



Extreme Weather Risk Assessment: The Case of Jiquilisco, El Salvador

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All major climate models predict increases in both global and regional mean temperatures throughout this century, under different scenarios concerning future trends in population growth or economic and technological development. This consistency of results across models has strengthened the evidence about global warming. Despite the convincing facts and findings of climate researchers, there is still a great deal of skepticism around climate change.

There is somewhat less consensus about some of the consequences of climate change, for example in reference to extreme weather changes, in particular as regards more local scales. However, such changes seem to have already considerable impact in many regions across the world in terms of lives, economic losses, and required changes in lifestyles. This may demand appropriate policy responses both at national and local levels.

Our work provides a framework for extreme weather multithreat risk management, based on probabilistic risk assessment (PRA). This may be useful in comparing the effectiveness of different actions to manage risks and inform judgment concerning the appropriate resource allocation to mitigate the risks.

The methodology has been applied to the case study of the "El Marillo II" community, located in the municipality of Jiquilisco in El Salvador. There, the main problem related with extreme weather conditions are the frequent floods caused by rainfall, hurricanes, and water increases in the Lempa river nearby located. However, droughts are also very relevant. Based on several sources like SNET, newspapers, field visits to the region and interviews, we have built a detailed database that comprises extreme weather daily data from January 1971 until December 2011. Forecasting models for floods and droughts were built suggesting the need to properly manage the risks. We subsequently obtained the optimal portfolio of countermeasures, given the budget constraints.

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