



## TAPPING THE POTENTIAL OF NATURE-BASED SOLUTIONS FOR MORE INCLUSIVE SPANISH CITIES



### KEY POINTS

- Inclusivity and equity tend to be overlooked when planning for Nature-based Solutions (NBS) in cities.
- Barcelona has engaged in a process of knowledge exchange and co-creation to integrate nature-based solutions into local policies and plans for sustainable urbanisation.
- National authorities can support a wider uptake and impact of urban nature-based solutions by:
  - Facilitating the implementation of urban resilience and climate change adaptation plans and their inclusion of nature-based solutions as a key measure therein.
  - Promoting nature-based solutions as an alternative or complement to hard-engineering measures and requiring their consideration in all public infrastructure works.

### THE NATURVATION PROJECT

NATure-based URban inNOVATION is a 4-year project involving 14 institutions across Europe in the fields of urban development, geography, innovation studies and economics. We are creating a step-change in how we understand and use nature-based solutions for sustainable urbanisation.



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## Protecting urban nature: The role of local and national governments



Local and subnational governments are increasingly recognised for their central role in protecting and restoring nature as a tool to achieve sustainable urbanisation. Nature-based solutions (NBS) are at the forefront of such discussions, hoping to simultaneously tackle social and environmental goals.

Nature-based solutions have the potential to, for example, improve public health and wellbeing, reduce pollution, conserve biodiversity, decrease flood risk, increase resilience, and equitably regenerate urban spaces.

Wider implementation of nature-based solutions requires, amongst other factors, increasing awareness of their benefits as an alternative to traditional grey infrastructure, leveraging resources and finances for implementation, capacity building and pilot projects, and developing standards for urban nature (e.g. quality, quantity and access). National governments have an important role to play in creating these conditions and developing a regulatory framework which supports local and subnational governments in mainstreaming nature-based solutions across planning and policy.

### What are nature-based solutions?

**Nature-based solutions are spatial interventions that use the natural properties of ecosystems to deliver multiple benefits. As such, they have the potential to limit impacts of climate change, enhance biodiversity and enhance the environmental qualities of the living environment while contributing to economic activities and social well-being**

This brief outlines the activities taken in Barcelona to increase the local consideration of nature-based solutions and highlights opportunities for increased support by the national level (e.g. Spanish Urban Agenda, fostered by the Ministry of Transportation, Mobility and Urban Agenda) as well as regional and metropolitan levels. The brief aims to raise the recognition of nature-based solutions in terms of their potential environmental and social benefits in cities across Spain, and help urban decision-makers to overcome common barriers faced in implementing nature-based solutions.

## Barcelona: Paving the way towards sustainable and inclusive urbanisation

Barcelona has been one of the cities which the Naturvation project engaged with. Over the last four years our teams have been organising regular workshops for knowledge exchange and co-creation on how nature-based solutions are understood and integrated into local policies and plans for sustainable and inclusive urbanisation. Coordinated by ENT Environment and Management and ICTA-UAB (Universitat Autònoma de Barcelona), the process has involved key urban governance actors of Barcelona in order to bridge knowledge between research, policy and practice, creating a shared vision and roadmap for how to address critical sustainability challenges through nature-based solutions.

The main challenges identified in the city of Barcelona are related to urban resilience and adaptation to climate change, environmental justice, human well-being, and social-ecological connectivity between the urban core and its peri-urban area. To address these challenges, a series of interactive events were held, including workshops, awareness raising campaigns and meetings. These events have allowed a multi-stakeholder dialogue on forthcoming or recently approved nature-based solutions-related policies such as the Plan for Biodiversity Enhancement in the network of parks and beaches of the Barcelona Metropolitan Area, the Barcelona Green Infrastructure and Biodiversity Plan, the Urban Resilience Strategy of the City, or the Plan for Children Play in Barcelona's Public Spaces. In addition, this



participatory process has tested cutting-edge tools developed by the Naturvation project which can be applied in other cities, such as the Urban Nature Atlas, the world's largest database of nature-based solutions with over 1,000 cases worldwide and the Urban Nature Navigator to evaluate nature-based solutions and identify how they contribute to sustainability goals.

During the last four years, the local network has facilitated multiple collaborations and knowledge exchange, mainly between different public authorities (from local to regional levels), agencies and other academic organisations, and - to a smaller extent - grassroots and civil society organisations and members of the private sector.

### **Inclusive nature-based solutions in action: Roof-top gardens for disabled people**

The Barcelona project of developing rooftop gardens for people with disabilities is an example of a successful nature-based solution for inclusivity. The project was started in 2015 by the Municipal Institute for People with Disabilities (IMPD) of the Barcelona City Council and aimed to provide beneficial activities like recreation, learning and social interaction for people with disabilities (mostly mental disabilities), taking advantage of the fact that IMPD building's roof was previously empty and underused. Another garden was installed in a municipal building of the Sants district in 2017 and two additional gardens were implemented in the Old Town district in 2018. IMPD project officers emphasised that, among other benefits, this project fosters the empowerment of people with disabilities since the food produced in the rooftop gardens is donated to social lunchrooms or food banks. Scientists involved in the implementation of this nature-based solution have shown that the levels of pollutants found in the vegetables are not harmful for consumption. A study on the impact of the project in terms of users' health and wellbeing also indicates that participants' satisfaction with the rooftop garden project not only comes from the gardening activity per se but from the broader experience of leaving the social centre where they spend most of the day, getting to know new parts of the city, taking new modes of transportation, and interacting with more residents and workers. In the framework of the Naturvation stakeholder process, a workshop was organised in the IMPD on the 5th of June of 2018 to prioritise the benefits of green roofs across the city of Barcelona, leading to this scientific publication. The rooftop gardens project also recently won the EPSA (European Public Sector Awards) 2019 in the Supra-Local and Local administrative category.

### **Opportunities for increased national level support**

Building on the lessons learned throughout the Naturvation project and its activities in Barcelona, several opportunities have been identified for how the national government and its bodies can provide increased support for local and subnational governments regarding nature-based solutions:

- Facilitate the implementation of urban resilience and climate change adaptation plans (e.g. via the Spanish Urban Agenda), especially in small and middle-size cities and encourage the implementation of nature-based solutions as key measures within these policies.
- Recognise the potential contributions of nature-based solutions to social (in)justice and encourage cities to take these into account in nature-based solution design and implementation. This is possible, for example, when nature-based solutions are implemented on a small scale in the form of pocket and

urban gardens and equitably distributed (especially in areas with higher presences of socio-economically vulnerable groups).



- Encourage the urban pursuit of nature-based solutions as one tool within a bundle, for increased impact. For example, reducing spaces for private cars in the Super Blocks model helps to achieve a double impact of improving atmospheric conditions and providing better space and ground for nature-based solutions. As a result of the over forty naturalisation measures implemented by the Barcelona municipality over the last three years, the total area covered by various forms of ‘green’ has grown by 24.46 hectares.<sup>1</sup>
- Promote a better understanding of how nature-based solutions can contribute to urban policy objectives as an alternative or complement to hard-engineering measures. This can be done, for example, by:
  - o The consideration of nature-based solutions shall be obligatory in all public infrastructure works: from road reconstruction to housing, or other type of development. Nature-based solutions (such as sustainable urban drainages, urban and pocket gardens, raingardens, or urban forests) shall not be a recommendatory measure, but rather “the new norm” that is part of all public works.
  - o Nature based solutions need to be accompanied by measures associated with slowing down traffic and an increase in pedestrian and cycling zones.
  - o When designing and implementing nature-based solutions, public authorities need to consider 1) whether potential gentrification effect might follow and 2) how to counter potential price hikes or commercial trends that result in social exclusion. Setting a ceiling on house prices and rents is one approach.
- Ensure that nature-based solutions are designed and implemented through an inclusive process, e.g.:
  - o Ensure that projects are consulted with various communities, including those most likely to be affected, before the phase of designing. A stronger weight should be added to their visions or recommendations in the planning and implementation phases.
  - o Initiate diverse type of consultations and forms of citizen engagement so that individuals who are not used to formal language and settings feel encouraged to express their views and participate. Follow-through should be carried out via consultations and participative forums during all phases of development. important role in realising the development of a regulatory framework and creating the enabling conditions to support local and regional governments in mainstreaming nature-based solutions across planning and policy.

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<sup>1</sup>These measures are part of the Programme for Promoting Urban Green Infrastructures, which puts into practice the Green and Diversity Plan, following the goal to “achieve a green infrastructure that offers maximum ecosystem services in a city where nature and town interact and strengthen one another”. In: <https://ajuntament.barcelona.cat/ecologiaurbana/en/what-we-do-and-why/urban-greenery-and-biodiversity/green-infrastructure-impetus-plan>; and [https://ajuntament.barcelona.cat/ecologiaurbana/sites/default/files/Balanc\\_Verd\\_Biodiversitat.pdf](https://ajuntament.barcelona.cat/ecologiaurbana/sites/default/files/Balanc_Verd_Biodiversitat.pdf).