

Increase of flood exposure on the Spanish Mediterranean coast over the last decades. The influence of spatial planning.

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Since the 1960's, the Spanish Mediterranean coastal area is one of the main tourist destinations in the world and one of the highest rates of population, building and economic growth of Spain. Despite this growth have involved a lot of preventive flood management measures, especially structural measures (dams, water derivations, channelling, etc...), the area has registered an increase in the intensity, frequency and economic losses related to floods in recent decades. However, according to climatic records, this trend is more related to an exposure multiplication derived from economic growth than with the increase of extreme rainfall events produced by climate change.

Within this framework it is interesting to evaluate how local governments (institution responsible for the process of spatial planning) have influence on exposure through allowing the construction in flood-prone areas. In this regard, this study quantifies the evolution of number of housing in flood-prone areas according to the cadastral information and the hydrological modelling data for the return periods of 10, 50, 100 and 500 years, respectively.

Results highlight an increase in the number of building in flood-prone areas over the years. This increase in physical and economic exposure without any non-structural risk mitigation measure is one of the main factors for flood events. Therefore, results report that local governments did not consider the floodable areas into spatial planning and have made future scenarios characterized by an increase in the number of floods and their consequential damages.