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Coastal Floods: Urban Planning as a Resilience System

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Despite some research efforts can be found across the literature, FRe system (Flood resilient system) is still a vaguely defined concept. Therefore, a comprehensive presentation of existing FRe systems would provide valuable contribution in order to illuminate objects laying behind this term.
A systematical literature review scanning existing FRe objects will submerge us in a melting pot involving an extremely wide and heterogeneous range of elements like land planning, opening barriers, river channeling, rain forecasting... Carrying out an analyze of the resulting matter and focusing on the nature and spatial range of application of each element, a FRe objects comprehensive typology will be sorted out, leading into the end to a better understanding of the ways human societies can improve their resilience against floods.
Coastal areas have been characterized by an urban expansion due mainly to the increase and displacement of the population, being this process highly increasing during the last century. On the other hand, climate has been changing leading to the increase of coastal floods, through both sea level rise and several meteorological phenomena accentuation. And also, other longer term local/regional coastal changes, most occasionally favoring floods, interfere leading to more frequent and intense flood risks and damages.
As "living with floods" became an objective in many coastal cities, the previous clas-sification will be put into practice focusing on one particular FRe system scale: Urban Flood Resilience. This resilience can be achieved by means of planning procedures and building infrastructures, but in many cases these measures cannot be enough, having to be complemented with different technologies and systems. With suitable applications, Flood Resilience Systems substantially reduce damages, costs and health impacts associated with flood hazards.
The importance of the urban planning as a Flood Resilience System in coastal areas will be analyzed in the research project FP7 – SMARTEST by means of different cases study: cold drop floods (Valencia 1776, 1957 and 1982; and Murcia, 1879 and 1997), hurricanes on Caribbean and western North-Atlantic areas, or to typhoons.