

A Review of Critical Infrastructure Interdependency Simulation and Modelling for the Caribbean

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Abstract: Caribbean Small Island Developing States (SIDS) are particularly disaster prone and, as such, disaster risk reduction and effective emergency management are crucial to sustainable development. Studying critical infrastructure interdependencies (CII) is a relatively new facet of disaster risk reduction. Computer simulation software is the most effective and economical method of studying these relationships. This paper contextualises the role of CII simulation as part of a complete disaster and emergency management programme, and reviews the state-of-the-art as pertains to utilisation of such tools among Caribbean emergency management agencies (EMAs). It finds that Caribbean EMAs do not currently utilise CII tools. The paper then reviews some of the most popular simulation tools under development such as CIPDSS, HAZUS, I2Sim/DR-NEP and ESRI Sim Disaster. Their applicability and ease of adoption to the Caribbean context is considered. I2Sim was viewed as being the best suited for Caribbean EMAs.

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