

Vision, goals and management of the Living Lab



Vision for the Living Lab

Mirafiori Sud connected through nature! ProGIreg contributing to revitalize a postindustrial district by experimenting with nature-based solutions (NBS) that are aligned with social needs and supported by local civic engagement.

Living Lab Turin overview

Turin is characterized by typical features of a postindustrial city that has turned from an (almost) exclusively industrial centre to an innovative city based on culture and services. Deindustrialisation of the core of the local industrial manufacturing sites has resulted in areas being emptied, disused or abandoned.

The Living Lab in Turin is located in Mirafiori Sud, a post-industrial district that witnessed remarkable growth during the 50s-60s thanks to the car industry (especially FCA). The industrial crisis in the 80s-90s led to the progressive population decline and ageing in Mirafiori Sud district, and the entire city of Turin. Mirafiori Sud is a suburb with poor quality urban environments (neglected green and grey infrastructures) and social issues such as social segregation, poverty and safety problems.

The Mirafiori district has weaknesses and great opportunities that can play a pivotal role in transforming the area with successful implementations of several NBS. Key features of the Living Lab can be summarized as follows:

- The district is characterized both by strong community bonds, however, growing worrisome dynamics are threatening this social cohesion;
- The presence of community foundations and citizen associations help to avoid further degradation of the social fabric at local level;
- Low population density and high degree of empty spaces left by the industrial downturn affects interactions, communication and connections among citizens, companies and associations.
- The district suffers from higher incidence of different diseases (compared to city level): in particular, cardio and respiratory diseases, chronic and mental stress. There is also a significant presence of single elderly people with psychic discomforts.
- Severe youth unemployment rate (over 50%) and generally low education levels.
- Low number of local businesses with the majority of the labour force employed in the service sector.
- Both low real estate values and high availability of empty accommodations could become a pull factor for attracting new citizens to the district.



Challenges and Goals

Given the district's challenges, some of the weaknesses and necessities have been turned into opportunities and used as strategic starting points for several NBS implementations. The NBS implementations in the Living Lab of the proGlreg research project pursue the goal of addressing social, economic and urban problems. The Living Lab approach entails testing specific NBS in real life conditions by involving diverse stakeholders including citizens at an early stage in co-design and co-implementation processes (based on the quadruple helix approach), aimed at boosting collaborative and long-lasting engagement including vulnerable and marginalised groups.

ProGlreg uses nature for renewal for regenerating green infrastructure and land accessibility by:

- Creating green corridors by connecting alreadyexisting cycle paths,
- Turning empty buildings into green infrastructures, i.e. green roofs and walls
- Transforming brownfields into community gardens,
- Using regenerated soil (NBS 2 New Soil), to give new life to poor and non-fertile land;
- Experimenting with collective farming practices as a tool for urban regeneration and social inclusion in several NBS 3 interventions:
- Involving educational institutions and residents to experiment with horticultural practices,

 Designing, managing and maintaining green areas (green infrastructure) shared with local businesses, associations and citizens

The long-term objective is to disseminate and replicate these solutions and practices in other areas of Turin, national and international cities, identifying business models and transversal planning tools whose added value lies in the integrated and shared management of green infrastructure systems.

Living Lab Management

Given the high number of 17 implemented NBS in the Living Lab (out of eight proGlreg NBS - fig. 1) and the complexity and necessary expertise for specific NBS required the involvement of a large number of local stakeholders beyond the official local proGlreg partners. The initial plenary meeting with all relevant stakeholders revealed the need for creating three "boards" with the purpose of managing the planning activities within proGlreg. Each board designated a proGlreg partner as coordinator of the board's activities.

To guarantee a shared planning process among local partners, a "core team" ("cabina di regia") was formed with the City of Turin (European Funds and Innovation Dept.) acting as overall coordinator following a "variable geometry" principle, where local partners are invited to each meeting depending on the needs and issues to be discussed.

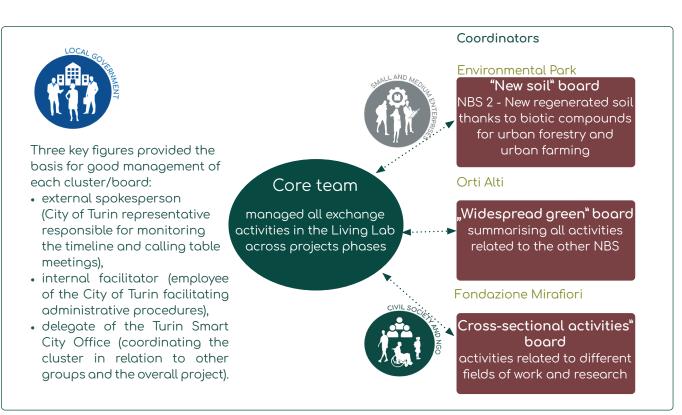
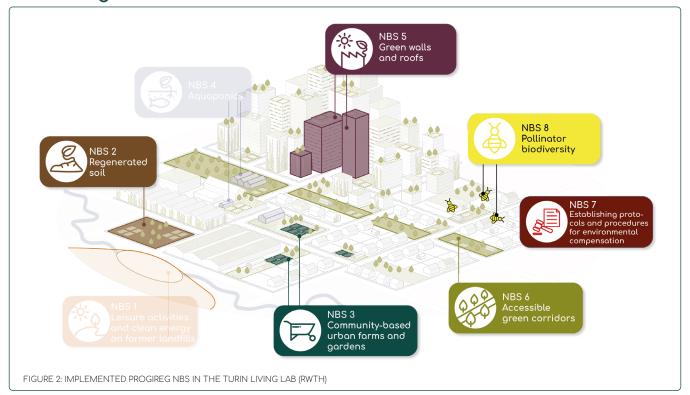


FIGURE 1: MANAGEMENT STRUCTURE IN THE LIVING LAB TURIN



Co-design activities



The co-design and pre-implementation activities represented first and crucial steps in the Living Lab allowing to:

- Inform and involve stakeholders and citizen
- Resolve administrative barriers to start working operatively in the field

In most cases, the aim of the co-design process is to achieve participant buy-in of NBS to create identification and foster the development of finding ways to safeguard the NBS, social awareness and citizen ownership. Given each NBS implemented is context-specific, a flexible approach to matching context-based technical issues is required. This is also reflected in the degree of engagement varied from simple information to active participation in construction and maintenance. Common methodological steps of the co-design approach are outlined as follows:

- Stakeholder mapping together with social analysis of beneficiaries to better understand the social composition of the area and identify relevant target groups
- Design and implementation of engagement activities by field experts, stakeholders with sound experience and deep knowledge of the territory
- Documentation, i.e. guidelines, dissemination materials, event documentation to support and

communicate the engagement process

The Living Lab Turin implemented 17 different NBS (fig. 2 and 3). Major achievements and challenges across NBS are highlighted below:

- The active involvement of citizens in NBS activities is essential to make the installations ,alive and useful' and to avoid acts of vandalism - citizen co-ownership.
- The implementation of the community garden Orti Generali has attracted gardeners from different districts of Turin, thus bringing attention to an area that is usually underrated within the city of Turin.
- COVID-19 related restrictions caused severe delays by halting most co-design, implementation and maintenance activities. Despite this, the different NBS teams involved managed to find innovative ways to keep in contact with stakeholders and beneficiaries by organising and managing online activities.
- The co-implementation process faced numerous complex situations due to bureaucratic obstacles. ProGlreg offered an opportunity to get a better understanding of how to deal with public procedures, thus innovating regulations with new agreement pacts that foster collaboration between the public and private sector.

Outcomes, challenges and lessons learnt



It is noteworthy to highlight some significant results and criticism of co-design and engagement activities for specific NBS:



For NBS New Soil, the co-design activities included building and running a technical implementation board and to formulate the compostion of the new soil. In addition, analysing respective regulations on how to frame the request to the authorization bodies, and carry out all chemical analysis to support the decision.

Mirafiori Castle's ruins recovery and new planting

Co-design activities focused on ordinary and extraordinary maintenance works preparatory for the NBS set-up (information panel and the bulletin board). This generated a deep historical knowledge of the area, supporting the proper clearing of the ruins.



The gardeners involved in NBS Orti Generali cooperate to maintain the gardens, the kiosk and other common areas. This is strengthening civic engagement. Stakeholders benefit from training courses about organic agriculture, permaculture, pruning and composting. It also offers collateral activities linked to environmental topics such as apiculture, painting with dyeing plants, food preservation. Orti Generali aims at social inclusiveness: Establishing a differentiated charge system to ensure access to those who are economically disadvantaged. The NBS receive positive feedback from disadvantaged people engaged in horticultural activities and farmyard animals.

Didactic gardens in schools, Micro vegetable gardens and Green wall indoor at school

The NBS have been co-designed and co-implemented with teachers and pupils; deciding the layout of the garden boxes, e.g. number and dimensions of the containers, positioning of the boxes in the school premises, types of vegetables to be cultivated, involvement of families in the management of the gardens. Relatives participating in co-design workshops welcomed the approach and offered their availability to maintain the gardens.

Gardens around the houses

The project was initially co-designed through activities (cognitive mapping, collages) that allowed detecting participants' expectations and predispositions of urban horticulture activity.



The NBS implemented in the WOW space (Pollinator friendly gardens and New green roof) developed a community engagement process aimed at building a social community: from communication plan to event and social entertainment plan of the space, organization of training activities for the management group. The process ended with signing a formal collaboration

pact with the City administration to ensure long-term maintenance for the implemented NBS and the whole area around the WOW building.

Butterfly gardens for disadvantaged people developed the first Italian Citizen Science project. Citizen scientists were users of Mental Health Day Centres. Accompanied by staff of the zoology laboratory of DBIOS (UNITO), users set up a green area with food and nectar plants. In addition, the users have been engaged in regularly surveys of butterflies in the green area. Their active participation in project knowledge transfer and awareness raising is noteworthy ("Butterflies go to school").



Living Lab results and outlook



FIGURE 3: LIVING LAB MAP MIRAFIORI SUD. TURIN

Achievements and lessons learnt

ProGlreg has contributed to achieving the goal of fostering the Living Lab's urban regeneration efforts by improving land accessibility and social inclusion in the Mirafiori Sud district while supporting innovative models of green economy.

The methodology developed in the Living Lab follows a broad green infrastructure approach based on the idea to carry out multiple NBS interventions of limited scale but wide-spread throughout the urban regeneration area, creating a green infrastructure network within the large and fragmented district (see Living Lab map for NBS interventions). The implemented strategy also pursues the activation of abandoned areas and spaces: small interventions serve as showcases to revive the interest of the community and politicians in the area.

The planning and co-design processes addressed the district's stark spatial east-west divide regarding differences in the socio-economic make-up and infrastructure distribution. This led to shifting the focus to the more neglected western part.

ProGlreg has contributed to regenerating and transforming the Living Lab in the Mirafiori Sud district:

- by disseminating ideas and examples of good
- practice as seeds for future developments;
- by contributing to build a new and green identity of the district,
- by testing key innovation features in implementing NBS in urban context,
- by building strong partnerships and synergies with local key actors from public and private sectors as the basis for greater and lasting NBS benefits over time.

Further positive outcomes include strengthening education, e.g. in local schools, improved social inclusion and reinforcement of social links.

On the administrative level, proGlreg activities have supported the establishment of a common goods regulations that is critical for specific NBS.

The following table provides an overview of how proGIreg and the NBS implementations are supporting and impacting the Living Lab's transformation of its post-industrial legacy:



OVERVIEW OF CHALLENGES VS. ACHIEVEMENTS AND IMPACT OF NBS IMPLEMENTATIONS IN THE LIVING LAB TURIN

Mirafiori weaknesses	turned into opportunities	Impact of proGlreg
Strong community bonds but also dynamics threatening social cohesion.	Involving embedded community foundations and citizens' associations to facilitate communication between stakeholders while fostering inclusion of disadvantaged social groups (social housing inhabitants, people with disabilities)	High
A higher incidence of different diseases compared to city level (cardio and respiratory diseases, chronic and mental stress) and elderly with psychic discomforts.	Harnessing the existing assets such as the green belt running along the Sangone river district border, proGlreg has contributed to creating quality green spaces and green corridors (community gardens, cycle paths etc.)	High
Severe youth unemployment rate (over 50%) and generally low education level.	Supported by community NGOs, educational training offers on urban gardening were stepped up in several sites incl. schools and community gardens	High
Low population density and high degree of empty post-industrial sites affects interactions, communication and connections among citizens, companies and associations.	Green corridors and tourist-oriented infrastructure as well green roofs and walls boost the liveability and thus the attractiveness of the area, given low real estate values and availability of accommodations	Medium to high
Low numbers of local businesses with the majority of the labour force employed in the service sector.	Supporting the creation of new entrepreneurship and new green jobs, e.g. green roof and wall or aquaponics professionals	Medium

Outlook

Strong evidence of multiple NBS benefits generated by proGlreg's Living Lab activities has fed the debate of an integrated urban planning approach with NBS and GI in the city of Turin.

The municipality's proGlreg team has built strong and durable connections between partners, residents and institutions in order to guarantee the continuity of NBS implementations. Initiated good practices can be replicated in other parts of Turin and other cities: In fact, a second Living Lab in the northern part of Turin is currently under study.

Moreover, the city of Turin is building a strategy for the revitalization of abandoned areas and spaces: small but integrated interventions together with local partners and citizen engagement helped regaining community and politicians' interest.

For instance, the WOW building owned by the municipality was abandoned for many years

but has been transformed into a lively area now. Finalising this intervention will require significant resources. However, proGlreg has initiated first and crucial steps for its transformation.

ProGlreg has already served as an attractor of additional resources and urban development projects in the Living Lab area. The results of proGlreg, both in terms of approach (Living Lab) and NBS centred projects are being replicated in other Horizon 2020 European funded projects under the research and innovation programme in Turin:

- > <u>CONEXUS</u> (Co-Producing Nature-Based Solutions And Restored Ecosystems: Transdisciplinary Nexus For Urban Sustainability)
- > <u>FUSILLI</u> (Fostering the Urban food System Transformation through Innovative Living Labs Implementation)

In addition, elaborating urban green plans (<u>Green Infrastructure plan</u> - in Italian).









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