



## Green Space Management (Green Roofs in Drylands) with GIS Analysis expertise

(Bachelor's/Master's thesis)

Green Roofs (GR) are increasingly promoted to enhance urban biodiversity. Overall, the role of spatial context, such as distances between suitable habitat patches, is crucial for understanding the effectiveness of GR in supporting biodiversity in highly fragmented urban areas. In this project, the student will examine the spatial, ecological, and socio-economic conditions that favor biodiversity on GR using GIS spatial analysis tools. For example, the weighted overlay tool will be used to identify priority zones with different weighting approaches (equal weighting, systematic weighting), and the Near tool will calculate distances to surrounding habitats, considering varying minimum habitat areas (100, 500, and 1000 m<sup>2</sup>). Additionally, habitat percentages will be calculated within different radii (1, 5, 10 km). The student will use forward-in-time, individual-based refinements to advance our understanding of biodiversity.

**Description:** How can we optimize green roof spatial planning to better support biodiversity in urban environments? How will climate, socio-economic, and land use changes affect planning for GR to enhance biodiversity, particularly in drylands?

**Methods:** GIS analysis and R, i.e. the candidate should have solid GIS skills.

**Starting date:** any time, ideally in 2024

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