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Assam set for 30% to 40% increase in frequency of extreme rainfall events: RMSI data

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Assam has been reeling under heavy floods since may 2022. (Image credit: Rohan Reddy/Unsplash)

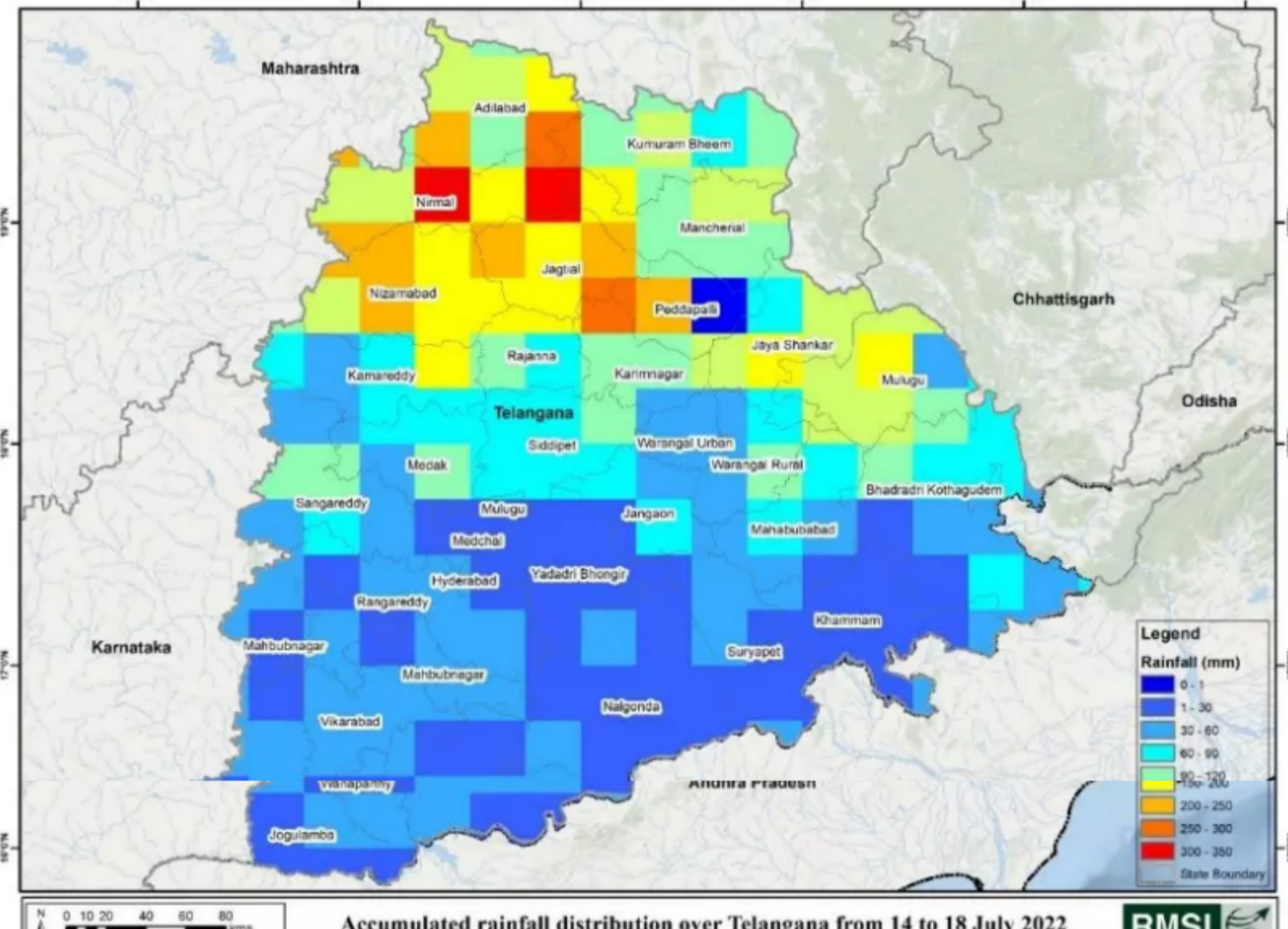
Apart from the catastrophic impact on people, infrastructure has been affected as well

- The analyses was conducted using RMSI's proprietary flood model.
- Flooding in the entire Godavari catchment area affected both Telangana and Andhra Pradesh.
- The flooding caused a number of landslides in Assam.

RMSI, a Noida-based consultancy company that has previously identified the **outdated drainage system in Mumbai** as the cause of regular flooding, as well as projected the **impact of global sea level rise on coastal cities**, has come out with reports analysing the impact of recent floods in **Telangana** and **Assam**. The analyses was conducted using RMSI's proprietary flood model. The entire catchment area of the Godavari is submerged, leading to consequences on downstream Andhra Pradesh as well. In both Telangana and Andhra Pradesh, several villages, highways, bridges, roads, and railway tracks were submerged. Assam has been reeling under heavy floods since May 2022, with 55 lakh population affected in 33 districts. The flooding has been linked to 192 deaths in Assam. This year, the flooding began even before the onset of South West Monsoon. Climate change has been found to impact the intensity of flooding. Below is the detailed analysis for each state.

Telangana

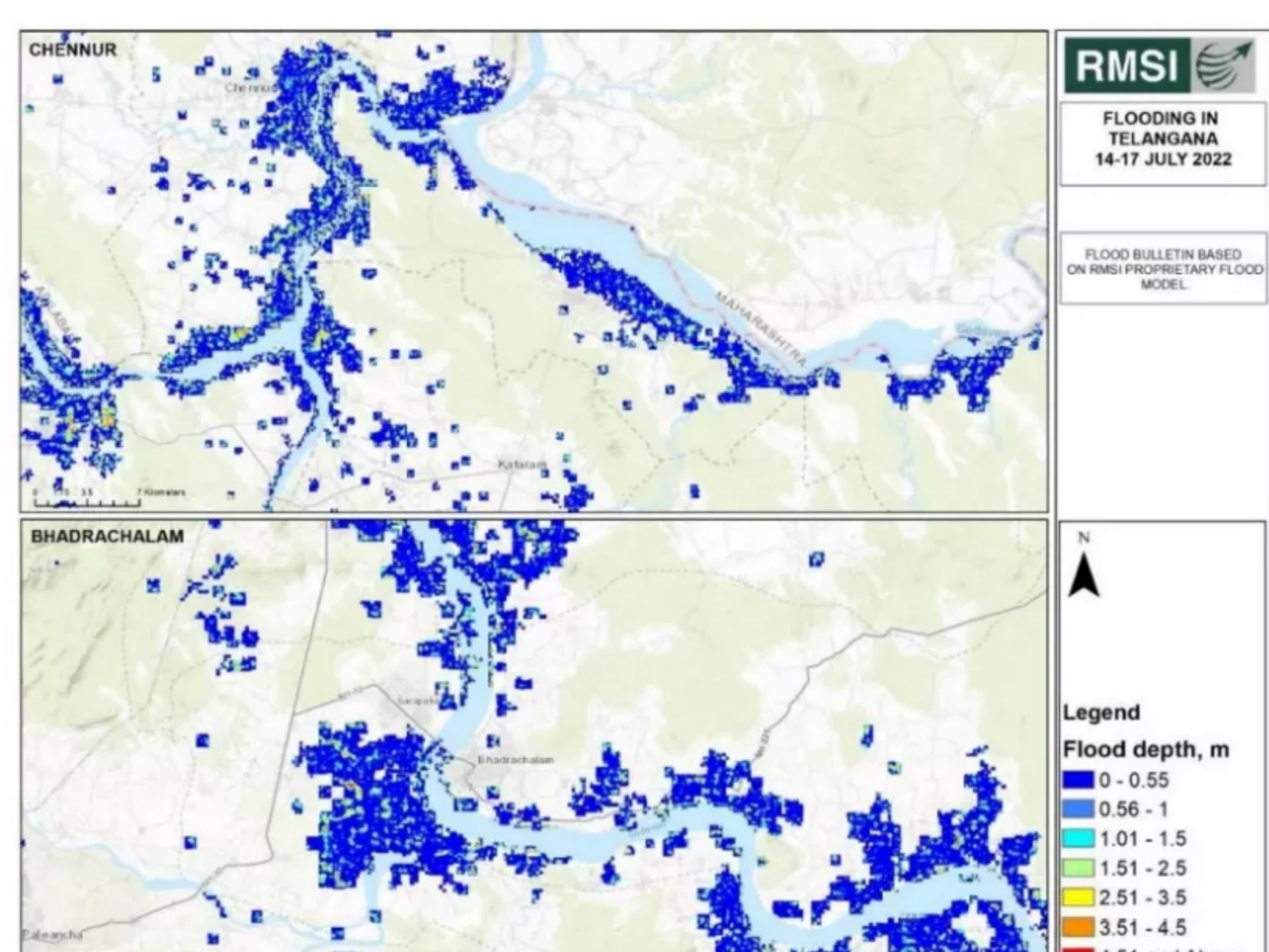
Continuous rainfall resulted in heavy runoff, feeding more water into the rivers and reservoirs of both Telangana and Andhra Pradesh. The disaster management agencies and police enforced restrictions in low-lying areas as a precautionary measure. For example, the Bhadrachalam bridge on Godavari river was closed. The Godavari experienced such high flood levels after 32 years, with water levels exceeding 71 feet. Helicopters were kept on standby for any rescue and relief efforts necessary.



Accumulated rainfall distribution in Telangana between July 14 and 18. (Image credit: RMSI)

The unprecedented rainfall impacted the residential, commercial, industrial sectors as well as transportation and utilities. A total of 143 pin codes in 15 districts of Telangana were affected by the floods. Around 85,000 buildings and 325 telecom towers were affected across Telangana. 84,000 kilometres of roads were inundated, with seven per cent impact on National highways and 11 per cent impact on State highways. This was followed by 22 per cent of major district roads, and 59 per cent of the remainder being minor roads. 282 kilometres of bridges, 1,755 kilometres of railways, and 12,232 kilometres of power transmission lines were affected.

Fifteen districts in Telangana were impacted by rainfall related flooding, with Khammam seeing 9.8 per cent of its area affected, followed by Suryapet with nine per cent, Peddapalli with 9.74 per cent, Jaya Shankar Bhupalpally with 7.86 per cent and Bhadradi Kothagudem with 5.92 per cent. Bhadrachalam in Kothagudem and Chennur in Mancherial experienced severe flooding around the river banks. In Kothagudem district, 35 kilometres of railways, 12 kilometres of the bridge network, 713 kilometres of transmission lines and 4,060 kilometres of roads were affected. Mancherial district also saw a widespread impact with around 1,011 kilometres of roads, 76 kilometres of transmission lines, 47 kilometres of the railway network and 4 kilometres of the bridge network being affected. Some places in Bhadrachalam saw flooding in excess of 4.5 metres. In Chennur, the estimated flood height ranged between 3.5 and 4.5 metres.

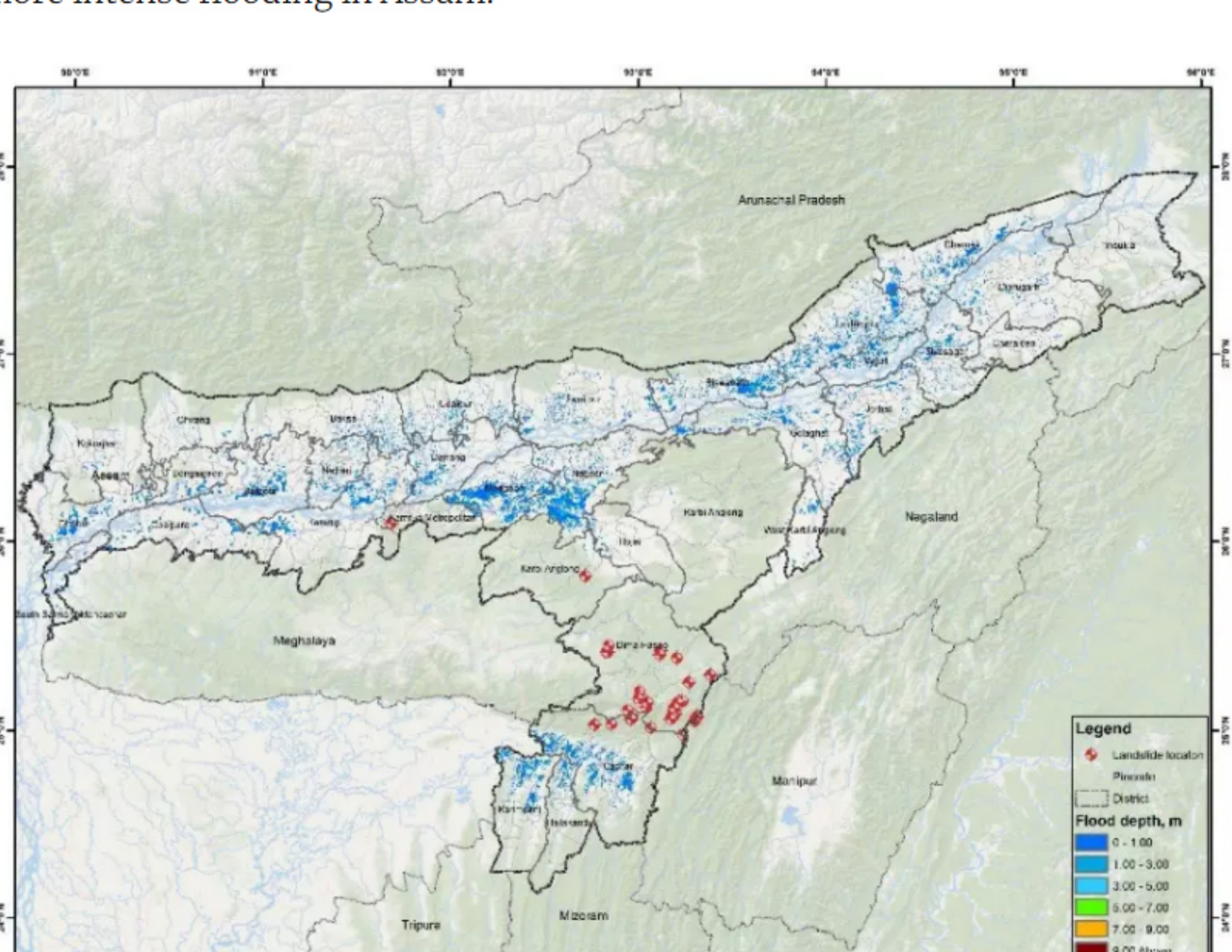


Flood map for Bhadrachalam and Chennur districts between July 14 and 17. (Image credit: RMSI)

Assam

Two perennial rivers feed Assam, the Brahmaputra in the North and Barak in the South. Brahmaputra originates in China while Barak originates in Manipur. Glacier runoffs feed Brahmaputra, which has high levels of sediments when it enters Assam from Arunachal Pradesh. In the low-lying regions of Assam, the river slows down in velocity, with the material collected from the hilly regions of Arunachal Pradesh getting deposited in the floodplains of Assam. The sedimentation reduces the water carrying capacity of the river, resulting in the water overflowing in the narrow valleys of Assam, with sudden rainfall leading to floods. Heavy rains also cause the Barak river to overflow into and flood the Barak valley. An increase in sedimentation has resulted in the expansion of the size of the rivers, as well as the permanent inundation of agricultural land and villages.

Between June and September every year, both of these rivers along with more than 50 tributaries experience flooding during heavy rainfall. The flooding is projected to get worse in the future. With a rise in global temperature between 1.5°C and 2.2°C, the frequency of extreme rainfall events in Assam is estimated to increase between 30 and 40 per cent. Climate change can also accelerate the melting of the Chemayungdung Glacier that feeds the Brahmaputra, leading to more intense flooding in Assam.



Flooding in Assam. (Image credit: RMSI)

According to the National Commission on Floods, 39.58 per cent of the total land area of Assam is prone to flooding. The average area affected by floods in Assam every year is 9.31 lakh hectares, with a loss of about Rs 200 crores. This year, 1.15 lakh hectares of crop area has been impacted, significantly affecting farmers. 14 districts continue to be impacted by the floods, although they are receding. The flood depth was around 0.3 metres in most places, with the Barak valley experiencing floods up to 1.2 metres. 31 districts and 2,300 villages were impacted by the floods. Flooding has also affected the wildlife of the state, with over 18 percent of the Kaziranga National Park being inundated.

Senior vice president of sustainability at RMSI, Pushpendra Johari says, "Intense rainfall over the last week led to floods and water-logging, creating havoc in 15 districts of Telangana. Around 84,000 of the road network, 12,232 of electricity Transmission Tower, 1,755 km of Railways Network, and 325 Telecommunication Towers could potentially be impacted. RMSI analysis indicates that the impact on infrastructure will drive the economic loss, with about 80,500 buildings impacted by the floods."

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