



INTERUNIVERSITY PHD COURSE
“SUSTAINABLE LAND MANAGEMENT”
Cycle XXXVI

PhD Student:	Giuseppe Milano
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Title of the Research Project	Monitoring of imperviousness in urban areas threatened by the climate crisis: the case of Apulian landscapes.
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Summary of the Research Project

Soil is a natural resource, limited and finite, almost non-renewable. For some years now, the paradigm of ecosystem services has been introduced in the international scientific debate in order to better understand the complex structure of the soil and evaluate the impact of the multiple benefits of nature on anthropic activities, which are now strongly compromised by climate change. Precisely because of the strategic nature of this ecological asset, since 2006 and recognizing various forms of degradation, the European Union has progressively built a regulatory framework aimed at its protection and enhancement, urging Member States to achieve neutrality in the consumption of net soil (land degradation neutrality). This research project will focus on the evaluation and monitoring of soil consumption, placing waterproofing in relation to recent phenomena such as floods (or hydrogeological risk) and heat islands. Furthermore, land consumption in urban areas can also be explored in terms of its time acceleration and the volumetric configuration of the existing building stock, with the idea of defining integrated knowledge for the benefit of local stakeholders. Finally, for the development of the project, mathematical models and satellite images will be analyzed, as well as remote sensing for a more accurate diagnosis of the area under study, identified in the Apulian regional territory.

Bibliography:

- Nature-based solutions: Settling the issue of sustainable urbanization. Laforteza R., Sanesi G., Environmental Research, Volume 172, Pages 394-398, May 2019.
- Remote Sensing of Urban Forests. Sanesi G., Giannico V., Elia M., Laforteza R., Remote sensing, October 2019.
- Combining high-resolution images and LiDAR data to model ecosystem services perception in compact urban systems. Laforteza R., Giannico V., Ecological Indicators Volume 96, Part 2, Pages 87-98, January 2019.