GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO. 3368

ANSWERED ON 20.03.2025

SILT ACCUMULATION IN RIVERS AND DAMS

3368. SHRI SHRIRANG APPA CHANDU BARNE
SHRI BAJRANG MANOHAR SONWANE
SMT. BHARTI PARDHI
SHRI KANWAR SINGH TANWAR

Will the Minister of **JAL SHAKTI** be pleased to state:

(a) whether a huge quantum of silt is accumulated in the rivers and dams across the country including Madhya Pradesh which contributes to increase flood risks in the rivers and decreasing the water-holding capacity of the dams/reservoirs;

(b) if so, the extent to which the huge amount of silt deposited in rivers increases the risk of floods;

(c) whether the Government has conducted any study to find out the contribution and impact of excess silt on various rivers of the country, particularly on Ganga river, if so, the details thereof, river-wise;

(d) the steps taken/being taken by the Government for removing the accumulated silt from the rivers and dams/reservoirs along with the manner in which these steps have been effective in removing silt;

(e) the details of the economic consequences of silt buildup in navigable waterways; and

(f) the action taken/being taken by the Government for the effective implementation of regulations and policies in controlling silt pollution?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY**)**

(a) to (f) Erosion, movement and deposition of sediment in a river are natural regulating functions of a river. Rivers tend to maintain a balance between the silt load carried and silt load deposited, maintaining a river regime. Dredging/desilting of rivers is not considered a technically viable solution for flood control as it can marginally minimize the magnitude of floods and is effective only for a short period. Selective dredging in specific reaches such as tidal rivers, confluence points with narrow constrictions, etc. sometimes may have to be undertaken based upon local site conditions; however, the same should be backed by proper scientific study.

Sedimentation is a natural phenomenon which causes accumulation of Silt in Reservoirs and reduces the storage capacity of the reservoirs. Central Water Commission (CWC) has prepared

Compendium on Sedimentation of Reservoirs in 2024 on the basis of data of 548 reservoirs. The compendium with 2 volumes is available on CWC website at https://cwc.gov.in/sites/default/files/vol-i-compendium-2024.pdf and https://cwc.gov.in/sites/default/files/vol-ii-compendium-2024.pdf. Of these 548 reservoirs, data of sedimentation studies of 21 reservoirs of Madhya Pradesh and 35 reservoirs of Indo-Gangetic plains is available in Volume II of the compendium.

National Mission for Clean Ganga under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti has prepared guidelines in 2017 for de-siltation of works on river Ganga from Bhimgauda(Uttarakhand) to Farakka (West Bengal).

Government of India has implemented the World Bank funded Dam Rehabilitation and Improvement Project (DRIP), Phase-I, during 2012-2021. The scheme was having need-based provisions of de-silting of reservoirs of few selected reservoirs. The sedimentation management were studied for Kundah Palam dam, Papanasam Weir, Pillur dam (Tamil Nadu) and Maneri Bhali Stage-I (Uttarakhand). Also, catchment area treatment for Kundah Palam Catchment was carried out. The Government of Uttarakhand has carried out small scale de-siltation of Asan Barrage, wherein quantity of silt removed was 78,000 cubic meters.

The DRIP Phase II and Phase III also have need based provision for sediment management interventions including de-siltation of reservoirs, catchment area treatment, among others. This Scheme has 19 States on board, budget outlay of Rs. 10,211 Crore and rehabilitation provision for 736 dams. The new Scheme envisages Catchment Area Treatment of four reservoirs of Tamil Nadu namely Vaigai, Nanganjiyar, Parappalaru, Kodaganar dam; 2 reservoirs of Bhakra Beas Management Board (BBMB) namely Bhakra Dam and Pong Dam, and de-silitation of two dams of Tamil Nadu Generation and Distribution Corporation Limited namely Papanasam and Kundah Palam.

CWC has also published “Handbook for Assessing and Managing Reservoir Sedimentation” in year 2019. Also, other Guidelines titled “Operational Procedures for Assessing and Managing Environmental Impacts in Existing Dam Projects” has been published by CWC in year 2020. These Guidelines cover various rehabilitation activities, including de-silting of reservoirs and give the way forward to address the environment and social safeguards in order to facilitate dam owners.

Under National Hydrology Project (NHP), comprehensive bathymetric surveys have been conducted to address the critical issue of sedimentation in reservoirs, which threatens water security, hydropower generation, and flood management. The project analyzed 462 reservoirs across 22 states, accounting for a gross storage capacity of 156.815 BCM. As of June 2024, surveys for 334 reservoirs (72% of the total) have been completed, with findings revealing significant sedimentation impacts.

A National Framework for Sediment Management (NFSM) has been notified in January, 2023 by Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti. It emphasis on reducing silt generation rather than silt removal and promotes technological innovations &

best practices. Further, it will provide overall guidance to States/UTs on various aspects of sediment management, handling issues of sediment management in integrated & scientific manner and use of different approaches of sediment management in a river basin. The same is available at https://jalshakti-dowr.gov.in/document/policy-on-sediment-management/

Siltation affects navigability of the channel. Inland Waterways Authority of India (IWAI) under Ministry of Ports, Shipping & Waterways is mandated with development and maintenance of national waterways for the purposes of shipping and navigation. IWAI carries out river training and maintenance dredging in the national waterways for maintaining a depth of 2 to 3 m with a bottom width of 35 to 45 m for safe shipping and navigation. The silt deposits in navigation channels affects the cost of river training and maintenance dredging in the navigation channels.

The Ministry of Environment, Forest and Climate Change has issued Sustainable Sand Mining Management Guidelines 2016. The main objective of the Guidelines is to ensure sustainable sand mining and environment friendly management practices in order to restore and maintain ecology of river and other sand sources.

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