GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

STARRED QUESTION NO. *313

ANSWERED ON 10.08.2023

WATER LOSS IN RESERVOIRS

*313 SHRI KOMATI REDDY VENKAT REDDY SHRI MANNE SRINIVAS REDDY

Will the Minister of JAL SHAKTI be pleased to state:

(a) the details of the water losses in the reservoirs since 1947 onwards till date, State-wise and the reasons therefor;

(b) whether the Government is taking various measures to reduce water losses in reservoirs such as reducing the surface area of the reservoir, lining the bottom and sides of the reservoir with invincible materials and adopting water management methods that reduce the operating spillage and such other measures; and

(c) if so, the details thereof along with the details of the outcome and funds spent for the purpose?

ANSWER

THE MINISTER OF JAL SHAKTI

(SHRI GAJENDRA SINGH SHEKHAWAT)

(a) to (c) : A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) OF LOK SABHA STARRED QUESTION NO. *313 TO BE ANSWERED ON 10.08.2023 REGARDING "WATER LOSS IN RESERVOIRS".

(a) to (c) Water Resources Projects are planned, funded, executed and maintained by the State Governments themselves as per their own resources and priority. In order to supplement their efforts, Government of India provides technical and financial assistance to State Governments to encourage sustainable development and efficient management of water resources through various schemes and programmes.

As such, information related to water losses in various reservoirs of the country is available with the concerned dam owners. Water in a reservoir may be lost by surface evaporation, by seepage into the surrounding soil or rocks and by seepage through dam foundations.

Evaporation from reservoir surface is a well known phenomenon. As per the Central Water Commission (CWC) report on "Reassessment of Water Availability in India using Space Inputs -2019" average annual reservoir evaporation (30 years average) is 27,510 Million Cubic Meters (MCM). The basin wise average evaporation is given at **Annexure**. As per the report on "Evaporation Control in Reservoirs" 2006 published by the CWC, various factors affecting the evaporation from reservoir are surface area, area exposed to the atmosphere, temperature, vapour pressure difference, wind effect, atmospheric pressure and quality of water.

The common methods adopted for reducing evaporation from reservoirs are wind breakers, covering the water surface, reduction of exposed water surface, underground storage of water, integrated operation of reservoirs and treatment with chemical popularly called Water Evapo-Retardants.

Government of India is implementing the externally funded Dam Rehabilitation and Improvement Project (DRIP). During the DRIP Phase-I programme implemented during 2012 to 2021, 223 dams were rehabilitated to improve various safety concerns such as structural safety, operational safety and hydrological safety of the dams. To this effect, various remedial measures have been undertaken, specifically for addressing seepage issues at given dams. Grouting works carried out at 42 dams, joint treatment works carried out at 13 dams, application of geo- membrane done at 2 dams, upstream face treatment done at 37 dams. These measures have been effective and helped in addressing seepage issues, thereby reducing the water losses from the reservoirs.

After completion of DRIP Phase-I programme, Govt. of India is now implementing the DRIP Phase-II & III Scheme. The Scheme envisages the rehabilitation of 736 dams located in 19 States at cost of Rs. 10,211 crores. Under DRIP Phase-II & III Scheme, seepage reduction measures would be undertaken at few dams on need basis based on safety concerns of the given dam. The physical interventions such as upstream face treatment, joint treatment, grouting etc would be implemented to address the seepage issues to the possible extent, so as to contribute in reducing the loss of water from the given reservoirs.

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ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) to (c) OF LOK SABHA STARRED QUESTION NO. *313 TO BE ANSWERED ON 10.08.2023 "WATER LOSS IN RESERVOIRS"

Basin Wise Average Annual Reservoir Evaporation (30 Years Average)

Sl. No.	BASIN	Average Annual Reservoir Evaporation(MCM)
1	GODAVARI BASIN	4,410
2	KRISHNA BASIN	2,110
3	CAUVERY BASIN	650
4	SUBERNAREKHA BASIN	540
5	BRAHMANI-BAITARANI BASIN	930
6	MAHANADI BASIN	1,410
7	PENNAR BASIN	140
8	EFR BETWEEN MAHANADI AND PENNAR BASIN	1,620
9	EFR BETWEEN PENNAR AND KANYAKUMARI BASIN	370
10	MINOR RIVERS DRAINING INTO MYANMAR(BURMA) AND BANGLADESH	400
11	INDUS (HARIKE SUB-BASIN ONLY)	480
12	UPPER GANGA SUB-BASIN	760
13	LOWER GANGA SUB-BASIN	6,030
14	YAMUNA SUB-BASIN	1,870
15	BRAHMAPUTRA BASIN	0
16	BARAK & OTHERS BASIN	810
17	MAHI BASIN	750
18	SABARMATI BASIN	410
19	NARMADA BASIN	480
20	TAPI BASIN (UPTO GHALA)	780
21	WFR FROM TAPI TO TADRI	1,290
22	WFR FROM TADRI TO KANYAKUMARI BASIN	1,270
23	WFR OF KUTCH AND SAURASHTRA INCLUDING LUNI BASIN	NA
Total		**27,510 MCM**

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