Deadly coastal landslides and increased risk due to severe climatic events

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Deadly landslides are becoming more frequent and disruptive with increasingly severe weather events associated with a changing climate. These changes are putting coastal slopes under stress due to extreme climatic events that contribute to their instability by two processes: due to intense rainfall and also to important storm waves that rise to unusual heights in coastal areas affected by atmospheric depressions. This study was conducted in 83 coastal locations to investigate the climate-induced extreme rainfall, population density and detect the role of severity of hurricane/cyclone where deadly landslides reported worldwide since 1995 to 2018. The global landslide database was used to locate and analyze sea cliffs already under stress where deadly landslides are reported. The analysis was conducted using R (ver 3.5.1) and ArcGIS (ver 10.4.1) software. Population distribution, the severity of hurricanes/ cyclones and extreme rainfall proved the strongest predictor of deadly landslides in coastal areas particularly in the Caribbean and Southeast Asian countries. This research will help improve resilience and forecast future erosion and hot spots for cliff retreat and will contribute not only to our understanding of landslide processes associated with extreme weather events but will also enlighten decision-makers and help them manage the coastal changes in the near future.