.33	47
Haryana, Chandigarh & Delhi	5	-49	Gobind Sagar	6.23	4.68	-6
			Pong Dam	6.16	4.03	-8
Himachal Pradesh	25	-20	Gobind Sagar	1.16	1.16	30
			Pong Dam	3.28	2.84	38
			Kol Dam	1.39	1.39	22

*Information/Data as received from IMD via e-mail.

WEEKLY REPORT - BASINWISE

WEEK ENDING :- 14.11.2019

NAME OF BASIN	LIVE CAP. AT FRL	THIS YEAR'S STORAGE		LAST YEAR'S STORAGE		LAST 10 YEARS' AVG. STORAGE		% DEPARTURE W.R.T. AVE. OF 10 YEARS'
GANGA	30.184	27.472	91.02%	18.108	59.99%	18.219	60.36%	50.79
INDUS	14.819	10.629	71.73%	12.675	85.53%	10.804	72.91%	-1.62
NARMADA	22.344	22.078	98.81%	15.992	71.57%	14.526	65.01%	51.99
TAPI	7.394	7.394	100.00%	2.789	37.72%	4.907	66.36%	50.68
MAHI	4.012	3.588	89.43%	3.406	84.90%	3.075	76.65%	16.68
SABARMATI	1.042	1.019	97.79%	0.332	31.86%	0.674	64.68%	51.19
RIVERS OF KUTCH	1.186	0.883	74.45%	0.216	18.21%	0.536	45.19%	64.74
GODAVARI	17.714	15.735	88.83%	9.129	51.54%	10.817	61.06%	45.47
KRISHNA	33.573	29.623	88.23%	18.902	56.30%	23.053	68.67%	28.50
MAHANADI & NEIGHBOURING EFRS	13.471	12.049	89.44%	8.907	66.12%	10.435	77.46%	15.47
CAUVERY & NEIGHBOURING EFRS	8.359	8.227	98.42%	6.016	71.97%	4.844	57.95%	69.84
WEST FLOWING RIVERS OF SOUTH	16.230	14.775	91.04%	13.349	82.25%	12.196	75.14%	21.15
TOTAL	170.328	153.472		109.821		114.086		
PERCENTAGE								34.52

WEEKLY REPORT OF 120 IMPORTANT RESERVOIRS OF INDIA

WEEK ENDING : 14.11.2019

S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	STORAGE AS % OF LIVE CAPACITY AT FRL			BENEFITS	
							CURREN T YEAR	LAST YEAR	LAST 10 YEARS AVERAG E	IRR. (CCA) IN TH. HA	HYD EL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
KARNATAKA											
93	KRISHNARAJA SAGARA	752.50	752.50	1.163	1.163	14-11-19	100	96	77	79	0
*94	TUNGABHADRA	497.74	497.68	3.276	2.836	14-11-19	87	50	63	529	72
95	GHATAPRABHA(HIDKAL)	662.95	662.94	1.391	1.387	11-11-19	100	81	82	317	0
96	BHADRA	657.76	657.64	1.785	1.771	11-11-19	99	89	78	106	39
97	LINGANAMAKKI	554.43	553.84	4.294	4.113	14-11-19	96	85	80	0	55
98	NARAYANPUR	492.25	492.25	0.863	0.740	13-11-19	86	44	74	425	0
99	MALAPRABHA(RENUKA)	633.83	633.83	0.972	0.972	11-11-19	100	54	55	215	0
100	KABINI	696.66	695.99	0.444	0.433	14-11-19	98	83	46	85	0
101	HEMAVATHY	890.63	889.68	0.927	0.927	14-11-19	100	56	55	265	0
102	HARANGI	871.42	869.82	0.220	0.179	14-11-19	81	43	45	53	0
103	SUPA	564.00	563.37	4.120	4.039	14-11-19	98	85	69	0	0
104	VANI VILAS SAGR	652.28	642.32	0.802	0.235	11-11-19	29	4	16	123	0
*105	ALMATTI	519.60	519.60	3.105	3.105	13-11-19	100	52	77	0	290
*106	GERUSOPPA	55.00	49.74	0.130	0.101	13-11-19	78	88	79	83	240
*107	MANI DAM	594.36	590.37	0.884	0.676	14-11-19	76	85	69	0	469
108	TATTIHALLA	468.30	464.15	0.249	0.152	14-11-19	61	50	41	0	0
KERALA											
109	KALLADA(PARAPPAR)	115.82	113.96	0.507	0.446	14-11-19	88	87	80	62	0
*110	IDAMALAYAR	169.00	161.68	1.018	0.807	14-11-19	79	68	75	33	75
*111	IDUKKI	732.43	726.58	1.460	1.139	14-11-19	78	79	66	0	780
*112	KAKKI	981.46	976.45	0.447	0.364	14-11-19	81	74	77	23	300
*113	PERIYAR	867.41	864.16	0.173	0.098	14-11-19	57	64	59	84	140
114	MALAMPUZHA	115.06	114.85	0.224	0.216	14-11-19	96	81	82	21.17	2.5
TAMIL NADU											
115	LOWER BHAWANI	278.89	280.42	0.792	0.792	14-11-19	100	100	52	105	8
*116	METTUR(STANLEY)	240.79	240.80	2.647	2.647	14-11-19	100	69	53	122	360
117	VAIGAI	279.20	276.62	0.172	0.105	14-11-19	61	90	55	61	6
118	PARAMBIKULAM	556.26	555.99	0.380	0.374	14-11-19	98	91	75	101	0
119	ALIYAR	320.04	319.45	0.095	0.092	14-11-19	97	84	79	0	60
*120	SHOLAYAR	1002.79	1002.76	0.143	0.129	14-11-19	90	75	71	0	95
TOTAL FOR 120 RESERVOIRS				170.328	153.472						
PERCENTAGE							90	64	67		

Sd/-

* HYDEL POWER CAPACITY HAVING CAPACITY MORE THAN 60MW

Director

\$ TOTAL CCA 342 TH. HA OF DVC SYSTEM

W. M. , CWC

TOTAL CCA 101 TH. HA OF PARAMBIKULAM & ALIYAR

@' TOTAL CCA 425 TH. HA. OF NARAYANPUR AND ALMATTI

† SABARMATI RESERVOIR IS SUPPLEMENTED WITH NARMADA WATER THROUGH PIPELINE.

14.11.2019

TABLE-03 - CHANGE IN STORAGE FROM LAST WEEK TO THIS WEEK

S. NO.	STATE	NO. OF RESERVOI RS MONITOR	LIVE CAPACITY AT FRL (BCM)	CHANGE IN STORAGE (BCM)		
				CURRENT YEAR	LAST YEAR	10 YRS AVG.

NORTHERN REGION

1	H.P.	3	12.48	-0.19	-0.19	-0.24
2	PUNJAB	1	2.34	-0.04	-0.08	-0.05
3	RAJASTHAN	4	4.36	-0.03	-0.12	-0.10
	SUB-TOTAL	8	19.17	-0.26	-0.38	-0.39

EASTERN REGION

1	JHARKHAND	5	1.79	0.01	-0.02	0.00
2	ORISSA	8	15.33	-0.03	-0.21	0.50
3	W. BENGAL	2	1.39	0.02	0.00	0.00
4	TRIPURA	1	0.31	0.00	-0.01	0.01
5	NAGALAND	1	0.54	-0.01	0.00	0.00
	SUB-TOTAL	17	19.37	-0.03	-0.24	0.51

WESTERN REGION

1	GUJARAT	17	17.96	0.00	-0.11	-0.50
2	MAH.	24	16.88	0.03	-0.42	-0.55
	SUB-TOTAL	41	34.84	0.03	-0.53	-1.05

CENTRAL REGION

1	U.P.	4	6.83	2.11	-0.11	-0.12
2	UTTARAKHAND	2	4.81	-0.04	-0.04	-0.04
3	M.P.	9	28.40	-0.30	-0.21	-0.72
4	CHHATISGARH	3	4.10	0.02	0.00	0.01
	SUB-TOTAL	18	44.14	1.79	-0.37	-0.88

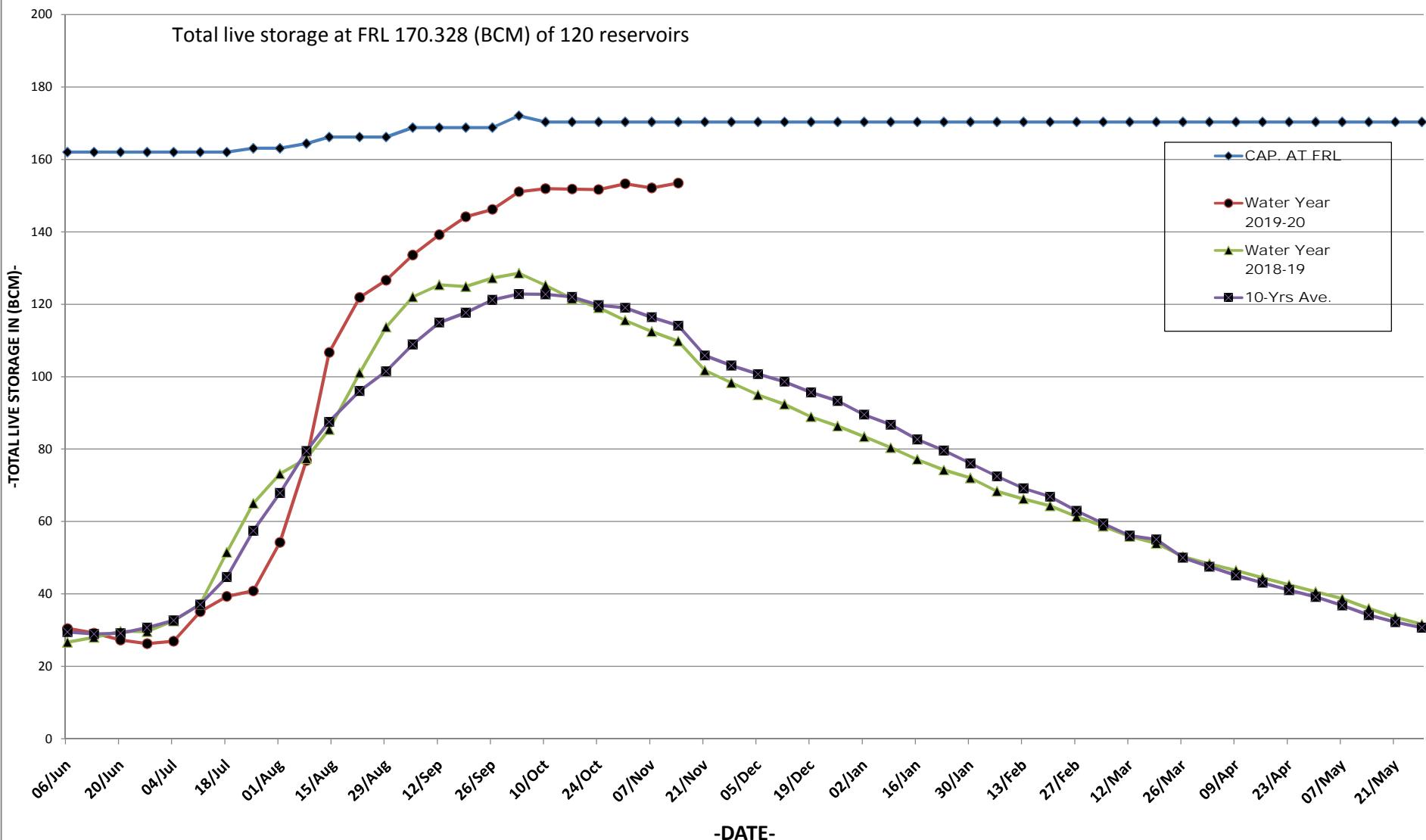
SOUTHERN REGION

1	AP&TG	2	13.40	0.02	-0.29	-0.30
2	A.P	2	2.50	-0.02	-0.06	0.03
3	TELANGANA	4	4.23	0.07	-0.01	-0.17
4	KARNATAKA	16	24.63	-0.22	-0.70	-0.21
5	KERALA	6	3.83	0.02	-0.08	-0.01
6	T.N.	6	4.23	-0.03	0.01	0.15
	SUB-TOTAL	36	52.81	-0.16	-1.13	-0.51
	COUNTRY AS A WHOLE	120	170.33	1.37	-2.65	-2.32

STORAGE POSITION OF 120 IMPORTANT RESERVOIRS IN INDIA

(WATER YEAR 2019-2020)

AS ON 14.11.2019



Map Indicating Statewise Storage Position

(As on 14.11.2019)

