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## Small island developing states (SIDS) in the Zone Tropical and Plate Boundary Vulnerabilities risk multiple hazards: Jamaican case study

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Tropical zone cities in tropics near active plate boundaries are undergoing urbanization at a rapid pace in hazardous/environmentally sensitive areas. Tropical zones and plate boundary countries landforms profoundly influence related geologic history and tectonic structure. Jamaica case study review SIDS in the tropical zone and plate boundary vulnerability of multi-hazard risk risk evaluation to recurrent natural disasters: geophysical, meteorological, hydrological, climatological and biological.

Jamaica SIDS tectonic location in the seismically active plate boundary zone, geographic location tropics in the path of storms and hurricanes which provide periodic heavy and intense orographic rainfall leading to water saturation of slope materials. Although landscapes are a major geomorphic process in Jamaica, being primarily controlled by the underlying geology and active tectonics. A majority of slopes are over 30° and are underlain by intensely jointed, faulted and weathered bedrock. Neotectonic uplift has enhanced chemical weathering and mass movements. The triggering mechanisms landslides include rainfall associated with tropical storms and earthquakes. Jamaica the mountainous landscape steep valley slopes are covered with colluvium, often fault controlled and deforestation as a result of large-scale human interference of slopes to facilitate agriculture, road building and housing needs. Slope movement in this area occur both in bedrock (deep landslides) and also in the colluvium that overlies deeply altered bedrock (shallow landslides). The landslide hazard is to a large extent a consequence of changing landuse. The capital city of Jamaica, Kingston Metropolitan Area (KMA) is located on the Holocene gravel fan of Liguanea at the base of the faulted mountain front of the Port Royal Mountains.

This paper reviews the status of Jamaica multiple natural hazards and risk, active processes-tropic-plate boundary zone, geomorphologic neotectonic landforms, geological history, tectonic and structural framework. Hazard mitigation understanding and application of the knowledge of the Jamaica island's geology and tectonic structure, geomorphology, Quaternary environments, hydrology, geotechnical characters of rocks and soils in planning land use and civil engineering design. Most of the baseline data have been generated by the local earth science and engineering communities. Priority disaster risk reduction (Sendai Framework Disaster Risk Reduction, 2015-2030) measures understanding natural hazards and disasters, resilience, preparedness and, in



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