Kerala Floods: What Led to Deluge That Reminded People of The Great Flood of 1999

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People being rescued during the Kerala floods.

New Delhi: Kerala is fighting to stay afloat in what is seen as the century's worst flood in the state. At least 167 people are dead and about two crores affected by the deluge

that destroyed more than Rs 8,000 cr worth property since August 8.

All 14 districts of the state have been placed under red alert after the rise in flood waters in Periyar river due to the rains and opening of the shutters of all major dams.

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The rail and road connectivity has been severely hit. There have been more than 20 instances of roads being washed away due to severe flooding; railway lines and more than a dozen stations are submerged; Kochi airport's runway remains inundated.

But what led to the deluge that reminded people of "the Great Flood of 1999"?

Rainfall Pattern

According to the Indian Meteorological Department data, Kerala received 2,087.67 mm of rain from June 1 to August 15—a departure of nearly 30 per cent from the 3,368 mm water in 1924.

An analysis of the rainfall data from 1901 to 2016 by weather scientists suggest that the southwest monsoon has 'dried', that the monsoon is on a declining trend. After rising in 2013, the rainfall in state reduced in 2014 and hit a low in 2015 before slowly rising in 2016, 2017 and 2018, IMD data read.

Then why did Kerala Chief Minister Pinarayi remark on August 14 that "this is the worst monsoon disaster since 1924"?

Well, there is another trend, which suggests a rising rainfall quantity in the state in the past few years. There is low frequency but higher intensity, meaning the rainfall occurs for a short duration, however, the amount of precipitation is higher.

Poor Policy Decisions

Most of the regions impacted by the floods were classified as ecologically-sensitive zones (ESZs) by the Western Ghats Ecology Expert Panel (WGEEP). The report was made public by a team headed by Madhav Gadgil, ecologist and founder of the Centre for Ecological Sciences at the Indian Institute of Science, Bengaluru.

According to environmentalists who were part of the research, the committee's recommendations were strong enough to protect the sensitive Western Ghat region. The committee had suggested to classify 140,000 kilometres of the Western Ghats in the three zones as per the requirement of environmental protection in the areas. In many areas, the committee recommended restrictions on mining and quarrying, use of land for non-forest purposes and construction of high rise buildings.

However, the report, which was submitted to the Kerala government in 2011, was subsequently rejected and none of its recommendations were adapted by the government.

Many environmentalists have also pointed fingers at the extensive quarrying as the major reasons for the recent calamity, which has resulted in huge landslides — majority of the human casualties have been caused by these landslides.

A recent study conducted by scientists TV Sajeev and CJ Alex of the Kerala Forest Research Institute found that there were 5,924 big, medium and small quarries in Kerala.

Earlier, the Kerala High Court has said that quarrying in lands included in reserve forest but assigned for dwelling or cultivation should be banned altogether or strictly regulated.

"Quarrying activities should not be encouraged as it will cause permanent damage to the area," the court had said.

Decrease In Forest Cover

A study by Indian Institute of Science (IISc), Bengaluru, found out that between 1973

and 2016, Kerala lost 906,440 hectares (9064.4 sq.km) of forest land. As the main reason for floods in Kerala remains the unusual rainfall pattern, this loss in forest cover, along with massive urbanisation may have led to several undesirable conditions, affecting the rainfall pattern. This loss of forest cover, many ecologists say, resulted in flash floods in past as well.

The effects of this were witnessed in Idukki and Wayanad, the two districts that bore the heavy brunt of the flood fury. Both the districts have the highest forest cover in the state. However, between 2011 and 2016 Idukki lost 20.13 per cent of its green cover, while Wayanad reported a loss of 11 per cent.

The other negative effect of decreasing forest cover in Kerala is the soil erosion it causes, which later settles in the dam reservoirs. The eroded topsoil can facilitate silting in dam reservoirs which could count towards an average reduction of 22% in the state's dam storage levels, the IISc study said.

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