

## **Integrated Coastal Management for the Sustainable Development of Coastal Cities: The Case of El-Mina, Tripoli, Lebanon**

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**Abstract :** Coastal cities are constantly exposed to environmental degradation and economic regression fueled by rapid and uncontrolled urban growth as well as continuous resource depletion. This is the case of the City of Mina in Tripoli (Lebanon), where lack of awareness to preserve social, ecological, and historical assets, coupled with the increasing development pressures, are threatening the socioeconomic status of the city residents, the quality of life and accessibility to the coast. To address these challenges, a holistic coastal urban design and planning approach was developed to analyze the environmental, political, legal, and socioeconomic context of the city. This approach aims to investigate the potential of balancing urban development with the protection and enhancement of cultural, ecological, and environmental assets under an integrated coastal zone management approach (ICZM). The analysis of Mina's different sectors adopted several tools that include direct field observation, interviews with stakeholders, analysis of available data, historical maps, and previously proposed projects. The findings from the analysis were mapped and graphically represented, allowing the recognition of character zones that become the design intervention units. Consequently, the thesis proposes an urban, city-scale intervention that identifies 6 different character zones (the historical fishing port, Abdul Wahab island, the abandoned Port Said, Hammam el Makloub, the sand beach, and the new developable area) and proposes context-specific design interventions that capitalize on the main characteristics of each zone. Moreover, the intervention builds on the institutional framework of ICZM as well as other studies previously conducted for the coast and adopts nature-based solutions with hybrid systems for providing better environmental design solutions for developing the coast. This enables the realization of an all-inclusive, well-connected shoreline with easy and free access towards the sea; a developed shoreline with an active local economy, and an improved urban environment.

**Keywords :** blue green infrastructure, coastal cities, hybrid solutions, integrated coastal zone management, sustainable development, urban planning

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