

GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
LOK SABHA
UNSTARRED QUESTION NO. 1504
ANSWERED ON 24.11.2016

SAFETY OF DAMS

1504. DR. SATYAPAL SINGH
SHRI SANJAY DHOTRE
SHRI BHARTRUHARI MAHTAB

Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION be pleased to state:

- (a) the number of reservoirs monitored by the Central Water Commission (CWC) across the country as on date along with the water level and live storage in these reservoirs during each of the last three years and the current year;
- (b) whether the Union Government has issued any advisory/guidelines to the State Governments pertaining to dam safety, if so, the details thereof along with the response of the States thereto;
- (c) the salient features of Dam Rehabilitation and Improvement Project (DRIP) along with the cost of the project;
- (d) the number of dams identified under the said project for rehabilitation across the country, State/UT-wise and the present status of such dams; and
- (e) the other steps taken/being taken by the Union Government to improve safety and operational performance of dams in the country along with achievements, if any?

ANSWER

THE MINISTER OF STATE FOR WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION
(DR. SANJEEV KUMAR BALYAN)

- a) CWC monitors live storage status of 91 reservoirs in the country. Water level and live storage of these reservoirs during current year and last three years is at **Annexure I**.
- b) Yes Madam, various guidelines/ procedures for Dam Safety, prepared by CWC have been circulated to the State Governments as detailed below:
 - i) Report on Dam Safety Procedures.
 - ii) Guidelines for Safety Inspection of Dams.
 - iii) Guidelines for Development and Implementation of Emergency Action Plan (EAP) for Dams.

iv) Standardised Data Book Format, Sample Checklist and Proforma for Periodical Inspection of Dams

c) Govt. of India, with the intent of improving the safety and operational performance of existing dams, has taken up the Dam Rehabilitation and Improvement Project (DRIP) with financial assistance from the World Bank. The DRIP covers the safety and operational performance of about 225 dam projects, in addition to building the institutional capacity of the Dam Safety Organisations of the Participating States and Central Dam Safety Organisation in CWC. The project with an estimated cost of Rs. 2100 Crore is being implemented in Seven States of India, namely, Madhya Pradesh, Odisha, Kerala, Tamil Nadu, Karnataka, Jharkhand (DVC) and Uttarakhand (UJVNL) from 18th April, 2012 for over a period of six-years.

The main implementation agencies for DRIP are the owners of dams – i.e. Water Resources Departments and State Electricity Boards in the participating States. Overall responsibility for the project rests with the Central Project Management Unit (CPMU), in CWC at New Delhi.

d) The State-wise number of the dams identified for rehabilitation, fund allocated to Project Implementing Agencies and the present status of the rehabilitation works are given at **Annexure II**.

e) Legislation in the form of Dam Safety Bill is envisaged to provide for surveillance, inspection, operation and maintenance of dams in India to ensure their safe functioning and to ensure uniform dam safety procedures. A draft Dam Safety Bill has been circulated to State Governments.

**Annexure referred to Lok Sabha Unstarred Question No.1504 on
Safety of Dams for answer on 24.11.2016**

**WATER LEVEL & LIVE STORAGE OF 91 RESERVOIRS OF INDIA
(As on 2nd Week of November 2013-2016)**

S. NO	NAME OF RESERVOIR	Water level (m)					Live Storage (BCM)				
		FRL	14 th Nov. 2013	13 th Nov. 2014	12 th Nov. 2015	10 th Nov. 2016	Total Capacity	14 th Nov. 2013	13 th Nov. 2014	12 th Nov. 2015	10 th Nov. 2016
<u>HIMACHAL PRADESH</u>											
1	GOBIND SAGAR(BHAKRA)	512.06	509.83	505.46	508.71	497.77	6.229	5.608	4.932	5.434	3.858
2	PONG DAM	423.67	418.77	412.15	417.84	413.64	6.157	4.777	3.41	4.570	3.698
<u>PUNJAB</u>											
3	THEIN	527.91	510.65	510.18	508.69	512.11	2.344	1.516	1.111	1.037	1.233
<u>RAJASTHAN</u>											
4	MAHI BAJAJ SAGAR	280.75	281.25	280.75	279.70	281.45	1.711	1.711	1.711	1.577	1.711
5	JHAKAM	359.50	359.45	358.35	357.60	359.55	0.132	0.132	0.121	0.113	0.132
6	RANA PRATAP SAGAR	352.81	351.38	348.95	348.32	350.42	1.436	1.160	0.734	0.628	0.987
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	260.70	259.78	259.11	260.13	0.821	0.446	0.408	0.382	0.422
8	MAITHON	146.3	149.07	145.30	140.79	148.53	0.471	0.471	0.386	0.187	0.471
9	PANCHET HILL	124.97	128.63	123.14	121.31	127.32	0.184	0.184	0.103	0.043	0.184
10	KONAR	425.81	425.65	425.62	423.46	425.78	0.176	0.173	0.173	0.134	0.175
11	TILAIYA	368.81	368.51	369.44	368.01	370.46	0.142	0.131	0.142	0.116	0.142
<u>ODISHA</u>											
12	HIRAKUD	192.02	191.99	191.81	190.72	191.94	5.378	4.803	4.69	3.990	4.759
13	BALIMELA	462.08	462.11	461.47	457.41	459.58	2.676	2.676	2.559	1.885	2.212
14	SALANADI	82.30	80.85	72.20	57.80	70.96	0.558	0.504	0.265	0.046	0.237
15	RENGALI	123.50	123.82	122.06	118.99	123.08	3.432	3.432	2.929	1.978	3.302
16	MACHKUND(JALPUT)	838.16	837.82	837.86	837.41	837.19	0.893	0.859	0.86	0.820	0.798
17	UPPER KOLAB	858.00	856.37	856.90	855.86	856.54	0.935	0.781	0.831	0.732	0.797
18	UPPER INDRAVATI	642.00	641.45	640.41	634.85	639.02	1.456	1.395	1.279	0.734	1.138
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	120.14	111.54	111.16	115.34	0.480	0.440	0.111	0.103	0.220
20	KANGSABATI	134.14	133.39	124.51	124.01	129.98	0.914	0.891	0.248	0.229	0.579
<u>TRIPURA</u>											
21	GUMTI	93.55	90.79	88.60	92.85	92.43	0.312	0.189	0.111	0.281	0.260
<u>GUJARAT</u>											
22	UKAI	105.16	104.43	101.80	100.83	103.90	6.615	6.308	4.882	4.416	5.996
23	SABARMATI(DHAROI)	189.59	187.15	186.59	188.06	189.18	0.735	0.510	0.463	0.592	0.702
24	KADANA	127.7	127.71	127.23	123.12	127.71	1.472	1.192	1.142	0.762	1.472
25	SHETRANJI	55.53	55.47	52.72	55.27	53.77	0.300	0.295	0.127	0.279	0.179
26	BHADAR	107.89	107.78	104.61	106.32	101.53	0.188	0.183	0.076	0.127	0.021
27	DAMANA-GANGA	79.86	79.95	79.00	79.80	79.80	0.502	0.481	0.438	0.475	0.475
28	DANTIWADA	184.1	175.91	171.34	181.46	175.09	0.399	0.148	0.064	0.307	0.130
29	PANAM	127.41	127.40	126.55	123.15	125.85	0.697	0.697	0.494	0.307	0.451
30	SARDAR SAROVAR	121.92	121.67	119.29	119.58	121.12	1.566	1.521	1.117	1.158	1.421

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		FRL	14 th Nov. 2013	13 th Nov. 2014	12 th Nov. 2015	10 th Nov. 2016	Total Capacity	14 th Nov. 2013	13 th Nov. 2014	12 th Nov. 2015	10 th Nov. 2016
31	KARJAN	115.25	115.07	112.60	108.08	109.32	0.523	0.519	0.444	0.326	0.355
<u>MAHARASHTRA</u>											
32	JAYAKWADI(PAITHON)	463.91	459.09	459.15	456.73	462.77	2.171	0.670	0.684	0.196	1.752
33	KOYANA	657.90	657.45	656.46	650.47	657.56	2.652	2.598	2.48	1.797	2.465
34	BHIMA(UJJAN I)	496.83	497.20	496.16	491.90	497.25	1.517	1.517	1.298	0.179	1.517
35	ISAPUR	441.00	441.00	437.96	433.18	435.27	0.965	0.965	0.681	0.348	0.479
36	MULA	552.30	550.38	549.83	544.75	552.08	0.609	0.510	0.483	0.274	0.597
37	YELDARI	461.77	461.77	457.43	451.71	454.61	0.809	0.808	0.42	0.120	0.246
38	GIRNA	398.07	391.17	391.29	384.56	397.13	0.524	0.230	0.235	0.052	0.470
39	KHADAK-VASLA	582.47	581.62	581.56	579.73	581.13	0.056	0.045	0.044	0.022	0.038
40	UPPER VAITARNA	603.50	603.38	601.92	600.20	603.40	0.331	0.328	0.281	0.225	0.328
41	UPPER TAPI	214.00	214.00	214.00	214.00	214.00	0.255	0.255	0.255	0.255	0.255
42	PENCH (TOTALA-DOH)	490.00	489.62	482.39	484.22	481.88	1.091	1.018	0.562	0.625	0.500
43	UPPER WARDHA	342.50	342.47	341.63	341.50	342.30	0.564	0.561	0.488	0.477	0.546
44	BHATSA*	142.07			133.80	139.74	0.942			0.731	0.879
45	DHOM*	747.70			737.19	747.89	0.331			0.181	0.331
46	DUDHGA-NGA*	646.00			639.54	645.56	0.664			0.473	0.664
47	MANIKDOH (KUKADI)*	711.25			693.19	706.49	0.288			0.075	0.208
48	BHANDAR-DARA*	342.50			341.50	342.30	0.304			0.167	0.303
<u>UTTAR PRADESH</u>											
49	MATATILA	308.46	308.43	306.14	304.83	305.20	0.707	0.638	0.401	0.288	0.317
50	RIHAND	268.22	261.83	260.09	259.24	264.90	5.649	2.959	2.276	1.948	4.218
<u>UTTRAKHAND</u>											
51	RAMGANGA	365.30	362.38	361.10	354.08	350.92	2.196	1.977	1.882	1.403	1.228
52	TEHRI	830.00	822.85	822.10	815.60	821.20	2.615	2.320	2.291	2.035	2.254
<u>MADHYA PRADESH</u>											
53	GANDHI SAGAR	399.90	399.89	397.06	399.08	399.77	6.827	6.607	4.947	6.123	6.533
54	TAWA	355.40	354.48	354.24	354.03	354.70	1.944	1.874	1.823	1.781	1.912
55	BARGI	422.76	422.55	422.20	421.15	421.70	3.180	3.136	3.056	2.772	2.926
56	BANSAGAR	341.64	341.53	340.41	336.31	341.26	5.166	5.166	4.619	2.959	5.109
57	INDIRA SAGAR	262.13	261.05	260.53	259.38	261.62	9.745	8.873	8.35	7.351	9.313
58	BARNA	348.55	347.80	346.56	346.40	347.76	0.456	0.404	0.327	0.316	0.402
<u>CHHATTIS GARH</u>											
59	MINIMATA BANGOI	359.66	358.23	357.87	349.68	354.98	3.046	2.648	2.587	1.411	2.129
60	MAHANADI	348.70	348.71	348.00	343.77	348.69	0.767	0.767	0.7	0.366	0.766
<u>A.P & TG</u>											
61	SRISAILAM	269.75	269.26	261.20	255.68	267.07	8.288	5.861	0.236	1.602	4.691
62	NAGARJUNA SAGAR	179.83	177.78	175.26	155.11	162.67	6.841	4.556	3.893	0.000	1.240
<u>ANDHRA PRADESH</u>											
63	SOMASILA	100.58	98.05	95.57	88.60	94.27	1.994	1.492	1.311	0.588	1.145
<u>TELANGANA</u>											
64	SRIRAMSAGAR	332.54	332.54	325.13	320.68	332.17	2.300	2.300	0.654	0.208	2.300

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65	LOWER MANAIR	280.42	280.42	272.17	269.05	279.70	0.621	0.621	0.201	0.106	0.621
<u>KARNATAKA</u>											
66	KRISHNARAJA SAGRA	752.50	751.10	752.23	747.70	739.50	1.163	0.989	1.163	0.747	0.209
67	TUNGABHADRA	497.74	496.54	497.18	492.87	485.99	3.276	2.449	2.66	1.432	0.386
68	GHATAPRABHA	662.95	657.33	661.07	648.51	659.41	1.391	0.999	1.25	0.529	0.851
69	BHADRA	657.76	656.75	656.64	650.74	646.05	1.785	1.672	1.66	1.055	0.677
70	LINGANAMAKKI	554.43	553.18	552.66	546.58	546.98	4.294	3.911	3.765	2.272	2.351
71	NARAYANPUR	492.25	491.53	490.36	490.22	490.80	0.863	0.771	0.515	0.500	0.563
72	MALAPRABHA(RENUKA)	633.83	629.16	631.35	626.34	626.99	0.972	0.477	0.682	0.266	0.309
73	KABINI(Sancherla Tank)	696.16	693.99	694.64	691.64	690.62	0.444	0.155	0.357	0.210	0.166
74	HEMAVATHY	890.63	887.22	888.09	876.93	874.22	0.927	0.650	0.8	0.203	0.130
75	HARANGI	871.42	866.44	865.89	856.08	861.49	0.220	0.105	0.108	0.038	0.077
76	SUPA	564.00	561.34	555.46	540.83	546.15	4.120	3.797	3.142	1.821	2.243
77	VANIVILAS SAGAR	652.28	634.74	636.21	637.15	633.76	0.802	0.054	0.079	0.097	0.037
78	ALMATTI	519.60	518.84	518.13	512.66	517.88	3.105	2.755	2.475	0.932	2.372
79	GERUSOPPA	55.00	49.05	47.89	49.87	48.66	0.130	0.097	0.091	0.101	0.095
<u>KERALA</u>											
80	KALLADA(PA RAPPAR)	115.82	114.39	115.50	109.70	100.42	0.507	0.460	0.479	0.357	0.197
81	IDAMALAYAR	169.00	164.59	165.48	151.65	154.30	1.018	0.890	0.916	0.554	0.616
82	IDUKKI	732.43	728.96	727.08	720.07	715.38	1.460	1.268	1.166	0.827	0.633
83	KAKKI	981.46	978.67	975.23	968.85	968.97	0.447	0.398	0.347	0.266	0.268
84	PERIYAR	867.41	861.29	868.09	864.95	859.19	0.173	0.060	0.173	0.128	0.013
85	MALAPMU-ZHA*	115.06			864.95	108.52	0.224			0.151	0.097
<u>TAMIL NADU</u>											
86	LOWER BHAWANI	278.89	269.25	273.12	268.12	261.83	0.792	0.29	0.46	0.251	0.089
87	METTUR(STANLEY)	240.79	228.48	235.13	227.63	216.91	2.647	1.18	1.89	1.099	0.367
88	VAIGAI	279.20	272.16	273.35	273.59	264.69	0.172	0.05	0.063	0.067	0.005
89	PARAMBIK-ULAM	556.26	554.74	555.80	550.55	543.36	0.380	0.348	0.37	0.264	0.133
90	ALIYAR	320.04	319.49	320.01	317.27	305.20	0.095	0.092	0.095	0.078	0.014
91	SHOLAYAR	1002.79	1002.51	1002.73	985.86	962.16	0.143	0.141	0.143	0.069	0.000

*CWC started monitoring the storage of the project from 2015 onwards.

**Annexure referred to Lok Sabha Unstarred Question No.1504 on
Safety of Dams for answer on 24.11.2016**

The State-wise breakup of the dams identified for rehabilitation, fund allocated to Project Implementing Agencies and the present status of the rehabilitation works

State/Implementing Agencies	No of DRIP dams	Total Project Cost(Rs. Crore)	Award of works (No. of Dams)	Value of awarded works (Rs. Crore)	Expenditure upto September 2016 (Rs. Crore)
Kerala (WRD & EB)	28	279.98	25	217.70	43.98
Orissa (WRD)	26	147.74	26	125.40	64.74
MadhyaPradesh (WRD)	29	314.54	22	113.50	90.53
Tamil Nadu (WRD & EB)	107	745.49	85	356.10	144.51
Karnataka (WRD)	27	276.75	18	355.20*	38.35
Jharkhand (DVC)	3	139.40	3	73.80	0.89
Uttarakhand (UJVNL)	5	64.10	2	46.10	20.39
Central Water Commission		132.00		90.00**	34.96
Total	225	2100.00	181	1377.8	438.35

* Karnataka has exceeded its original allocation by Rs. 78.45 crore by using unutilized allocation by other Implementing agencies as on date.

** CWC hired the Engineering and Management Consultant for DRIP

[WRD: Water Resources Department, EB: Electricity Board, DVC: Damodar Valley Corporation, UJVNL: Uttarakhand Jal Vidyut Nigam Ltd]