

# Citizens' role and attitude in implementing urban green infrastructure

## A survey in Milan

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In the challenge for urban resilience, public and private must work together for a common goal. To date, Urban Green Infrastructure strategies are almost exclusively based on public interventions in public spaces. In this contribution, the citizens' attitude towards a sustainable transformation of private spaces is investigated in the case of Milan. The results show, on the one hand, citizens' awareness of pressing problems such as air pollution and heat peaks, and on the other hand, concerns about practical problems. The need for more dialogue between institutions and citizens is highlighted in order to spread awareness and correct information and to incorporate the preferences and concerns of the population.

### Green Infrastructures for urban resilience

Facing the growing threats of Climate Change and extreme weather events, cities have started to implement adaptation strategies to increase their preparedness. The integration of Urban Green Infrastructure (UGI) into the urban environment is a key part of adaptation programmes. **While large-scale public interventions (new green areas, sustainable drainage systems and green corridors) are necessary to create the main green network, citizens and private individuals play a key role in integrating and complementing the network with a system of smaller interventions.** Private open spaces represent a significant share of urban land and their sustainable transformation can have a significant impact. Testing people's attitude towards green interventions is a crucial step in order to develop effective strategies for extending the Green Infrastructure in private spaces

### Research design – how to engage citizens and private spaces for extending the UGI?

A social survey was carried out in the case study of Milan (Italy). The city's private open spaces are mostly residential courtyards. In addition to general questions on how and how often courtyards are used, the current functions and the presence of greenery, the questionnaire focuses on three points: preferences between different alternative interventions, perception of strategic priorities and concerns regarding greening interventions.

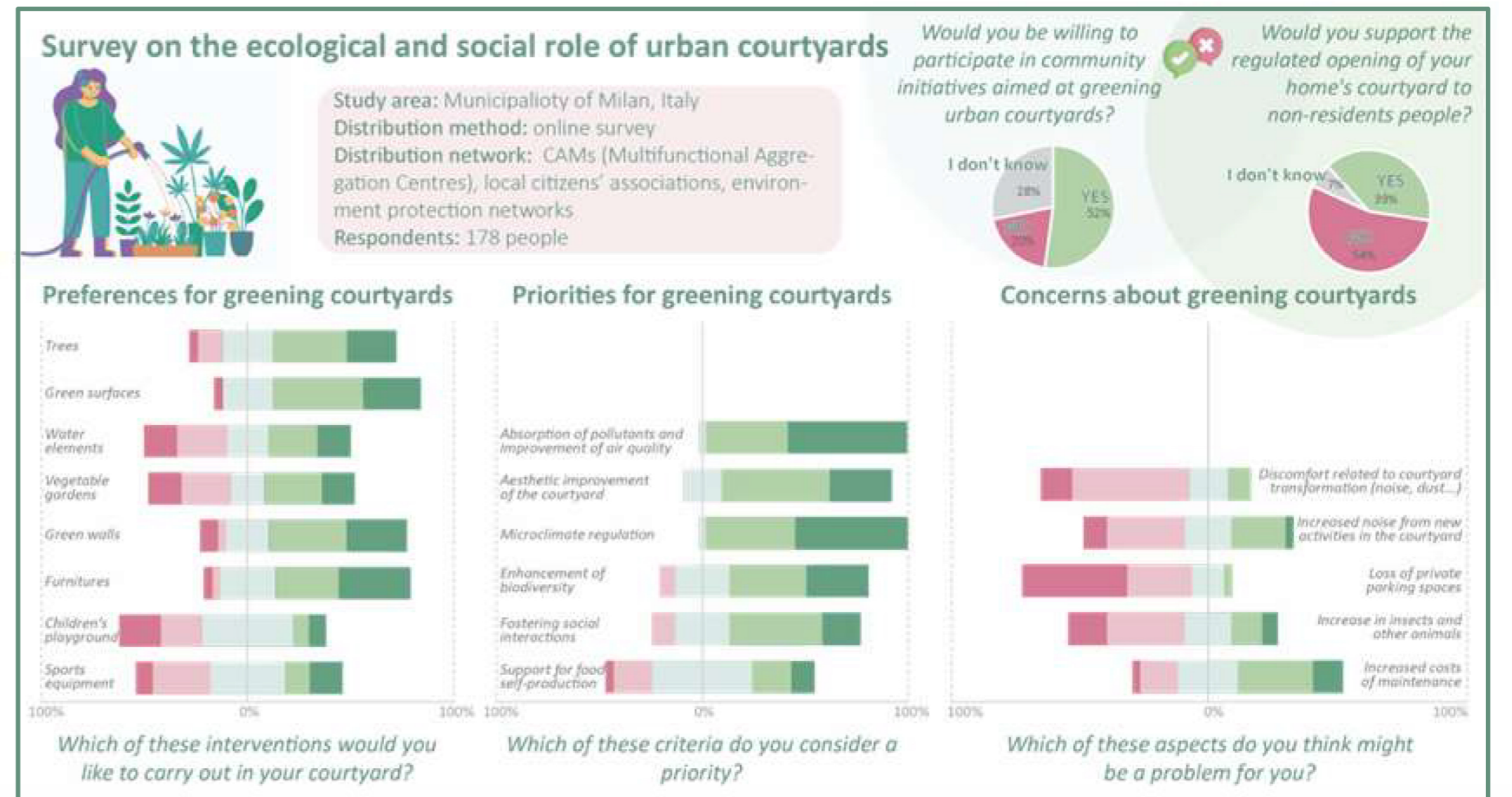
#### References

- Benedict, M. A., & McMahon, E. T. (2006). *Green Infrastructure: Linking Landscapes and Communities*. Oisland Press.
- Buijs, A., Hansen, R., Van der Jagt, S., Ambrose-Oji, B., Elands, B., Lorange Rall, E., Mattijssen, T., Pauleit, S., Runhaar, H., Stahl Olafsson, A., & Steen Møller, M. (2019). *Mosaic governance for urban green infrastructure: Upscaling active citizenship from a local government perspective*. *Urban Forestry and Urban Greening*, 40, 53–62.
- Mahmoud, I. H., & Morello, E. (2020, January). Are Nature-based solutions the answer to urban sustainability dilemma? The case of CLEVER Cities CALs within the Milanese urban context. Conference: Atti Della XXII Conferenza Nazionale SIU. L'Urbanistica Italiana Di Fronte All'Agenda 2030. Portare Territori e Comunità Sulla Strada Della Sostenibilità e Della Resilienza.
- Sanesi, G., Colangelo, G., Laforteza, R., Calvo, E., & Davies, C. (2016). Urban green infrastructure and urban forests: a case study of the Metropolitan Area of Milan, *42(2)*, 164–175.
- Tzortzi, J. N., & Lux, M. S. (2022). Renaturing historical centres. The role of private space in Milan's green infrastructures. *AGATHÓN | International Journal of Architecture, Art and Design*, 11, 226–237.

✓ Courtyards in Milan (Pictures by M.S. Lux)



### People's attitude in Milan



The questionnaire results highlight a strong preference for 'structural' greening interventions, such as green walls and surfaces which are able to deeply change the perception and functionality of the space. This is coherent with the assignment of priority to air quality improvement and microclimate mitigation, which are actually severe problems in Milan directly affecting people. Among the concerns, the increase in costs of maintenance ranks first, which suggests the need to continue working on low-maintenance solutions and circular processes on the research front and to strengthen awareness-raising activities about the long-term sustainability of green interventions on the educational front.

About people's attitude on their direct engagement, a positive feedback was registered on participating in greening activities (even if with a high rate of undecided respondents), while there is a much more negative attitude towards the regulated opening of private courtyards to non-resident people, probably linked with concerns about noises and security.

The results obtained suggest the need to base a viable strategy for the inclusion of private space in the Urban Green Infrastructure programme on participatory processes and public consultations, in order to involve citizens in the definition of effective ways and tools for the sustainable management of private open space.