

# Front-runner city Turin



# Turin: local Living Lab partners

## Municipality



## NGO



## SME / industry



## University

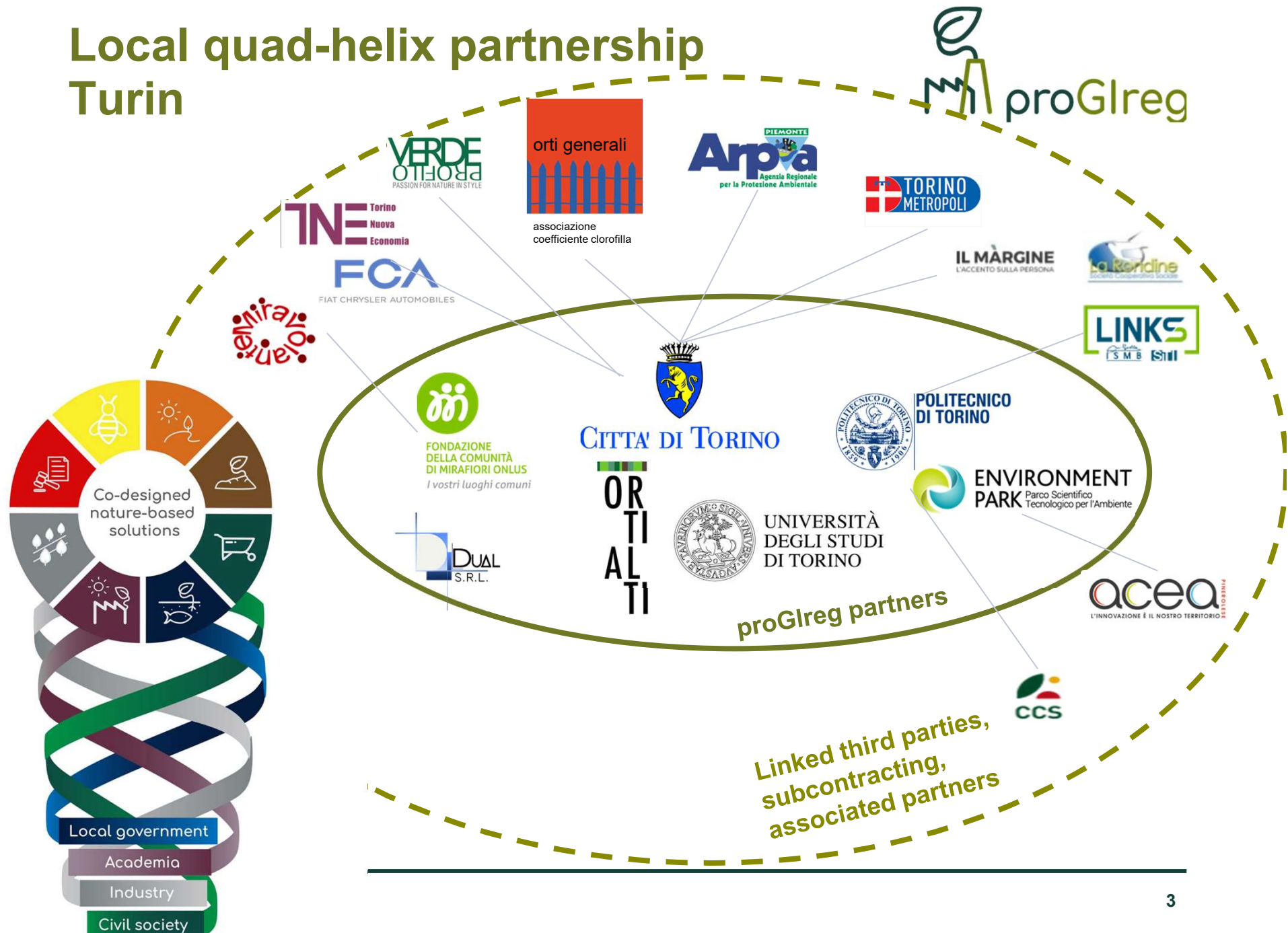


**POLITECNICO  
DI TORINO**



**UNIVERSITÀ  
DEGLI STUDI  
DI TORINO**

# Local quad-helix partnership Turin





## Seven NBS to be implemented in Turin



**NBS 1:** Renaturing landfill sites for leisure use and clean energy production



**NBS 2:** New regenerated soil from biotic compounds for urban forestry



**NBS 3:** Community-based urban farms and gardens on post-industrial sites



**NBS 4:** Aquaponics as soil-less agriculture for polluted sites



**NBS 5:** Green walls and roofs



**NBS 6:** Making post-industrial sites and river corridors accessible



**NBS 7:** Local environmental compensation processes



**NBS 8:** Pollinator biodiversity improvement and citizen science

# Co-Design process Turin







# First NBS implementations Turin

## NBS 2: New regenerated soil



soil from deep excavation from works in the city



zeolites



biostimulants with mycorrhizal fungi



compost from organic waste



"New Soil" test:  
no need to excavate soil from countryside to build a new park



*Circular Economy*

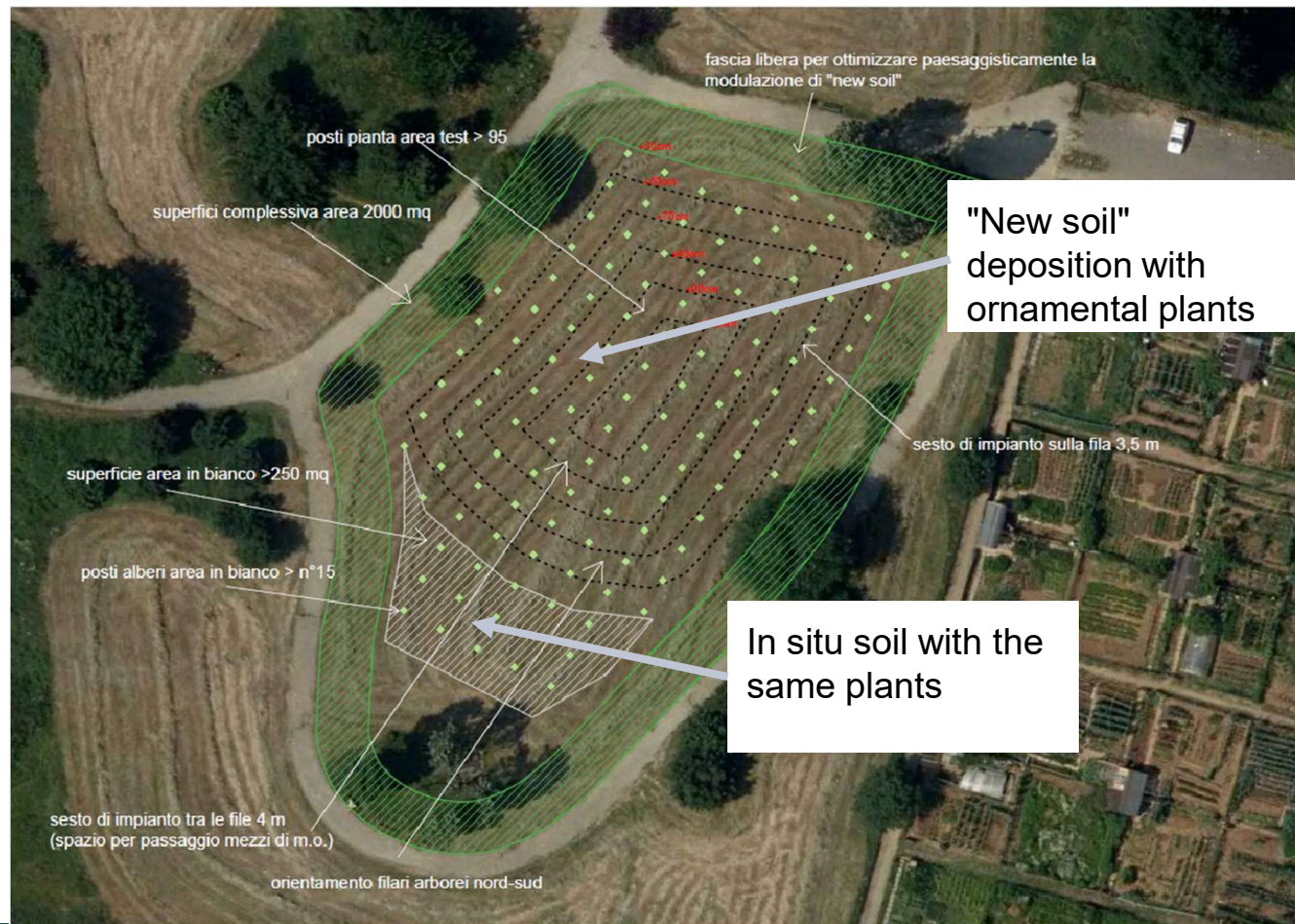




# First NBS implementations Turin



## NBS 2: New regenerated soil





# First NBS implementations Turin



## NBS 2: New regenerated soil

Dual opened the construction site in December, in March all tree will be planted. Unito and Envipark are accompanying the action.

- EXPERIMENTATION AGREEMENT (between City and Dual to do works on public land)- **signed!**
- Safety documentation:
  - Single Document for the Assessment of Interference Risks(DUVRI) - **signed!**
  - Security and coordination report - **signed!**
- To do: how to overcome administrative and regulatory barriers



# First NBS implementations Turin



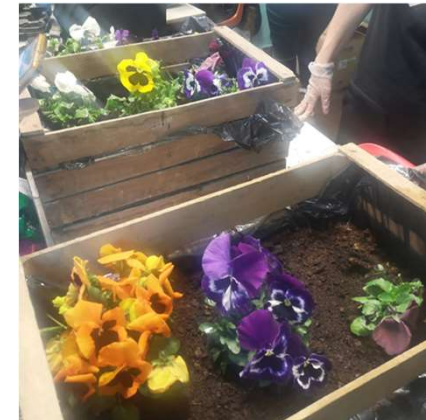
## NBS 3: Community-based urban farms and gardens



- didactic garden in wood boxes (raised bed), action guided by Fondazione Mirafiori, 8 schools. All the school community (teachers, custodians, parents, students) is involved, from autumn 2018, in codesign, realisation, maintenance.  $\frac{7}{8}$  realised.



- mobile micro garden in wood cassettes, action guided by Educational department of the city of Torino, 8 schools. First training meeting done on 12th of February 2020.





# First NBS implementations Turin



## NBS 3: Community-based urban farms and gardens



- ORTI GENERALI: **160 Collective gardens** are rented to individual citizens, allowing the presence of different people young and old, families and immigrants (waiting list with 50 people). Common educational area for training and association activities, also for vulnerable people like former drug addicts (realised). New trees in the area of ancient castle ruins (Autumn 2020), actions guided by Associazione Coefficiente Clorofilla (LTP of Torino City)
- vegetable garden among houses, action guided by Fondazione Mirafiori, 4 different places, 2 realised (with intellectually disabled and refugees), 2 to be realised in two different part of the district.



# First NBS implementations Turin



## NBS 3: Community-based urban farms and gardens



- pollinator friendly garden: garden in chest and beehives, action guided by Orti Alti, to be released.
- school-work alternation project in Primo Levi High School: gardening, green walls design, environmental monitoring, action guided by Educational department of Torino City in connection with Tool(s)mart project





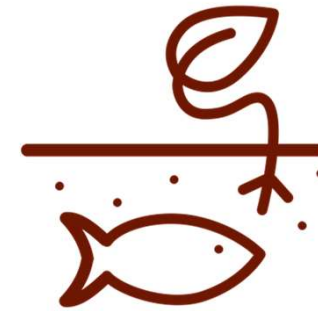
# First NBS implementations Turin



## NBS 4: Aquaponics

- Action to be confirmed, the City is studying an aquaponic greenhouse in the north of the city, funded by Torino Circular Economy City Lab:

<https://www.torinocitylab.com/en/urbanaquafarm>



# First NBS implementations Turin

## NBS 5: Green walls and roofs

- Green wall homeless dormitory: the city did a tender and identified a subcontractor, works will start in spring 2020
- Green wall at school: the city did a tender and identified a subcontractor, works will start in spring 2020





# First NBS implementations Turin

## NBS 5: Green walls and roofs

- restoration of the “casa del parco” green roof access, realised, action guided by City of Torino
- realization of an extensive green roof, March 2020, action guided by Orti Alti



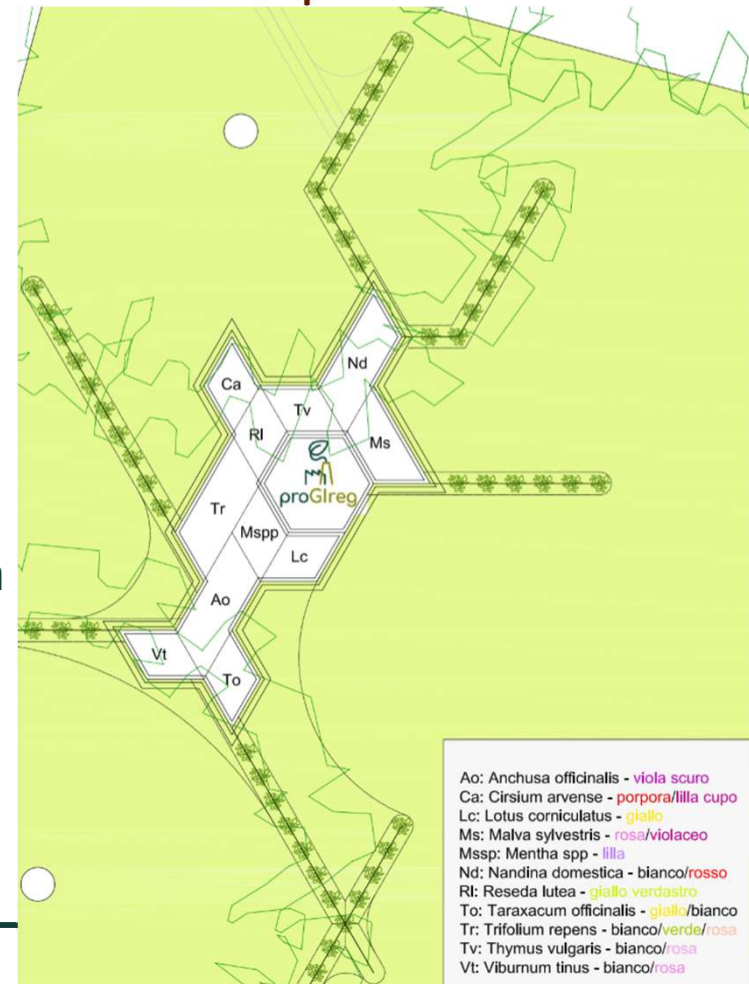
# First NBS implementations Turin



## NBS 6: Accessible green corridors



- Creation of a green and pollinator friendly pathway with flower bed, to do in 2020, action guided by the city of Torino
- Enhancement of the natural heritage: involvement action about the green corridor and signage, to do in 2020, action guided by Fondazione Mirafiori





## NBS 7: Local environmental compensation processes

- The city of Torino has started a path of private financing for public green works. With proGlg we want to expand the number and type of financeable works.  
First case study (at the administrative point now): unsealing school courtyard, grass instead of asphalt.



# First NBS implementations Turin



## NBS 8: Pollinator biodiversity

Mental  
health  
centre



Entomologists  
of the  
University of  
Turin



Training course for  
mentally disabled people  
on butterflies life and their  
monitoring

Citizen  
science  
project!



Vanessa del cardo (*Vanessa cardui*)



Famiglia: Ninfalidi

Ecologia: una o due generazioni all'anno

Piante nutritive:



BRUCO



CRISALIDE



CARPI  
SELVATICI



ORTICA



MALVA



ECHINUM  
VULGARE



Curiosità: è una specie migratoria, che trascorre l'inverno nelle aree più calde del Mediterraneo e Nord Africa per poi ritornare in Europa centrale in primavera.

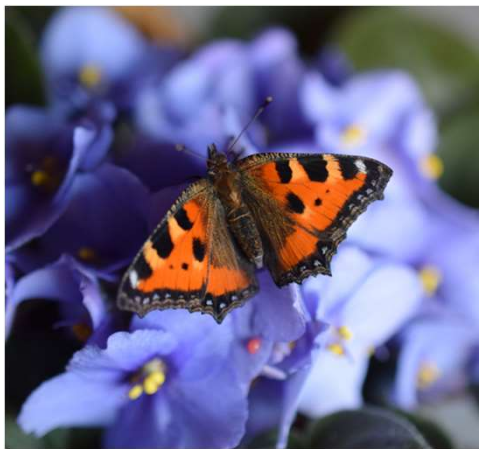


# First NBS implementations Turin

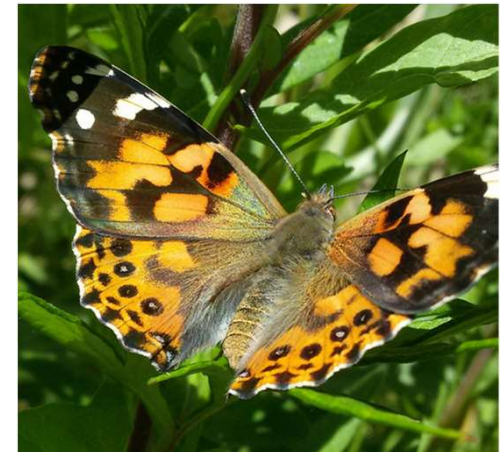


## NBS 8: Pollinator biodiversity

The project is a metaphor: like the butterflies are isolated in the city for the lack of pollinator friendly areas also mentally disabled are isolated into their centers.



The mentally disabled became science communicators and they will create gardens for butterflies in different neighborhood areas.



in 2020 and  
2021

social housing

refugees center

centre for alzheimer  
patients

secondary and pre-  
primaryschool



# First NBS implementations Turin



## NBS 8: Pollinator biodiversity

Pollinators are also honeybee! We have beehives in Orti Generali, we will have beehives close to pollinator garden, Unito will monitor honeybees and honey.

Unito helped all proG!reg actions in the choose of the plants to be more pollinator friendly and the City of Torino with Unito is evaluating how modify the mowing grass in order to improve pollinator presence.



# Challenges Turin



- Diffused approach to regeneration plan based on NBS
- Coordination of different partners and stakeholders
- Administrative barriers (public areas and private works)
- Involving citizens in managing NBS