



## **Tsunami risk assessment on the coast of El Salvador (Part I: Hazard).**

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El Salvador has been hit by 11 tsunamis between 1859 and 1997. Nine of them are registered in the twentieth century, being generated by earthquakes. The occurrence of a strong tsunami in the area could generate a significant tragedy because the density of population living in coastal areas and the existing coastal infrastructure (ports, industry, roads, hotels). The Ministry of Environment, through the Directorate of the National Service of Territorial Studies (SNET), the agency responsible for earthquake and tsunami warning in El Salvador, in collaboration with the Institute of Environmental Hydraulics at the University of Cantabria and the National Geographic Institute of Spain, with funding from the Spanish Agency for International Development, is developing the project "Risk Assessment of Tsunami on the coast of El Salvador (Part I: Hazard)." The project's main objective is to assess the tsunami hazard in front of the Salvadoran coast through the development of hazard and flood maps. Other tasks on this project are the study of mitigation measures at the global and local scale, the development of strategies for risk management, transfer of technology and numerical tools and adaptation of the methodologies to the Salvadoran coastal system. The results obtained in the project will allow to the responsible institutions to reduce the risk from tsunamis and provide the basis for the design of a local warning system.

We are developing deterministic and probabilistic hazard maps from the numerical modelling of waves generated by seismic sources. We have considered distant sources, intermediate and local. The distant sources are defined from major events of recent times. The intermediate sources, in the Mexican and Colombian subduction, from the source characterizations of historical events. The local sources have been characterized from the seismotectonic study of the Central American subduction zone. We can consider two types of typical local events as potentially tsunamigenic. On the one hand the thrust-type subduction interface slow events, similar to the 1992 Nicaragua earthquake and tsunami; and on the other hand the outer-rise normal fault events.