Reasons behind Kerala Flood - Post Analysis

Why in news?

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According to official reports mismanagement of dams was the primary reason for the kerala floods.

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What is the role of dams in water management?

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- One of the major functions of dams is flood protection to attenuate the flow of water and its impact downstream.
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- The golden rule followed in dam management is to maintain a flood cushion (buffer) in case of unexpectedly high rainfall.
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What is the brief structure of Kerala dams?

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- Kerala has 39 major dams, their maintenance is shared between the Kerala State Electricity Board (KSEB) and the Water Resources Department.
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- The Periyar is the longest river in Kerala and has the highest discharge potential.
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- The major dams across this river that are maintained by the KSEB are Idukki, Lower Periyar, and Madupetty.
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- The water from Lower Periyar, Madupetty and Mullaperiyar drains into the Idukki reservoir consisting of the Idukki dam and the Cheruthoni dam.
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- The water from the Idukki reservoir and Idamalayar drains directly into the Bhoothathankettu dam, which is the lowermost in the Periyar system, just 15 km from Kothamangalam town.
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What are the primary reasons of Kerala floods?

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- According to India Meteorological Department’s study, the rainfall in August was only the sixth highest in the past 143 years (1875-2017) in Kerala.
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- All dams in kerala reached their full reservoir level by July-end, and were thus incapable of containing the water flow from torrential rainfall in August.
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- This forced the State government to open the gates of 34 major dams, thereby submerging all the major towns downstream.
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- Admittedly, the change in topography due to human interventions and climate change have contributed to the sporadic and excess rainfall.
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- The proliferation in illegal stone-quarrying activity has been a major reason for widespread landslides.
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- The decision of the incumbent government to reduce the boundary of a quarry from residential buildings to 50 metres has facilitated the mushrooming of the stone quarrying mafia.
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What are the official findings on flood?

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- According to the data released by the State Disaster Management Authority, 85,300 litres of water was released every second from Kakki-Anathode dam, and 47,000 litres from Pampa dam at 4 p.m. on August 14.
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- The shutters of both dams were raised at night. By 10 p.m., 4.68 lakh

litres of water started gushing out of both dams.
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- The State government also failed miserably in coordinating with the Tamil Nadu government on the release of water from Upper Sholayar despite the State heading the joint water regulatory board.
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- Data posted by the KSEB reveals that the water released into the Periyar river basin from the Idukki and Idamalayar dams surged from 46.26 mcm/day on August 14 to 200 mcm/day the next day. This caused the towns downstream to be totally submerged.
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- An analysis of spill from these dams reaffirms the gross mismanagement in the operation of dams.
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What measures needs to be considered in this regard?

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- The operation and maintenance of dams is governed by the guidelines of the Central Water Commission and water management protocols.
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- The safety, precautions and evacuation measures to be followed while declaring different alerts (blue, orange, red) are clearly mentioned in these guidelines.
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- The guidelines state that the reservoir control schedule, release procedure and gate operation procedure have to be done only after assessing the potential impact of the procedures.
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- The State government and the KSEB opened 34 of the 39 major dams simultaneously, controlled release from these dams would have reduced the gravity of the calamity.
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- Apart from that the disaster management system needs to be revamped by roping in experts from different areas.
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- The State government must also order a judicial inquiry into the gross mismanagement of dams in the State.
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Source: The Hindu

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