
What are the Risk Atlases? Case Study: Risk Atlases in the Municipalities of Altamira, Madero, and Tampico, Tamaulipas State, Mexico

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ABSTRACT

A risk atlas is an instrument useful to prevent, reduce, mitigate, and attend to disasters. It serves to inform the population about dangers to which they could be exposed, and also to create a normative scheme of responsible postures in order to plan and develop human settlements. Its objective is to identify, map, and enumerate the natural and anthropogenic dangers and risks affecting the population or the infrastructure. The case study is located in the municipalities of Altamira, Madero, and Tampico, Tamaulipas State, Mexico. The hydro-meteorological dangers include 25 tropical cyclones per season; however, only 15 have impacted directly or nearby the metropolitan area in the last 10 years. High erosion covers 11% of the studied surface, the extreme erosion involves 2%, 13% is medium grade, and 60% is under low grade erosion regime. The chemical-industrial dangers include explosions and fires in gas and gasoline stations, and in buried PEMEX pipes. Using the high resolution properties of a hyperspectral image, this search could be enriched with soil and water contamination studies after hydrocarbon leakage in trenched pipes, or due to surface stain appearance.