

## **Governance | Individual communication**

IC - (21399) - GREEN SPACES OVER A ROOF OR ON THE GROUND, DOES IT MATTER? IMPACT IN TERMS OF CULTURAL SERVICES AND RESTORATIVE EFFECTS PERCEPTION

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## **Background and objectives**

Dense urban areas usually have high overall soil sealing and lack of urban greening. Soil sealing affects ecosystem services, causing increased air temperature and reduced water infiltration. Cities become more vulnerable to climate change and need appropriate adaptation measures to increase urban greening, as the integration of green roofs in buildings.

Urban green spaces contribute to urban resilience, improving the health and the well-being of urban residents. Previous studies have been demonstrating that Nature-based Solutions (NbS) provide multiple Ecosystem Services (ESS). Although different NbS provide different provisioning, regulating, cultural or supporting services, depending on their composition and configuration.

## **Process and methods (for empirical research)**

An image-based online survey performed to 376 Portuguese undergraduate students aims to understand if there is a perception of the real limitations in the supply of provision and regulating services by different types of green roofs. And determine if the green space conditions (access and vegetation) affect the perception of cultural ecosystem services, and restorative effects.

## **Main results (or main arguments in the case of critical reviews)**

The perception pattern of results relating vegetation type and roof type are generically the same across all ESS. The results demonstrate a lower perception of delivery of regulating and provisioning services when compared with cultural services suggesting a lack of understanding of the basic biophysical processes and functions underlying the NBS provision of services. And there isn't a clear awareness of the roof structure existence and its influence on natural processes, notably its effect on the water cycle and biomass development. The presence of vegetation has a significant value increase when compared with areas with no vegetation. Higher values of Perceived Restorativeness (PRS) and Restoration outcomes (ROS) were also identified on the ground green spaces with an increase on the situations with more vegetation.

## **Implications for research and practice/policy | Importance and originality of the contribution**

This work shows that stakeholders' engagement can be a great strategy to better design NbS and identify potential directions for policy making.

**Palavras-chave :** ecosystem services, urban green spaces, green roofs, perception, preference, perceived restoration