



Transforming an urban vacant lot into an urban allotment garden

Contact: **Adrián Cabezas and Marc Montlleó** -
Barcelona Regional

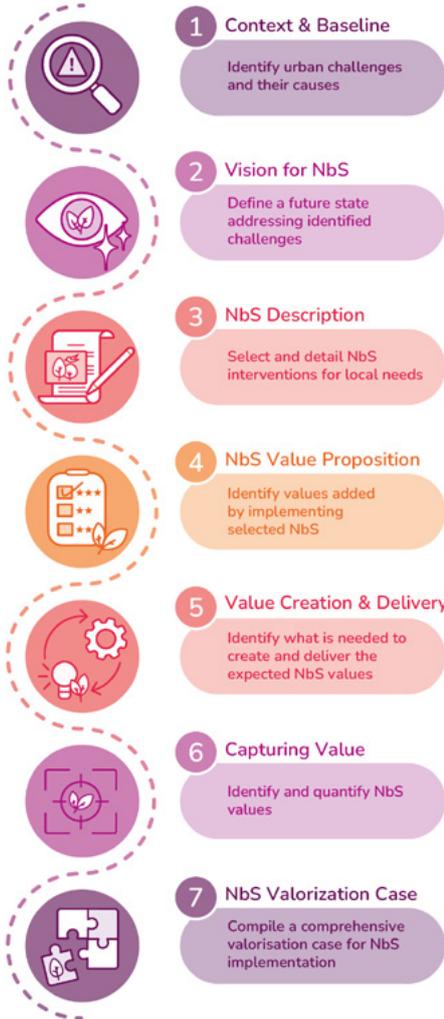
Task: **T5.3**

Location: **Barcelona, Spain**



Steps

Aim



Background (Step 1)

The Poble Nou neighborhood, located in the Sant Martí district, has an industrial heritage dating back to the early 20th Century. With a population of 34,100 people, the area's economic landscape predominantly comprises industrial and office spaces, occupying over half of its total area. The neighborhood has undergone significant transformations, witnessing the emergence of modern office complexes and hotels alongside the preservation of traditional residential zones and renovated historic industrial sites. Despite these gains, there are pressing concerns with urban socio-environmental challenges, like climate change, biodiversity loss, inadequate green spaces, escalating urban heat island effects, insufficient environmental services, deteriorating public health, social disparities, and the fragmentation of community bonds. Addressing these issues necessitated innovative solutions that harmonize with the neighborhood's needs and aspirations.

In this sense, Barcelona City Council, guided by various strategic plans, such as the Plan Natura 2021-2030, advanced several efforts to improve planning and the increasing of green infrastructures.

These efforts included promoting the active involvement of citizens in the conservation and improvement of urban nature. An example of strategic action from the Plan Natura is the “Hands on Green” program, which involves citizens and social entities in the promotion and conservation of biodiversity and the city’s green spaces. The transformation of empty urban lots is part of this program.

Core Vision Statement (Step 2)

By 2025, we aim to provide a common space where users and entities can carry out their agricultural work while increasing environmental and social services and increasing nature in the city for the benefit of people. Increasingly, citizens and social entities demand public spaces where they can plant and practice ecological farming.

Therefore, to comply with this citizen need, some plans and programs approved in recent years by the municipal government include this need.

These compliances aim to promote urban agriculture in users and entities, as well as carry out citizen participation projects related to the care of the greenery and biodiversity of the city.



The strategy to follow is the construction of an urban garden of 180 m² on an empty plot of municipal property. A social entity will be in charge of managing the space during a 4-year assignment. This paves the way for increasing the environmental and social benefits to the citizens and community.

The expected benefits will include improved social cohesion; inculcating nature-based thinking and environmental education into citizens and providing opportunities for physical exercise for older people. Furthermore, at an environmental level, urban gardens help reduce the urban heat island effect in addition to reducing air pollution. We acknowledge and engage the local administration, as well as local entities and communities to ensure broad cooperation and success of the initiative.



NBS details (Step 3)

The project revolved around turning a vacant lot in Barcelona's Poble Nou neighborhood into a community garden. This 230 m² plot has four 30 m² gardening areas and 110 m² for common spaces and paths. The paths are designed to absorb water, which helps to reduce flooding. The garden has a drip irrigation system and a water fountain to use water efficiently. An 80 m² metal fence secures the area without blocking the view. Experts, including urban planners and the Barcelona City Council, helped to redesign

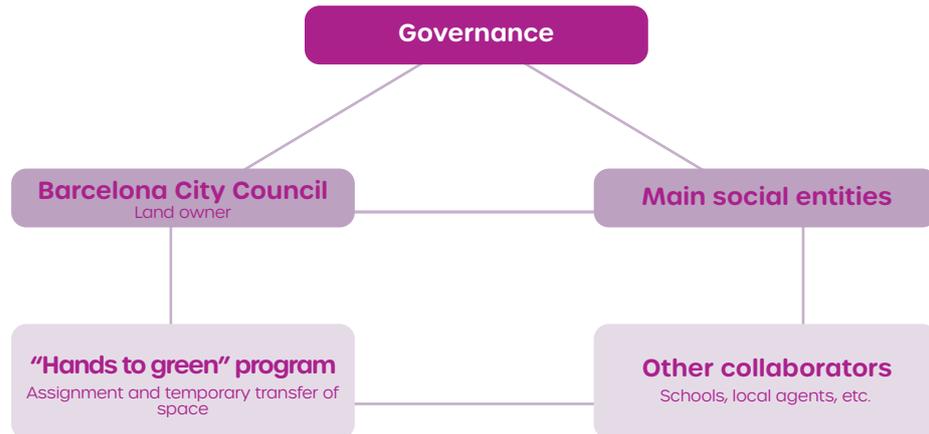
the soil to make it suitable for growing plants, ensuring that the project met local regulations. The garden attracts pollinators and birds and helps store carbon through its plants. It includes picnic tables and shaded areas to encourage social interaction and community activities. This garden not only revamps a neglected urban space but also serves as a model for other cities, showing how community projects can improve the environment and promote sustainability.

Business Model Canvas (Step 4-5-6)

- Value Proposition** The value proposition encompasses multiple environmental, social, economic, and health benefits. Among all, it includes the enhancement of biodiversity, the mitigation of high temperatures, the improvement of social cohesion and identity of the neighborhood, the promotion of healthy, and local food and the economic savings resulting from the production of vegetables for users.
- Key Activities** Identify a suitable space in the neighborhood that is accessible to residents and has the potential to be converted into an urban garden. Community participation is essential; therefore, local communities must be involved in the planning, design, and development of the garden, ensuring that their needs and desires are taken into account.
- Key Resources** During the planning and design phase, it is key to have an accessible publicly owned plot with the potential for an urban garden. The said plot must be suitable for use as a social urban garden. In addition, there must be human resources to evaluate the viability of the project and to be in charge of its design. Financial resources are also a key aspect in the construction phase, since all expenses related to materials, tools, agricultural substrate, and labor must be covered. Regarding the maintenance phase, there should be personnel to manage the space, as well as financial resources to cover the costs of water, electricity, seeds, and other possible expenses.
- Key Partners** The proposal must involve the territorial agents related to the proposal: Municipal Government (as many departments as possible), local community organizations, educational institutions, local companies, health and wellness organizations, environmental organizations, research and extension centers, media and dissemination.
- Key Beneficiaries** Users (local communities, associations, neighbors, etc.) are the main beneficiaries of urban gardens. The rest of the population also benefit indirectly, especially from the environmental benefits that urban gardens provide.

Governance

A collaborative governance model was carried out in which, on one hand, the Barcelona City Council, as owner of the land, temporarily transferred the physical space to an entity that managed the space for a certain time. It is a collaborative management model that favors co-responsibility in the promotion and care of urban green spaces, allowing all city agents to play an active role in it.



Cost Structure

These were the set of economic resources that allow the construction of the urban allotment garden and all associated elements, such as construction materials, appropriate substrate for agriculture, construction of plots, common elements, furniture, irrigation pipes, etc. (Approximate total cost: 50.000 €, according to the Barcelona City Council).

Other possible costs to take into account are:

- Soil analysis. Total soil change if contaminated.
- Intelligent irrigation system with the aim of reducing unnecessary water consumption. Installation and maintenance.
- Human resources in charge of managing the space and conducting workshops.
- Other external consultations related to urban agriculture.
- Other possible economic resources: Periodic contributions of land, purchase of plants and seeds. Costs related to water and other maintenance expenses.

Cost Reduction

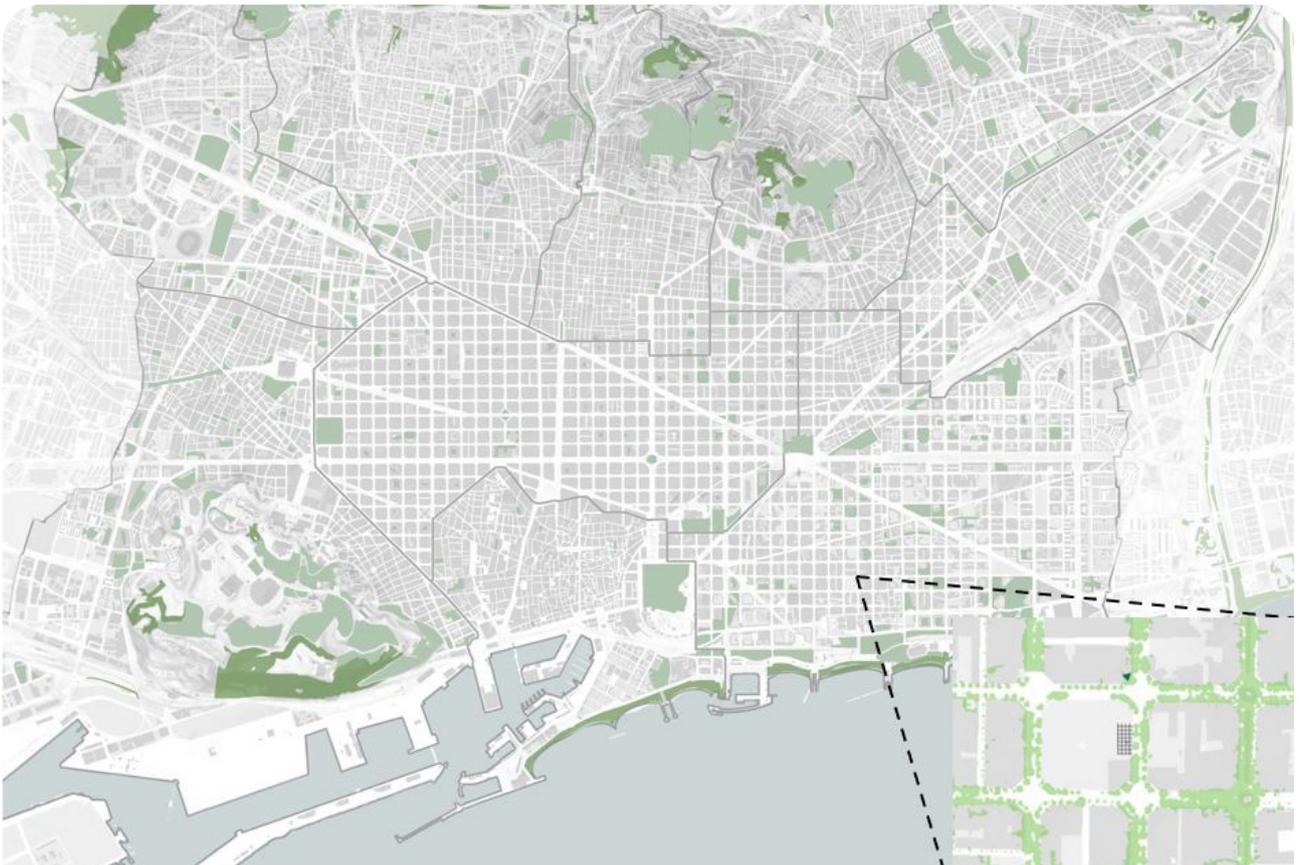
As this is a project framed within the “Hand to Green” program, the management is carried out largely by the selected social entity itself. It includes the reduction of economic expenditure on consumption in the form of direct provision of food, vegetables, and fruits. Also, the cost of creating this urban garden is lower than that of other types of urban greenery.

Capturing Value

The capture of value in monetary terms has been estimated taking into account the savings of vegetables by users, the time they spent in the garden as a physical and social activity and the carbon captured approximately. Other aspects, such as improved health due to physical exercise and a reduced need to visit the doctor have not been evaluated. Likewise, other values of a more social and environmental nature, like the improvement of biodiversity or social cohesion have not been monetized. The annual economic estimated is:

10.443 €/year

- Economic savings of vegetables for users (5.659 €/year)
- The time that users spend in the garden as a social activity has economic savings for people (specific data not available) (4.608 €/year)
- Economic benefits from carbon capture (176 €/year).





Lessons Learned:

- The valuation process has allowed us to obtain a detailed diagram of all the agents, resources and factors involved in the creation of an urban garden. It will also allow us to highlight the economic, environmental and social benefits they provide to citizens.
- In the initial stage, through a participatory workshop, key problems and challenges were identified along with the main agents involved in the territory, and nature-based solutions that can address these problems.
- The social, environmental, and user health benefits produced by urban gardens are very important but difficult to value. An assessment methodology and a complex data monitoring model are required.
- One important lesson learned is the necessity of involving local communities from the beginning of the process, particularly in tasks related to the planning, design and construction phases of the urban garden. In this way, the real needs of local communities can be covered.
- Going through all the stages of the process helps the agents involved and local actors to better appreciate the valorization of the NBS and to be even more committed to it.
- The temporary transfer to of publicly owned vacant urban plots to social entities is a way to enhance the participation of citizens in the care of the city's greenery.

This case study applies the valorization framework outlined in the guide "Capturing the Values and Making the Business Case for Nature-Based Solutions" (Konijnendijk et al., 2024). Tested in Turin, Barcelona, Lisbon, Lima, and Buenos Aires, the methodology provides a systematic approach to assess, communicate, and leverage the environmental, economic, social, and health benefits of Nbs, ultimately supporting their implementation.

Reference:

Konijnendijk, C., Di Cagno, F., Borelli, S., Wild, T. (2024). Capturing the Values and Making the Business Case for Nature-Based Solutions: A Step-by-Step Guide. Deliverable 5.3, H2020 CONEXUS project.



This project has received funding from the Europeans Union's Horizon 2020 research and innovation programme under grant agreement no. 867564



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