

A group of people are walking away from the camera through a lush, green field. In the background, a city skyline is visible under a clear blue sky. The people are dressed in casual summer attire, including a yellow shirt, a floral dress, and a white hat. One person is holding a map or a large sheet of paper. The overall scene suggests a community walk or a field study.

# **proGInreg NBS implementation Turin URBAN GreenUP Webinar**

Laura Ribotta, City of Torino

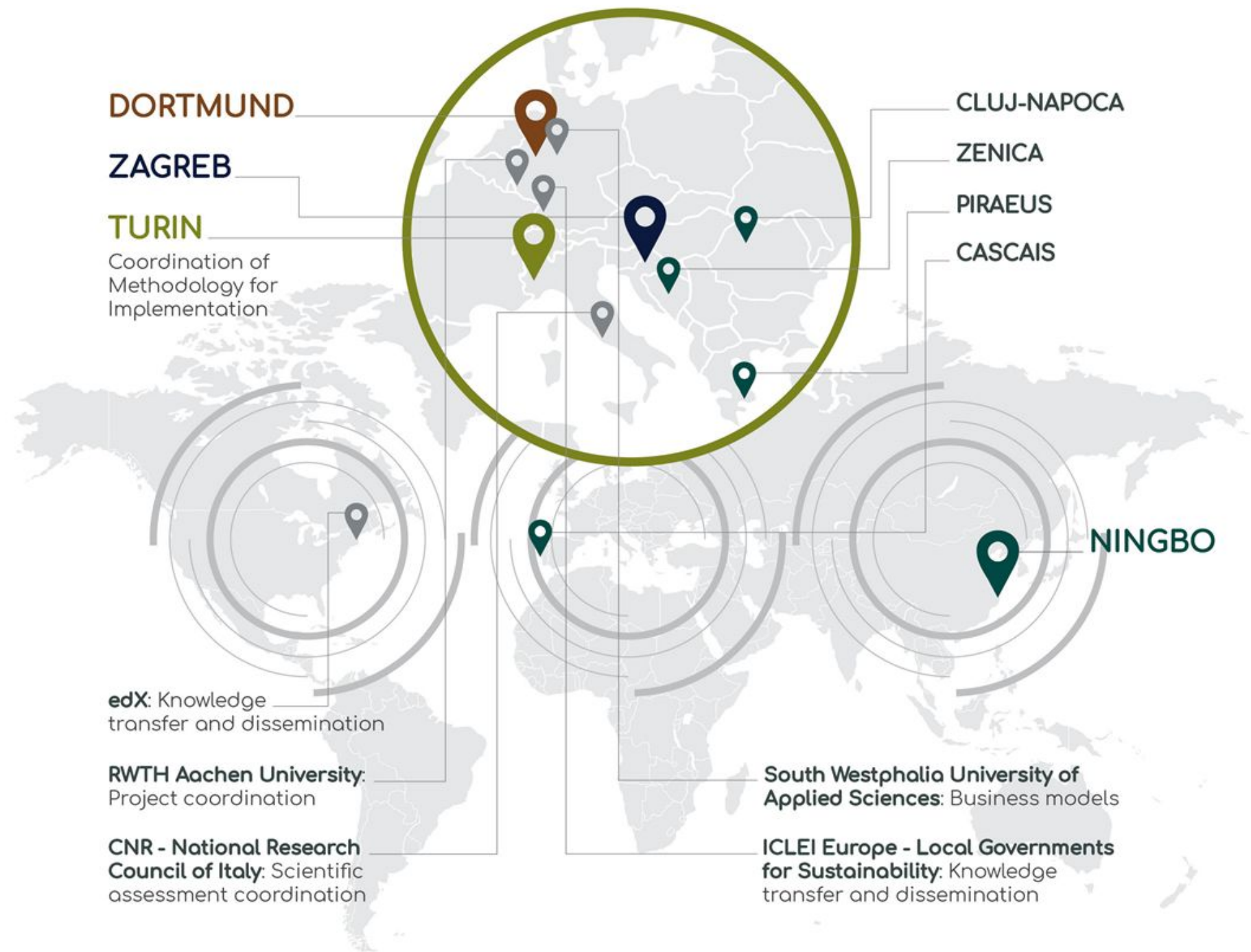
# Project aims

- Nature-based solutions for post-industrial regeneration
- Front-runner cities implement Living Labs together with local citizens, research institutions, businesses and NGOs
- Follower cities replicate the nature-based solutions
- Spread awareness of the potential of nature-based solutions

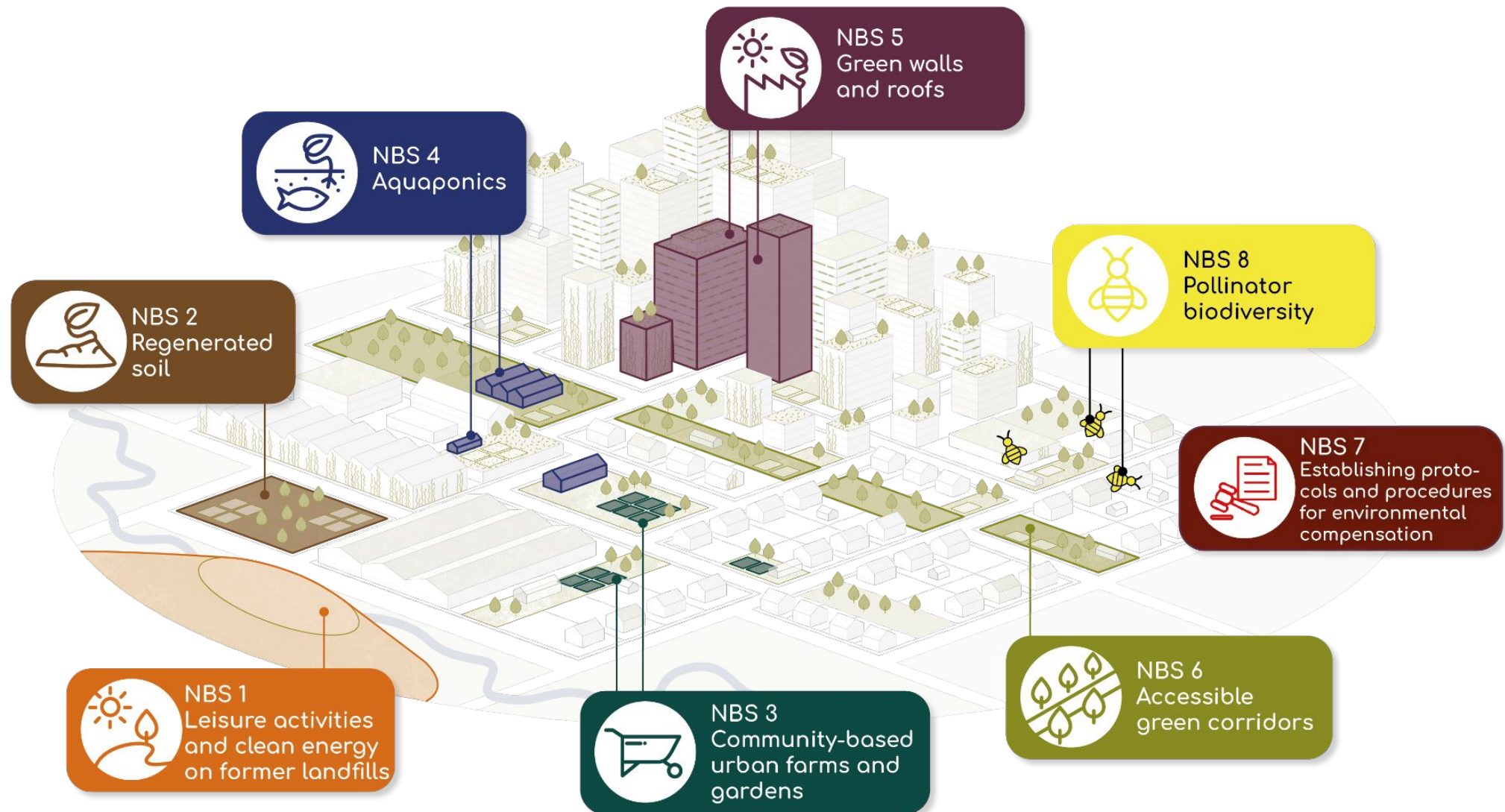
- 8 cities
- 34 partners
- 8 nature-based solutions



# Project overview



# NBS



Mirafiori Sud Living Lab Torino | Mirafiori Sud Living Lab Turin

Mappa del Living Lab | Living Lab map

**Obiettivi e vision generale del LL**  
Living Lab goals and overall vision

Rigenerare e valorizzare le aree insicure abbandonate del quartiere di Mirafiori coinvolgendo i cittadini nella progettazione e gestione di spazi verdi pubblici.

To regenerate and enhance the abandoned or unsafe areas of the Mirafiori district by involving citizens in the design and management of public green spaces.

Promuovere nuove professionalità e modelli di business basati sulle soluzioni naturali.

To promote new professionalism and business models based on natural solutions.

Valorizzare i benefici multipli (sociali, ecologici, economici e per la salute) delle soluzioni naturali inserendole negli strumenti di pianificazione e rigenerazione urbana.

To demonstrate the multiple benefits (social, ecological, economic and health) of nature-based solutions as an integral tool of urban planning and regeneration.

**Dettagli sulla NBS 2 | Details on NBS 2**

NEW REGENERATED SOIL THANKS TO BIOTIC COMPOUNDS FOR URBAN FORESTRY AND URBAN FARMING



Produzione di nuovo suolo rigenerato nel Parco Sangone.

Description: Creation of an area of "urban forest" along the banks of the Sangone through the use of regenerated soil (New Soil), based on aggregates and compost from ORSU and innovative biostimulants.

Partners: Dual, Envipark (Acce as third party), Unito (DISAFA e Dip. Chimica), Città di Torino.




New Soil production in Sangone Park.

Description: Creation of an area of "urban forest" along the banks of the Sangone through the use of regenerated soil (New Soil), based on aggregates and compost from ORSU and innovative biostimulants.

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**Dettagli sulla NBS 3 | Details on NBS 3**


COMMUNITY-BASED URBAN FARMS AND GARDENING ON POST-INDUSTRIAL SITES



Recupero rovine Castello di Mirafiori.

Description: Transformation of post-industrial site for valorization area of interest historical and environmental.


Partner: Orti Generali - Comitato Borgata Mirafiori



Castello di Mirafiori ruins recovery.

Description: Transformation of post-industrial site for valorization area of interest historical and environmental.


Partner: Orti Generali - Comitato Borgata Mirafiori



Orti Generali.

Description: Orti individuali e collettivi assegnati con contributo spese ai singoli cittadini, area didattica comune per attività formative e associative.


Partner: Orti Generali



Gardens in Cascina Piemonte (Orti Generali).

Description: Collective gardens related to individual citizens, common educational area for training and community activities.


Partner: Orti Generali



Giardini fioriti ai WOW.

Description: Giardino in cassone e antri.


Partners: Orti Alti, Fondazione Mirafiori, Miravolante, Città di Torino.



Pollinator friendly gardens at WOW.

Description: Box gardens and beehives.


Partners: Orti Alti, Fondazione Mirafiori, Miravolante, Città di Torino.



Orto a scuola in cassone.

Description: Realizzazione o integrazione di orti didattici in cassone e di laboratori scientifici rivolti allo scuola primaria e superiore sui temi di prodigra.


Partners: Fondazione Mirafiori, Miravolante, Unito (DBios e DISAFA).



School garden in box.

Description: Realization or integration of educational gardens and scientific laboratories aimed at primary and high schools on the topics of prodigra.


Partners: Fondazione Mirafiori, Miravolante, Unito (DBios e DISAFA).



Ortomobile.

Description: Fornitura di uno stock di cassette per la realizzazione di "micro-orti" e composte per le scuole e corso pratico per gli insegnanti.


Partners: Ite, Unito (DBios e DISAFA).



Portable school gardens.

Description: Supply of a stock of wood cassettes for the realization of "micro-garden" and composts for schools and practical course for teachers.


Partners: Ite, Unito (DBios e DISAFA).



Orti comunitari a scuola.

Description: Orto didattico in cassone.


Partners: Ite, Liceo Scientifico Primo Levi, Unito (DBios e DISAFA).



Community school gardens.

Description: Vegetable garden in wood boxes (raised bed).


Partners: Ite, Liceo Scientifico Primo Levi, Unito (DBios e DISAFA).



Orto tra le case.

Description: Posa di cassoni fissi per orticoltura urbana.

Partner: Fond. Mirafiori, Miravolante.



Gardens between houses.

Description: Placing of fixed containers for urban horticulture.

Partners: Fond. Mirafiori, Miravolante.

**Dettagli sulla NBS 4 | Details on NBS 4**


AQUAPONICS AS SOIL-LESS AGRICULTURE FOR POLLUTED SITES



Test di acquaponica.

Description: Sistema di acquaponica su piccola scala, progettato dalla comunità, è installato in un sito pubblico attualmente abbandonato.

Partner: Città di Torino.




Aquaponics test.

Description: Small-scale community designed aquaponics system, to be set up on an abandoned public site.

Partner: City of Turin.

**Dettagli sulla NBS 5 | Details on NBS 5**


CARILARY GLON WALLS AND ROOFS



Nuovo tetto verde Casa Nel Parco.

Description: Ripristino dell'accesso del tetto verde di Casa Nel Parco.


Partner coinvolto: Città di Torino, Fondazione Mirafiori.



New green roof at Casa Nel Parco.

Description: Restoration of the Casa nel Parco green roof access.


Partners: City of Turin, Fondazione Mirafiori.



Parete verde a scuola.

Description: Parete indoor consiste in una vaschetta estradita. Progettazione partecipata e co-gestione per la cura delle pareti con coinvolgimento di studenti e personale scolastico.


Partners: Città di Torino, Politecnico di Torino (DAD e DIAT).



Green Wall at school.

Description: Green indoor wall with removable tray system. Participatory processes and co-management for the maintenance of the green walls with the students and the school staff.


Partners: City of Turin, Politecnico di Torino (DAD and DIAT).



Parete verde dormitorio senzatezzo.

Description: Parete verde outgarden esterna, con vaschette in mobiliati e cassette. Progettazione partecipata e co-gestione per la cura delle pareti con coinvolgimento degli utenti.


Partners: Città di Torino, Politecnico di Torino (DAD e DIAT).



Green wall at homeless shelter.

Description: Outdoor self-supporting green wall, with removable trays and felt pockets. Participatory design process/co-management for the maintenance together with the users.


Partners: City of Turin, Politecnico di Torino (DAD and DIAT).



Tetto verde al WOW.

Description: Realizzazione di un tetto verde estensivo sul edificio WOW.

Partners: OrtiAlti, Città di Torino.



Green roof at WOW building.

Description: Realization of an extensive green roof WOW building.

Partners: OrtiAlti, City of Turin.

**Dettagli sulla NBS 6 | Details on NBS 6**

ACCESSIBLE GREEN CORRIDORS



Corridoio verde.

Description: Realizzazione di un percorso verde e polinator friendly.

Partner: Città di Torino.



Green corridor.

Description: Creation of a green and polinator friendly course.

Partner: City of Turin.

**Dettagli sulla NBS 6 | Details on NBS 6**

ACCESSIBLE GREEN CORRIDORS



Valorizzazione del patrimonio naturalistico nel corridoio verde.

Description: Potenziamento della fruizione dell'area naturalistica 6.1 e promozione l'utilizzo della pista ciclabile tramite segnaletica verticale e arredo urbano.

Partner: Fondazione Mirafiori



Local natural heritage enhancement in green corridor.

Description: Enhancement of the naturalistic area 6.1 and promotion of the cycling path through the creation of vertical signage and street furniture.

Partner: Fondazione Mirafiori

**Dettagli sulla NBS 7 | Details on NBS 7**

LOCAL ENVIRONMENTAL COMPENSATION PROCESSES



Partnership strategico pubblico-privato per il verde in città.

Description: Identificare, raccogliere e mostrare strumenti e opportunità concrete per permettere all'amministrazione di migliorare il patrimonio verde della città grazie alla collaborazione pubblico-privata.

Partner: Città di Torino.




Strategic public-private partnership for greening the City.

Description: Identify, collect and display tools and concrete opportunities in order to allow the Administration to improve the green assets of the City through public private collaboration.

Partner: City of Turin.

**Dettagli sulla NBS 8 | Details on NBS 8**


POLLINATOR BIODIVERSITY IMPROVEMENT ACTIVITIES AND CITIZEN SCIENCE PROJECT



Giardino farfalla nelle scuole e presso centri per disabili mentali.

Description: Realizzazione di un corso e di varie attività formative sulla vita delle farfalle. Supporto alla realizzazione del giardino delle farfalle. Biomonitoraggio con il metodo del transecto.

Partners: Unito (DBios) e Unito (DISAFA).



Butterfly gardens in schools and for disadvantaged people.

Description: Realization of training activities on the life of butterflies. Supporting the creation of the butterfly garden. Biomonitoring with the transect method.

Partners: Unito (DBios) and Unito (DISAFA).

**Partner locali proGREG (e altri importanti stakeholders)**

Local proGREG partners (and other important stakeholders)



Update: MAY, 2021



**Legenda | Legend**







Soluzioni nature based  
Nature based solutions

-  Rigenerazione di suolo  
NBS 2: Regenerating soil.
-  Orticultura di comunità  
NBS 3: Community urban gardening and farming
-  Acquaponica  
NBS 4: Aquaponics
-  Tetti verdi e verde verticale  
NBS 5: Green roofs and vertical gardens
-  Migliorare l'accessibilità ai corridoi verdi  
NBS 6: Improving accessibility to green corridors
-  Processi di compensazione ambientale  
NBS 7: ICT Tools
-  Insetti impollinatori e biodiversità  
NBS 8: Pollinator biodiversity

**Stato di implementazione**  
Implementation status

-  Realizzato  
implemented
-  In corso  
in progress
-  Programmato  
in planning

**Legenda dei colori**  
Colour palette

-  Parchi/aree verdi  
parks/green spaces
-  Zone boschive  
Forest
-  Fiumi/laghi  
waterways/lakes
-  Costruito  
built up areas
-  Aree industriali  
industrial areas
-  Confini del Living Lab  
Living Lab area boundary

Scale: 1:10000

Map by Politecnico di Torino,  
Dep. Architecture and Design

Productive Green Infrastructure for  
post-industrial urban regeneration  
(proGREG)  
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Website: [www.proGREG.eu](http://www.proGREG.eu)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 776528.

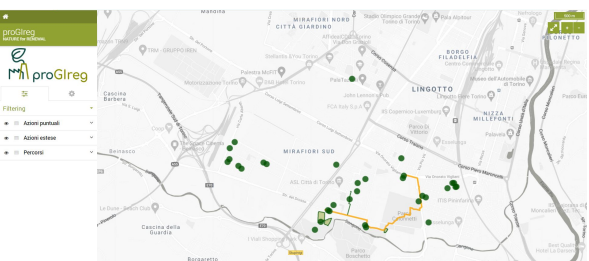
This work was financially supported by the National Key Research and Development Program of China (2017YFC0109003).



Virtual tour:  
9 steps all around our LL



Web gis map



# NBS2: New soil production by Sangone Park



## Description

Creation of an area of "urban forest" along the banks of the Sangone river through the use of regenerated soil (**New Soil**), based on **excavated material** with the addition of **compost** from FORSU, **zeolites** and innovative **biostimulants**.



# NBS 3.1: Castello di Mirafiori ruins recovery



## Description

Landscape transformation, through new plants and signposting, to enhance the **area of historical-environmental interest** (green area adjacent to the ruins of the Castle of Mirafiori and the altar inside the area of the Bela Rosin Mausoleum).



## NBS 3.2: Gardens in Cascina Piemonte (Orti Generali)



### Description

Collective gardens rented to individual citizens, **common educational area** for training and community activities. **160 gardens** of different charges and sizes have been realized and **330 trees planted**. Gardens are assigned to private citizens, families or collectives, with lower charges for people under 35 and for economically disadvantaged people.



# NBS 3.3: Pollinator friendly gardens at WOW

## Description

**Orto wow** is composed of garden boxes with aromatic plants and other melliferous plants in the courtyard of an abandoned public building.

**4 local NGOs** signed a “**pact of collaboration**” with the city to manage the area.



## NBS 3.4: School garden in box



### Description

By establishing **vegetable gardens** in all the **primary schools of Mirafiori**, plus two **kindergarten** and one **vocational school**, and providing educational activities focusing on the themes of sustainable agriculture, biodiversity and the NBS of proGlgreg, we aim at improving the science curriculum of the schools, increase their attractiveness and raise awareness of environmental sustainability, NBS and how they can improve life quality in the cities.



## NBS 3.5-6: Portable school gardens- Community school gardens



### Description

The urban laboratory “OrtoMobile” promote by ITER - City of Turin that has as its common thread "micro garden in box" interpreted as a unit minimum of "Natural Based Solution" easy to implement for all ages, with high degrees of socialization, both in the classroom and at home, with considerable potential for composition that enables the realization of simple and effective installations of indoor and outdoor areas in the schools.



## NBS 3.7: Gardens between houses

### Description

The action consist in the installation of wooden boxes for urban horticulture on public space in the South Mirafiori district.



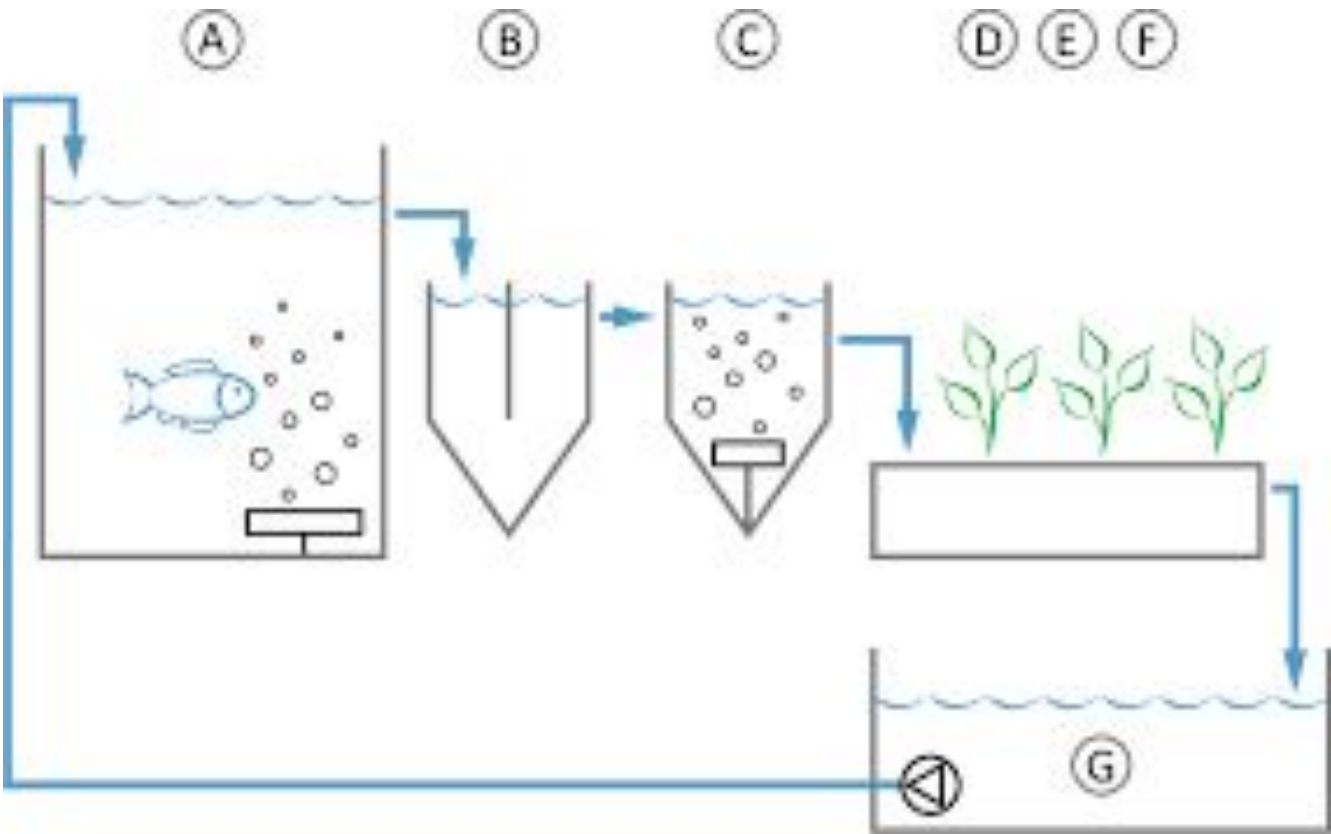
# NBS 4: Aquaponic test



## Description

Testing in real conditions innovative solutions in the field of technology called aquaponics, in order to assess the potential access and market sustainability as well as the related positive effects on the communities of reference.

The city launched a call, 2 projects are starting.



## NBS 5.1: New green roof at Casa nel Parco



### Description

New Access to Green Roof on top of “Casa del Parco”: realization of the physical access and the improvement of the already existing green roof at Casa del Parco, with the aim to improve its use by citizens, even disabled and aged people. The new access to the green roof at Casa del Parco will allow to use this NBS by all for recreational activities.

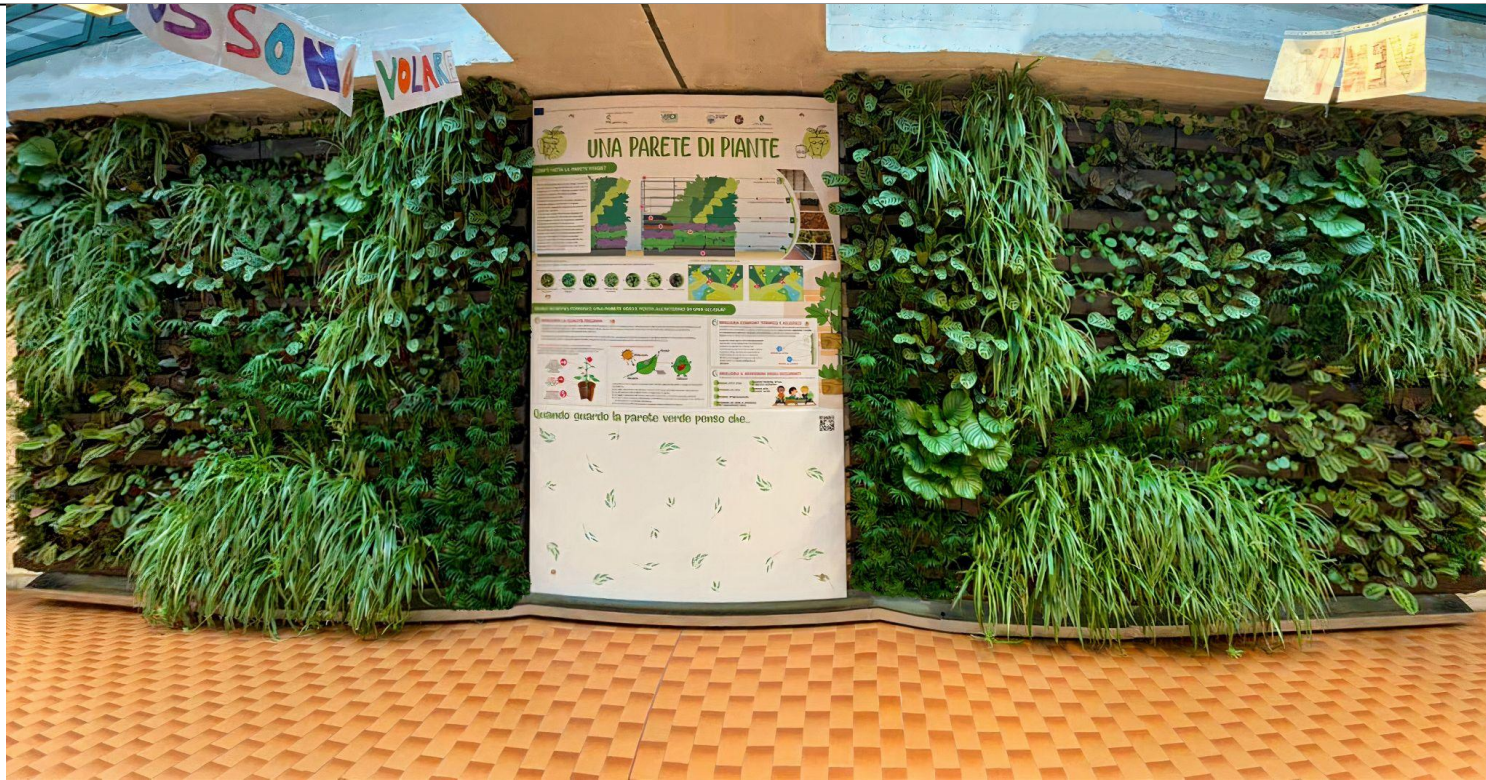


## NBS 5.2: Green Wall at school (indoor)

### Description

Green wall with dimensions of 20 square meters (school indoor) It will be positioned at a height between 0 and 3 m above the ground floor in a hallway corridor with a large roof-window.

The botanical choice of the indoor wall will instead be agreed with the project group of POLITO.



## NBS 5.3: Green wall at homeless shelter (outdoor)

### Description

Green wall mq 80 (outdoor made with self-supporting structure compared to the anchor wall) in a homeless dormitory. The botanical characteristics of these small seedlings can be chosen by the successful bidder according to the nursery experience gained, considering the aesthetic and chromatic elements to be obtained with the green wall, on the one hand, and on the other hand identifying nursery material able to attract pollinating insects (bees, bumblebees and butterflies).



## NBS 5.4: New green roof at WOW



### Description

The project concerns the realization of an extensive green roof on a public building, currently abandoned. The green roof is realized using the green roof technology supplied by Harpo Group, composed by layered materials: antiroot waterproofing, water retention felt, drainage, storage and ventilation elements, filter sheet and 14 cm of substrate, produced by Harpo specifically for green roofs, mainly made by mineral-based material (volcanic lapillus, pumice).



## NBS 6.1: Green corridor

### Description

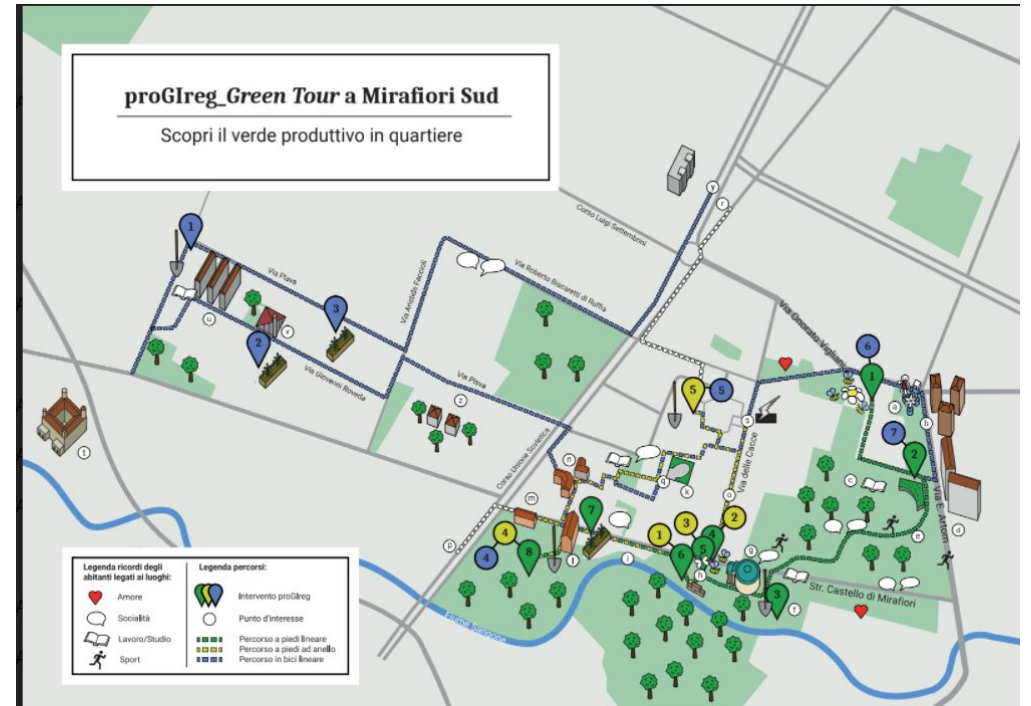
The project started from the need to carry out actions to involve citizens in safeguarding, maintenance and design of the territory aimed at the redevelopment of green areas within urban areas and to promote the composition of embryonic ecosystem services with positive reverberations both on human beings and on other species, whether animal or plant.





proGlg

The aim of this action is to facilitate access to the NBS implemented by proGReg, by placing landmarks/signs, providing information both on site and online, and organizing activities and visits for the residents.



## NBS 7: Strategic public-private partnership for greening the City



### Description

The aim of this NBS is to identify, collect and display tools and concrete opportunities in order to allow the Administration to improve the green assets of the City. The engagement of the private sector can boost the development of green areas by giving win-win solutions.



# NBS 8: Butterfly gardens in schools and for disadvantaged people.



## Description

### Citizen science project

The objective of the project is to **promote the presence of butterflies** in the city of Turin through the creation of a network of green areas which, with proper management and with the presence of suitable plants (food plants and nectar sources) for the life cycle, allows butterflies to cross the urban area, otherwise seen by these insects as a wall. The scientific aim of the project is accompanied by the social purpose, the **involvement of fragile people** with mental or physical disabilities, against isolation and social stigma.





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