

The impact of cumulative rainfall on the destructive landslide in Wayanad, India, on 30 July 2024

Kavitha Devi Ramkumar* and J. Srinivasan

Divecha Centre for Climate Change, Indian Institute of Science, Bengaluru 560 012, India

Heavy rainfall over more than two weeks, followed immediately by an exceptionally heavy downpour of over 200 mm in a day, caused a catastrophic landslide on 30 July 2024 in the Vythiri Taluk of Wayanad district in Kerala, India. The use of satellite rainfall data has been recommended for hilly regions. Analysis of satellite rainfall data shows that daily rainfall exceeding 150 mm typically does not trigger a major landslide unless it is preceded by cumulative rainfall exceeding 1,500 mm. This suggests that an accurate forecast of heavy rainfall after a prolonged period of continuous rain in Wayanad is essential.

Keywords: Debris flow, landslide, rainfall intensity, rain gauge, satellite data