



POLITECNICO
MILANO 1863

University societal outreach and citizen science: Open challenges

Carolina Pacchi, EUGEO Conference

11.09.25

During the last decades universities have been facing **increasing demands to widen their scope and role**, from their original missions, linked to **education and research**, to **innovation, public engagement and contribution to local development**, through different forms of societal outreach

A shift that has not necessarily been easy

Societal outreach has been experimented through many different paths and frameworks, such as **engagement in research projects explicitly aimed at addressing pressing challenges** (such as those related to environmental degradation, climate change, increasing inequalities, ...) at local or global level

In this context, **citizen science** projects may serve **multiple interconnected functions**

- Contributing to **democratizing research processes** by involving locally based or spatially diffused communities as active participants rather than passive subjects; in research endeavours initiated by universities: citizens contribute their knowledge, experiences, and observations to help identify and address social and environmental challenges and this bottom-up approach ensures that research priorities better align with actual community needs

- **Enhancing data collection and analysis capabilities** in some domains:, projects can gather more comprehensive datasets (for instance by deepening their scope and lengthening time periods) than would be possible with traditional research methods alone

Particularly valuable in projects focusing on **environmental monitoring**, **urban development**, and **social welfare**, as are many societal outreach project universities are engaged in

- Fostering **educational tools**, promoting **scientific literacy** and **critical thinking among participants**.

Citizens gain **hands-on experience of scientific methodologies, data collection protocols**, and **analytical processes**

This knowledge transfer strengthens the connection between academic institutions and local communities, while **building capacity** for future community-led initiatives

Applying these principles to better understand and interpret the role of citizen science in university-led public engagement initiatives by focusing on the Polisocial Award within the Off-Campus initiatives

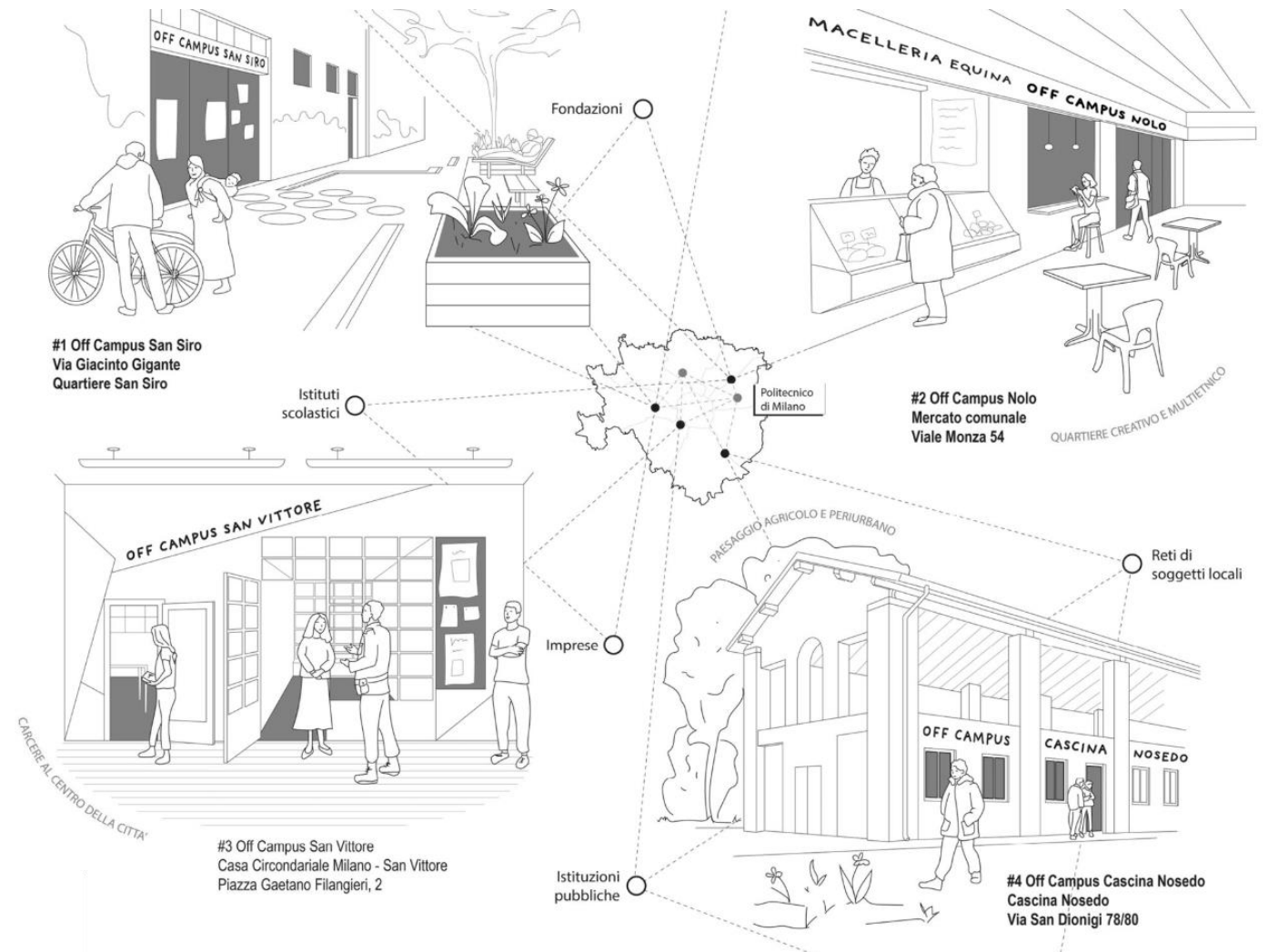
Polisocial encourages a new **multidisciplinary approach** to projects, considering human and social development and expanding the **educational, exchange and research opportunities** promoting a responsible attitude and to develop capacities, skills and values in **future generations of professionals and citizens**,

Citizen science, in both its narrower and broader meanings has started to emerge as a crucial component of these projects, enabling different forms of public participation in scientific research and social innovation

Politecnico di Milano – The Off Campus initiative

OFF CAMPUS is an initiative promoted with the aim of strengthening the presence of Politecnico in the city of Milan. The underlying concept is that of a more engaged University, targeting social challenges and closer to neighbourhoods and communities.

The initiative was launched in 2018 and the first Off Campus space was opened in the **San Siro** neighbourhood in April 2019, followed by new spaces in the **Nolo** district (September 2020), in the **San Vittore** detention centre (October 2022) and in the former farmhouse **Cascina Nosedo** (December 2022).





Three projects working on:

- Cleaner water cycles and phytoremediation
- Circular economy and the upcycling of materials produced in local activities (micro-crafts, proximity agriculture)
- The study and proposal of new projects based on traditional irrigation models

Looking at projects working in this periurban context, it is possible to

- investigate the relationships between university public engagement initiatives and citizen science
- propose a critical interpretation of the possibilities, as well as the obstacles and limits of citizen science initiatives at urban neighbourhood level.

First reflections emerging from project reviews:

- Extensive **involvement of citizens and local stakeholder** as **providers of situated knowledge**, in order to improve the quality and adaptiveness of research projects
- Direct involvement of **schools**, both for general dissemination purposes, and to train teachers and pupils in **basic analytical techniques**