Dams and Flood Control

What is the issue?

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- The recent Kerala floods have highlighted the dangers of excess water accumulation in dams.
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- It is essential, in this context, to understand the role of dams in flood control.
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Why are dams dangerous?

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- Dams store millions of tonnes of fresh water in large reservoirs.
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- However, this is only after submerging prime forests, villages, farms and livelihoods.
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- The 4,700 large dams built since 1947 have cumulatively displaced 4.4 million people.
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- This makes dams the single largest cause for displacement post-Partition.
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- These dams take decades to come up, but only a fraction of their output is for the household sector.
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- Over 85% of them are used in agriculture for producing cash crops such as sugarcane.
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- Dams have displaced the poorest of India’s people in favour of richer farmers and urban residents.
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- Notably, this often comes with little or no compensation.
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- Worryingly, dams are far more hazardous than any other infrastructure project, except nuclear plants.

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- Moreover, many dams in India are over a century old, and so have major defects.
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- There is also a case for reservoir-induced seismicity (RIS) from the weight of the reservoir.
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- This has resulted in earthquakes in various parts of the country.
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How should dams be managed?

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- The water level of a reservoir should be kept below a certain level before the onset of the monsoon season.
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- This is an internationally accepted practice.
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- This ensures that there is enough space to store the excess rainwater when the monsoon rains come.
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- This also facilitates releasing water in a regulated manner.
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- It thus prevents floods downstream when there is heavy inflow to the dams.
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What is the concern?

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- The roles of dams in irrigation and power generation are acknowledged.
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- However, its role in flood control has always been underestimated.
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- It is unfortunate that in both irrigation and hydel projects, flood control is completely ignored.
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- Authorities always look to store the maximum amount of water in reservoirs

during the monsoon season.
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- It is then used for irrigation and generation of electricity during the summer months.
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- Despite the extra quantity of electricity produced and area of land irrigated, excess storage is risky.
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- It leads to loss of human lives, infrastructure and agricultural land, in times of heavy rains as in Kerala.
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- The estimated loss to Kerala runs into thousands of crores and it will take years to rebuild the state.
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What should be done?

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- **Dams** - The meteorological department can predict rains or cyclones only a few days in advance.
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- So keeping space in reservoirs is must, whether or not there are heavy rains.
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- It is essential that at least 30% of the storage capacity of dams is kept free before the monsoon.
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- This is crucial to ensure that the flood control purpose of dams is met.
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- This allows discharge of water as well as increase of storage slowly as the monsoon progresses.
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- There is also a task of critically reviewing every dam in the country.
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- Decommissioning those that are at end-of-life, stopping building new ones and establishing sound safety protocols are essential.
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- **Policies** - It is high time that government formulate water management policies for reservoirs.
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- This should be in such a manner that dams are used to control floods, and not cause them.
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- There is also a need to act on decentralised alternatives involving water recycling and reuse.
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- **Electricity** - The over-dependence on hydel projects to produce electricity is another driving factor.
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- So enhancing non-conventional sources for electricity generation is important in this context.
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- **Authority** - Dam and water management is vested with the Public Works Department, Electricity Board, and Irrigation Department.
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- But even in normal conditions there are contradictory opinions among these.
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- This poses implementation hurdles to the decisions taken.
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- So, the State Dam Security Authority, if competent, should be entrusted with the task of water management in reservoirs.
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- It should also be empowered to take decisions in emergency situations.
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Source: The Hindu

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