



EURAF
2024

EURAF 2024
28-31 MAY 2024
ABSTRACT BOOK

Editors: Bohdan Lojka, Šárka Hoffmannová

EURAF 2024
28–31 MAY 2024, Brno
Abstract book

2024

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ISBN 978-80-7509-982-2 (online ; pdf)

<https://doi.org/10.11118/978-80-7509-982-2>



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4.4 Urban Agroforestry

Oral presentations

Hall Q3, 31 May 2024, 9:00–9:45

The role of agroforestry for the ecological transition and socio-territorial regeneration in periurban areas. A case study in the city of Milan

Prof. Alice Dal Borgo¹, Prof. Stefano Bocchi², Dott. Valentina Capocéfalo³, Dott. Gemma Chiaffarelli³, Dott. Pietro De Marinis², Dott. Fiorenza Gulino¹, Dott. Enrico Sartori¹, Dott. Andrea Schievano², Prof. Luisa Zaniboni⁴, Prof. Ilda Vagge³

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Agroforestry practices can play a key role in ecological transition and socio-territorial regeneration in peri-urban areas, particularly when designed and implemented according to agroecological principles and through participatory tools that encourage citizens' involvement and long-term engagement towards one's living environment such as: public plantings, self-building workshops, shared agroforestry system management activities, field training initiatives, community mapping activities, talks and cultural events. Thanks to all these initiatives, the regenerative agroforestry system becomes a new community hub where people can experiment with ecological and transformative practices, where to learn new skills and develop abilities, and where to spend time putting themselves at the service of the common good. Thus, our presentation aims to illustrate some first results of our interdisciplinary analysis dedicated to assessing ecosystem services generated by agroecological practices in the periurban area in the Milan metropolitan city South-Eastern edges, next to the last city buildings. The area belongs to the Rural Park South Milan and the Vettabbia Valley system, an historical ditch flowing out of the city into its rural surroundings. A "unique" suburbs for Milan: a large and central area, nestled between a compact city and the countryside; a neighborhood composed of different parts that are proposed or undergoing various processes of transformation; an environment animated by endogenous projects that represent grafts of change and bring attention back to "shadowed" spaces and inhabitants. In the area under analysis there are territorial criticalities related to the degradation and abandonment of buildings (farmsteads) and artifacts (traditional irrigation systems, embankments, washhouses) belonging to the historical heritage.

Here non-profit organisations have activated in 2018 an applied agroecology project: two experimental plots with multi-strata productive agroforestry systems were designed and implemented (1 ha each, 12,000 productive and non-productive trees and shrubs, more than 40 species and 32 fruit cultivars) through participative approaches, directing involving citizens in didactical activities, plantings and other agroecological activities, aiming at developing a bottom-up local, regenerative supply chain. Agroecological principles are adopted (no pesticides, no chemical fertilizers, no irrigation, minimum tillage, cover crops, mulching), including phytoremediation strategies. Productive and production-supporting elements are managed through intensive pruning and biomass inputs to the soil in such a way as to facilitate greater complexity, dynamism and productivity. During 2023, within the project "Adopt a hen!", a hundred of egg-laying hens breeding on mobile coops was introduced in the agroforestry system according to the principles of rational grazing, with the aim of making the ecological-productive processes within the system itself more complex and creating Milan's first peri-urban agrosilvopastoral initiative supported by an active community of citizens.

Through qualitative-quantitative analytical tools and a transdisciplinary research approach, we want to understand how, and to what extent, experimental agroforestry practices, guided by the observation of the natural environment and through a culturally acquired pattern, enable the creation of a new regenerative peri-urban landscape, an expression of ecological and cultural values that bind the community to its living area restoring in people a deep sense of place and genuine sentiments of usefulness to the ecological transition of the city.

Our contribution will focus on:

- floristic-vegetation analysis results, also through the use of ecological indicators, and pasture control, with reference to the implementation of its agroecological management and related ecosystem services;
- analysis results on fecal biomarkers (search for sterols and stanols as possible indicators of fertilization and manuring). Pollen analysis results of sediment samples for carbonized plant macroresidues with the aim of understanding past soil uses;
- socio-territorial analysis results: mapping, monitoring and implementation of cultural ecosystem services generated by the presence of the agroforestry system and its implementation to an agrosylvopastoral system with the inclusion of egg-laying hens on mobile coops and rational grazing. Socio-territorial analyses will be carried out through structured questionnaires, semi-structured in-depth interviews, community mapping activities.

Keywords

agroecology, research-action approach, grazing, biodiversity, Socioeconomic status, Landscape ecology, succession, urban green infrastructure, syntropic agriculture, Regenerative communities, mobile chicken coops, ecosystem services, Cultural Ecosystem Services, Agroforestry systems, stratification

Additional Attachment II.



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Title: EURAF 2024 28–31 MAY 2024
Abstract book

Editors: Bohdan Lojka, Šárka Hoffmannová

Publisher: Mendel University in Brno, Zemědělská 1, 613 00 Brno

Edition, Year of issue: 1st, 2024

Number of pages: 528

ISBN 978-80-7509-982-2 (online ; pdf)

<https://doi.org/10.11118/978-80-7509-982-2>

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