



INDIA: FLOOD MANAGEMENT IN DAMODAR RIVER BASIN

- 1. Location of the study:** India
- 2. Author(s):** Suresh Chandra¹
- 3. Brief description of flood management practice**

The Damodar basin is entirely situated in the two states of Jharkhand and West Bengal of India. The basin experiences seasonal rain due to the South-Western Monsoon every year and floods occur depending on the intensity of the storms. The catchment area is about 22,000 km², of which about 19,000 km² are in uplands and 3,000 km² of very fertile irrigated plains. The Damodar is a shallow, wide, seasonal and flashy river; the destructions it causes have earned it the name of “the river of sorrow”, since it can produce much distress and loss in both states.

The challenge of taming the Damodar engaged attention already since the early 18th Century, when embankments were built for flood protection purposes. It was the disaster caused by a flood in 1943 which led to the preparation of a project primarily for the control of floods and secondarily for the development of water resources. This project was approved in 1947, to be implemented through the Damodar Valley Corporation (DVC), which came into existence in 1948. The multiple objective of the Damodar Valley Scheme is achieved mainly through a set of reservoirs at five sites on Damodar and its tributaries. Besides flood protection, the whole system was expected to provide committed annual irrigation of 364,000 ha besides water for industrial and domestic uses.

The integrated operation of all structures is done by the Damodar Valley Reservoir Regulation Committee (DVRRC) headed by Member (River Management), Central Water Commission (CWC), with representatives each from DVC and the states of Jharkhand and West Bengal. The committee is assisted by the CWC, which maintains a flood forecasting network system and provides inflow forecasts.

In the absence of frequent floods of higher intensities as a result of the scheme mentioned above, the lower Damodar valley gained great value and importance due to a false sense of security and there has been extensive encroachment into the flood plains. The Government of West Bengal realised the importance of the productive value of the flood plains of Damodar, given the density of population and high level of investment on flood plains, and that such protection can only be imparted at great expenses and at the cost of denying the productive use of flood prone land. The approach, therefore, has been to “bear the losses” at the time of flood disaster while enjoying the benefits of the land during the rest of the time.

As a result of one of the highest flood events in recent times in India in 1978, the National Commission on Floods in 1980 put forth 207 recommendations as a comprehensive measure of flood management in the country. In 1999, equally important were the recommendations by the National Commission for Integrated Water Resources Development and Management Plan regarding flood management, through a shift of strategy towards efficient management of flood plains, flood proofing and forecasting, and flood insurance. Finally, the National Water Policy of India formulated in 1987 and then revised in 2002 lays down policies with regard to water resources development planning and management, to be achieved through an integrated and multi-disciplinary approach to the planning, formulation, clearance and implementation of projects, including catchment area treatment, environmental and ecological aspects, the rehabilitation of affected people and command area development.

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4. Key issues

From the policy changes it was realized that structural measures alone should not be the strategy for tackling the problem of floods, but rather a mix of structural and non-structural measures, with the latter to be the back bone of the programme for flood management.

5. Relevance to the concept of IFM

The study covers the following aspects of IFM to varying extents:

Water cycle as a whole

Aspect 4 - Managing the whole water cycle (flood/drought management plans (marginally))

Aspect 6 - Effective use of floodwater by maximizing positive aspects of floods

Integration of land and water management

Aspect 2 - Land and water management

Aspect 3 - Laws and regulations for flood and water management
Integrated river basin management approach to flood

Participatory approach

Aspect 7 - Community-based approach (marginally)

Aspect 9 - Effective linkage between existing institutions

Integrated hazards impact mitigation

Early warnings and forecasts

6. Comments

- (i) Potential strong points of the case study
 - A series of laws and regulations for the Water sector
 - The establishment and functioning of the DVC
 - Recent recognition on the need for increased emphasis on non-structural measures for the management of floods
- (ii) Potential for practices mentioned to be transferred/applied to other regions with geophysical and socio-economic characteristics)

Models like DVC might be replicated and appropriate River Basin Organisations established for the integrated planning, development and management of other river basins, taking into account the needs of different uses of water with a multi-disciplinary approach.