

Climate change: Coastal Flooding Impacts and Adaptation Strategies in Urban Planning.

The PhD project focuses on the development of adaptation strategies to enhance the resilience of urban environments in coastal areas in response to the hazards posed by climate change, especially rising sea levels and increased risks of storm surges and flooding.

Many coastal areas are highly popular for housing purposes, densely populated, and likely to hold many cultural, social and economic values. The multiplicity of qualities and activities to be found in these spaces are important to the overall liveability of the coastal cities. Many shared values are at risk in coastal urban areas which rise new adaptation challenges to be dealt with within urban design.

The project identifies and analyzes the opportunities and barriers for developing innovative adaptation strategies in Danish coastal cities. It examines: *Which urban values are at risk? How can the liveability in urban spaces be maintained when hydrological hazards increase? How can adaptation strategies be developed that contribute to resilient urban coastal environments?*

The project will make a GIS-based assessment of the environmental and socio-economic vulnerability of coastal urban areas which enables assessing water's impact on urban values. This will be obtained through mappings of coastal cities vulnerable to flooding and identification of urban values at risk in combination with spatial information on socio-economic and cultural urban values such as cultural heritage, buildings and production facilities, critical infrastructure, public spaces, urban nature, etc.

By conducting a number of case studies the project will also provide a situational knowledge of the challenges and dilemmas of enhancing urban resilience. It will analyse local conditions and how citizens, planners and other professionals are involved in the making of the adaptation strategies. By exploring the interactions of planning practices and local inhabitants' everyday life in (re-) shaping urban spaces it is investigated how the present use of urban space is challenged and how intruding sea water can be used in a flexible urban design.

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