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Nature-based solutions at the *Santuario* Neighbourhood – An Urban Lab approach in Córdoba, Spain

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INTRODUCTION

- The modernization of cities through their renaturalization with nature-based solutions (NbS) is a line of work of great importance in the EU, due to the threat of climate change and the need to adapt our cities to it.
- The urban laboratory aims to explore and identify a problem in the city associated with climate change and the type of NbS to apply and implement. Urban labs are experimented by putting into practice NbS systems for their evaluation and redesign. The impacts, effects and profitability of the pilot projects are evaluated and analyzed; and, finally, results are shared and extrapolated to other neighborhoods in the city.
- Our urban lab is inspired from the “Asociación de Vecinos Santuario (Córdoba)”; being the IMGEMA - Municipal Institute of Environmental Management, Real Jardín Botánico de Córdoba (Spain) the institution that advises on NbS – to the neighborhood and *via* the urban lab.

OBJECTIVES

Strategies on NBS for the management of private green spaces in the Neighborhood of “Santuario” (Córdoba, Spain).

MATERIALS AND METHODS

1. Location



2. Current diagnosis

- Inventory of green spaces and species.
- Planimetry.
- Technical sheets of the species.

URBAN CIRCULARITY CHALLENGES (UCCs)

According to Atanasova *et al.*, 2021, the urban circularity challenges (UCCs) for shifting to circular management of resources that can be addressed by the project are as follows:

- UCC1** – Restoring and maintaining the water cycle (by rainwater management)
- UCC2** – Water and waste treatment, recovery, and reuse
- UCC3** – Nutrient recovery and reuse
- UCC5** – Food and biomass production
- UCC6** – Energy efficiency and recovery
- UCC7** – Building system recovery

REFERENCES

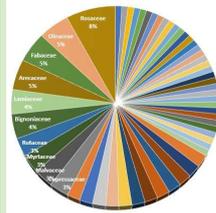
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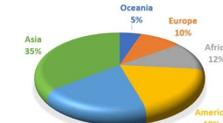
RESULTS

Families	56
Genus	94
Species	101

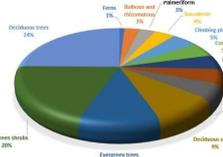
FAMILIES



DISTRIBUTION



PLANTS GROUP



The 16,000 m² of green areas in the “Santuario” Neighborhood are divided into twenty-three plots. The planimetry of all the plots has been drawn. The images show in 2D and 3D the plan of plot A1.



More than one hundred technical sheets were made for each of the species with botanical, morphological and ecophysiological data.

RECOMMENDATIONS AND CONCLUSIONS

Recommendation on implementing innovative NBS units and interventions selected as potential for their implementation in the Sanctuary Neighborhood (based on Langergraber *et al.*, 2021).

- Rainwater Management**
 - (07) Bioretention cell
 - (08) Bioswale
 - (10) Tree pits
 - (11) Vegetated grid pavement
- Vertical Greening Systems and Green Roofs**
 - (13) Ground-based green facade
 - (14) Wall-based green facade
 - (15) Pot-based green facade
 - (16) Vegetated pergola
 - (17) Extensive green roof
 - (18) Semi-intensive green roof
 - (20) Mobile green and vertical mobile garden
- (Public) Green Space**
 - (39) Street trees
 - (41) Pocket/garden park
 - (42) Urban meadows



ACKNOWLEDGMENTS

“Santuario” Neighborhood Association (Córdoba, Spain) and COST Action CA17133 Circular City.

