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Planning effective and multifunctional nature-based solutions: insights from the case-study of Malta

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Nature-based solutions are increasingly promoted in regional and national policies as actions to address societal challenges and promote climate change mitigation and adaptation while leading to co-benefits to human well-being and biodiversity. However, several challenges limit the mainstreaming of nature-based solutions in decision-making. Through the presentation of case studies from the island state of Malta, we analyse the (a) use of urban ecosystem service assessment to prioritise nature-based solutions based on existing distributional patterns, (b) recent case-studies of nature-based solutions implementation, and (c) barriers and enablers to mainstreaming nature-based solutions in decision-making. We show how urban ecosystem service assessments can support greening strategies by identifying the most effective nature-based solutions that can play a redistributive role by addressing existing inequalities in ecosystem services supply within cities. Our results also indicate that while nature-based solutions were used to address multiple societal challenges, including tackling drought and heat risk, low place aesthetic value, low green infrastructure availability, and biodiversity and knowledge loss, several gaps in practice remain. We show how nature-based solutions uptake has been more strongly associated with the environmental sector, and social and economic benefits, such as green job creation, social cohesion and ownership by communities, were less often identified in the analysed case-studies. We also show how current bottlenecks, including knowledge gaps regarding the scope, cost-effectiveness and benefits arising from nature-based solutions, and limited practical experience, act as barriers to implementation while the arising public relations, adoption of interdisciplinary approaches involving multiple stakeholders, and the availability of regional guidelines were considered as key enablers. Drawing on these case-studies, we present recent collaborative work aiming at addressing some of the gaps in knowledge and practice, while engaging with communities to co-create nature-based solutions and evaluating the impacts of implementation.