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A model of vernacular architecture resilience to impact of climate change and social challenges in the Mediterranean basin: the case study of the Trabocchi Coast (Abruzzo Region, Italy)

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The Mediterranean basin is affected by extreme weather phenomena that are increasing in frequency and intensity. To the effects of these climate changes a broad response must be provided by the population, structures and infrastructure involved. Affecting a wide variety of issues, this increase therefore requires an interdisciplinary assessment of impacts (economic, social and environmental). In fact, climate change and land use are the main drivers of environmental and socioeconomic transformations of landscapes and coastal areas.

This study presents an interdisciplinary and participatory research methodology that analysed a coastal case study, the Trabocchi Coast (Abruzzo Region, Italy) characterized by a typical kind of vernacular architecture, the "trabocchi", increasingly threatened by climate change. The objective of the study was to assess the resilience of these coastal structures, "fishing machines" identified by the community as intangible cultural heritage, meaning their ability to cope with and adapt to changes while maintaining their identity and recognisability.

The adopted approach combined quantitative and qualitative data from meteorological analysis, literature review, and field surveys. The investigation of specific weather events was conducted considering both large-scale long-term analysis (using the ERA5 dataset) and small-scale short-term analysis (models and ground-based sensors). A participatory workshop with the population was organized by the authors at the Municipality of San Vito Chietino with the support of the Municipality itself, from which a significant part of the results emerged. The latter provided an overview of the relevant phenomena that have occurred in recent decades which, by posing a threat to this expression of cultural heritage due to climate change (sea level rise, coastal erosion, storms, flooding, and salinization) have, however, also presented challenges and opportunities for coastal development, stimulating various resilient responses by local communities.

Keywords: climate change; trabocchi; intangible cultural heritage; coastal areas; resilience; safeguarding adaptive strategies; heritage uses.

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