

Vulnerability of Commonwealth Caribbean Islands Economies to Large Earthquakes: A Trinidad and Tobago Case Study

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Abstract

ECLAC has reported that the economies of most Commonwealth Caribbean islands have tripled to quadrupled in size since independence. There has also been commensurate growth in human and physical development as indicated by macro-economic indices such as the Human Development Index and Gross Capital Formation. A significant proportion of the accumulated wealth is invested in buildings and infrastructure that are susceptible to strong ground motion, the region being located along an active plate boundary. Many of the islands have been delinquent in prescribing suitable measures to manage vulnerability of the exposed assets and human lives to large earthquakes that are part of the regional landscape.

In the case of Trinidad and Tobago, Gross Capital Formation accumulation since 1980 is well in excess of one trillion Trinidad and Tobago dollars. Recent studies have indicated that this twin island state is at significant risk from several seismic sources, both on land and offshore. A 2,500 year return period earthquake on the Central Range Fault in Trinidad could induce very intense shaking equal to and greater than Modified Mercalli Intensity VII throughout the entire island. Our analysis reveals that the losses from such an event could be up to US\$33B and that current risk transfer arrangements are grossly inadequate to cushion the effects.