

**Emergent Risks from Rapid industrialization in the Caribbean.  
GREEN SPACE**

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**Abstract**

There has been a rapid increase in the creation and operation of industrial sectors that simultaneously introduce new threats and hazards to a social and environmentally sensitive region. Small Island Developing States (SIDS) are particularly vulnerable to the effects of industrial accidents. Increased production and utilization of chemicals and products that are not native to the environment create new hazards, which include fires, explosions and toxic releases. These hazards can produce significant losses and harm to people, property and the environment. These effects can affect the development of many Caribbean states by interrupting the physical and social systems, which can have long term irreversible consequences.

Many of the nations in the Caribbean are exposed to a number of natural threats including flooding, hurricanes and earthquakes. Natural disasters can affect critical infrastructure which will negatively impact industries. These give rise to new hazards as a result of domino effects resulting in numerous negative, unforeseen and undesirable effects.

A case study was performed on Trinidad using select industries and applying the concepts of Vulnerability and Resilience to industrial accidents. Potential release scenarios were created and the expected physical and consequential effects simulated and quantified. The effects were mapped and the affected region analyzed. The potential countermeasures were evaluated; to determine its effectiveness at mitigating and reducing potential losses. A combined quantitative and qualitative methodology was used to assess the acute, intermediate and long term impacts. The results generated were used to determine the extent of the damage and assess the resilience of the social and environmental systems.

**Keywords:** Vulnerability, Resilience, Small Island Developing State, Industrial, Disaster.