



The Big Picture: Floods and Dam Management

Dams are one of the vital elements for the growth of the country's economy. **In India, over the years, dams have played an important role in fostering rapid and sustained agricultural and rural growth.** Substantial investment has been done in building dams and related infrastructure.

Dams are built to control floods; however, they are also responsible for the increasing frequency of floods as well. In the routine, dams regulate the flow of water, provide water for electricity generation, irrigation and other needs. However, during extreme meteorological conditions, dams amplify the situation.

India has more than 5000 large dams. 75 percent of these are more than 25 years old and about 164 dams are more than 100 years old. **A poorly maintained, unsafe dam can be a hazard to both human life and the environment.** This has been proved by several dam failures in the past. In June 2018 the central government had approved the proposal for introduction of the Dam Safety Bill, 2018 which aims to develop uniform countrywide guidelines for ensuring the safety of dams.

2018 Kerala Floods

In August 2018 following torrential rainfall, Kerala witnessed its worst floods since 1924. The dams were stored to the brim. Too much water was stored and consequently, the gates had to be opened. At least 35 of 50 large dams were open for releasing water on to the already flooded areas downstream. With time, silt deposition had considerably reduced the holding capacity of the dams and the nearby rivers, leading to flooding of embankments and levees. Encroachment has decreased dam's built-in area (further reducing the capacity), sand mining and rampant felling of trees and clearing of forest in the Western Ghats have played a factor.

Dam Safety Bill, 2018

- The Union Cabinet approved the proposal for introduction of Dam Safety Bill, 2018 in the Parliament.
- The objective of this Bill is to help develop a uniform, countrywide guidelines for ensuring the safety of dams.
- **The Bill provides for:**
 - Proper surveillance, inspection, operation and maintenance of all specified dams in the country to ensure their safe functioning.
 - Constitution of a National Committee on Dam Safety which shall evolve dam safety policies and recommend necessary regulations.
 - Establishment of National Dam Safety Authority as a regulatory body which shall discharge functions to implement the policy, guidelines, and standards for dam safety in the country.
 - Constitution of a State Committee on Dam Safety by State Government.
- All the institutions that are named in the dam safety bill are already functioning. The Dam Safety Bill will only give these institutions legal backing.
- This bill will make sure that every state government follows a uniform policy laid down by it.

- In the Dam Safety Bill, the provisions for the robust functioning of the dam have been laid. As of now, some of the dams have an operational manual. However, most are operating dams from experience. This bill will make it legally binding for all the dams to have a codified manual for the operation as per their need.

Way Forward

- **State governments should follow the dam safety manual with precision.** Especially, where human settlements are scattered all around, the building of dams has to be regulated as per the guidelines.
- **Creation of buffer zone** has to be done to protect land near dams from encroachment.
- However, the growth of population will lead to encroachment, and it would be physically impossible to shift people during calamity. Proper dissemination of information has to be done in the surrounding areas on a real-time basis and regular flushing of water should be carried downstream to keep the river beds dry. **Hence, dam safety and proper village, town and city planning have to be integrated.**
- **Ensuring “dam safety” should be a continuous exercise.** The present catastrophe is more related to, how the dam should be operated when there is heavy rainfall and the water level has reached a critical level.

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