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Towards a citizen-based green transition: Nature-Based Solutions in mediterranean areas: CARDIMED project

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Mediterranean territories are increasingly exposed to growing environmental fragility, risks linked to climate change and associated environmental disasters, as well as persistent socioeconomic challenges exacerbated by long-established patterns of urbanization. In this context, nature-based solutions (NBS) have been promoted by European policy frameworks as key tools for addressing these challenges. However, despite their growing political relevance, NBS often encounter barriers to implementation related to low public acceptance, limited social legitimacy, concerns about environmental and social justice, and insufficient integration of local knowledge and everyday practices.

This study addresses this gap by examining how local communities perceive, interpret, and interact with NBS in Mediterranean contexts through public participation processes in urban environments. The analysis focuses on several case studies located in Italy (Catania and Ferla, Demo 4), France (Saint-Jérôme and Saint-Charles, Marseille, Demo 5), Spain (Zaragoza, Demo 6), and Cyprus (Nicosia, Demo 9), within the CARDIMED project. These cases include various implementations of NBS, such as rain gardens, vertical green walls, green facades with vertical gardening and hydroponic systems, photobioreactor systems, biological drainage channels, and other nature-based interventions.

The study is theoretically grounded in socio-ecological governance and sustainability transition theories, conceptualizing NBS not only as technical measures but as relational and well-being-oriented solutions capable of reshaping human-environment relationships and strengthening social cohesion. The participatory methodology draws on behavioral economics principles to analyze the underlying human behaviors, attitudes, and perceptions that condition NBS acceptance. To explore these dynamics, structured focus groups were conducted with key community representatives (5 - 14 participants per group) to investigate shared perceptions, experiences, and concerns towards NBS, as well as their role in shaping narratives on water conservation, climate resilience, and sustainable land-use practices. The qualitative data were then

analyzed using content analysis and ATLAS.ti software.

The results indicate that participatory processes play a decisive role in improving the awareness, legitimacy, and long-term governance of NBS, while revealing the structural and institutional constraints that risk undermining their transformative potential. These findings provide critical insights and pave the way for further investigation into justice-based and socially rooted NBS implementation pathways, supporting greater societal acceptance and strengthening collective ownership.