

**NATURVATION**  
cities – nature – innovation



## THE MULTIPLE VALUES OF URBAN NATURE: EVIDENCE FROM 1,000 EUROPEAN NATURE-BASED SOLUTIONS



### KEY FINDINGS

- Urban nature has the potential to create ecological, social, cultural and economic values, but requires an understanding of what is valued and by whom to gain support and be designed effectively.
- Nature-based solutions have the potential to address multiple objectives of urban sustainability in parallel and contribute to cross-sectoral policy goals.
- Urban planning needs to escape silo thinking and recognise complementary values that can be produced through the smart design and application of nature-based solutions.
- Utilising assessment tools can help urban planners to better account and plan for delivering multi-functional urban nature.

### 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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## Urban nature: Why the fuss?



Urban nature-based solutions can be designed to deliver diverse social, cultural, environmental and economic benefits in parallel. This instills them with the potential to contribute to multiple policy goals simultaneously. Making optimal use of such solutions requires an understanding of the values a particular nature-based solution can contribute to, as well as a policy environment conducive to realising value across several policy areas.

The NATURVATION project has collected information on 1,000 nature-based solutions in its Urban Nature Atlas<sup>1</sup> to support policymakers and planners in acquiring such an understanding as well as an Assessment Framework<sup>2</sup> to facilitate the matching of urban problems with nature-based solutions. On this basis, the project has also developed recommendations for creating an optimal policy environment in which nature-based solutions can be nurtured and allowed to reach their maximum potential.

Urban nature has the potential to create many types of value, but requires an understanding of *what* is valued and *by whom* to gain support and be designed effectively.

This brief thus targets both policy makers and planners alike in an effort to foster a wider uptake, more effective design, and broader support for nature-based solutions. The opportunity to deliver the multiple benefits offered by nature-based solutions are also being increasingly recognised by policy frameworks from the global to the local levels. The European Green Deal, for example, aims to protect, conserve and enhance the EU's nature as a means to ensure the health and well-being of citizens. This recognition is echoed in the Biodiversity Strategy for 2030, which highlights nature-based solutions as being essential for emission reduction and climate adaptation. In the urban context, the Biodiversity Strategy underlines the value of green infrastructure as a means to cool urban areas and mitigate the impact of natural disasters. Accordingly, this brief highlights the potential values of nature-based solutions as well as *what* is valued *by whom* for effectively designing and gaining support. Both strategic and practice-oriented recommendations are included.

## Understanding the values of nature-based solutions

Urban nature-based solutions produce critical ecosystem and wider benefits for cities and their populations. NATURVATION has identified four key categories of values, namely: ecological, social, cultural and economic. Most prominent are the **ecological** or environmental benefits, such as air quality or temperature regulation within a city, safeguarding habitats for urban biodiversity, or maintaining genetic diversity. Beyond the ecological perspective, nature-based solutions often generate **social values**, including health and well-being benefits by offering a space for recreation and mental stress release, visual enjoyment, strengthened social justice and cohesion, environmental education, and an inclusive and equitable governance of the city. **Cultural benefits** are connected to city dwellers' heritage reflected in the nature-based solution and the attraction of diversity among the urban population. Meanwhile, economic development and employment surrounding a nature-based solution provide **economic value** to the population in its vicinity and beyond. The vast majority of nature-based solutions deliver multiple ecosystem services and value types in parallel.

<sup>1</sup> <https://naturvation.eu/atlas>

<sup>2</sup> <https://naturvation.eu/assessment>



## Assessing contributions towards sustainability goals



While nature-based solutions offer a variety of services to the public and private sectors, nature can have values that are difficult to account for in economic terms. To support planners and policy makers in taking account of these multiple values and optimise nature-based solutions' design to deliver on this potential, there is a need for more holistic assessments and streamlined monitoring approaches. Currently, the number of nature-based solutions with assessment frameworks in place is alarmingly low.

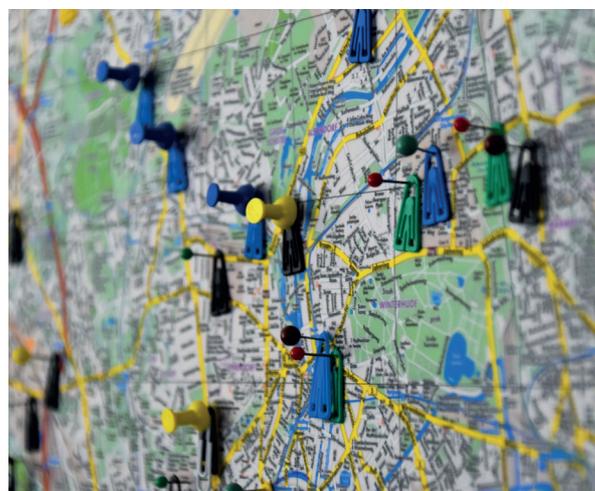
Of the 1,000 European nature-based solutions included in the Urban Nature Atlas, only 10% had impact assessment tools, which were applied to

measure environmental, economic, cultural and/or social impacts. To respond to this need, NATURVATION has developed the Urban Nature Navigator<sup>3</sup>. This assessment framework brings together different kinds of knowledge, integrates the contributions of multiple initiatives, and assesses the value of nature-based solutions in relation to urban sustainability goals. A database<sup>4</sup> accompanies the framework, providing open access to knowledge about where, when, and under which circumstances integrated multifunctional and systemic impacts of nature-based solutions can be assessed.

Indicators are central to assessing the range of services provided by a given nature-based solution. Around 30 indicators have been selected in the Urban Nature Navigator to capture nature-based solution's benefits, such as 'air cooling' or 'historical and cultural meaning'. These indicators are underlined by a scoring system, which allows the user to compare the potential benefits of different solutions before deciding which is best suited for addressing given urban challenges.

### Evidence from 1,000 nature-based solutions

NATURVATION's Urban Nature Atlas identified and collected evidence on more than 1,000 nature-based solution interventions from 100 cities across Europe. The explored interventions include a diversity of nature-based solutions, such as parks and urban green areas, allotments and community gardens, blue areas, grey infrastructure and with green features, and external building greens. The majority of the explored projects have been designed to address multiple and diverse societal challenges. Insights on the types of values generated by the 1,000 nature-based solutions are outlined below, highlighting contributions to societal challenges, sustainability challenges, the delivery of ecosystem services, and diverse policy targets.



<sup>3</sup> <https://naturvation.eu/result/urban-nature-navigator>

<sup>4</sup> <https://naturvation.eu/result/value-and-benefit-assessment-methods-database-urban-nature-based-solutions>

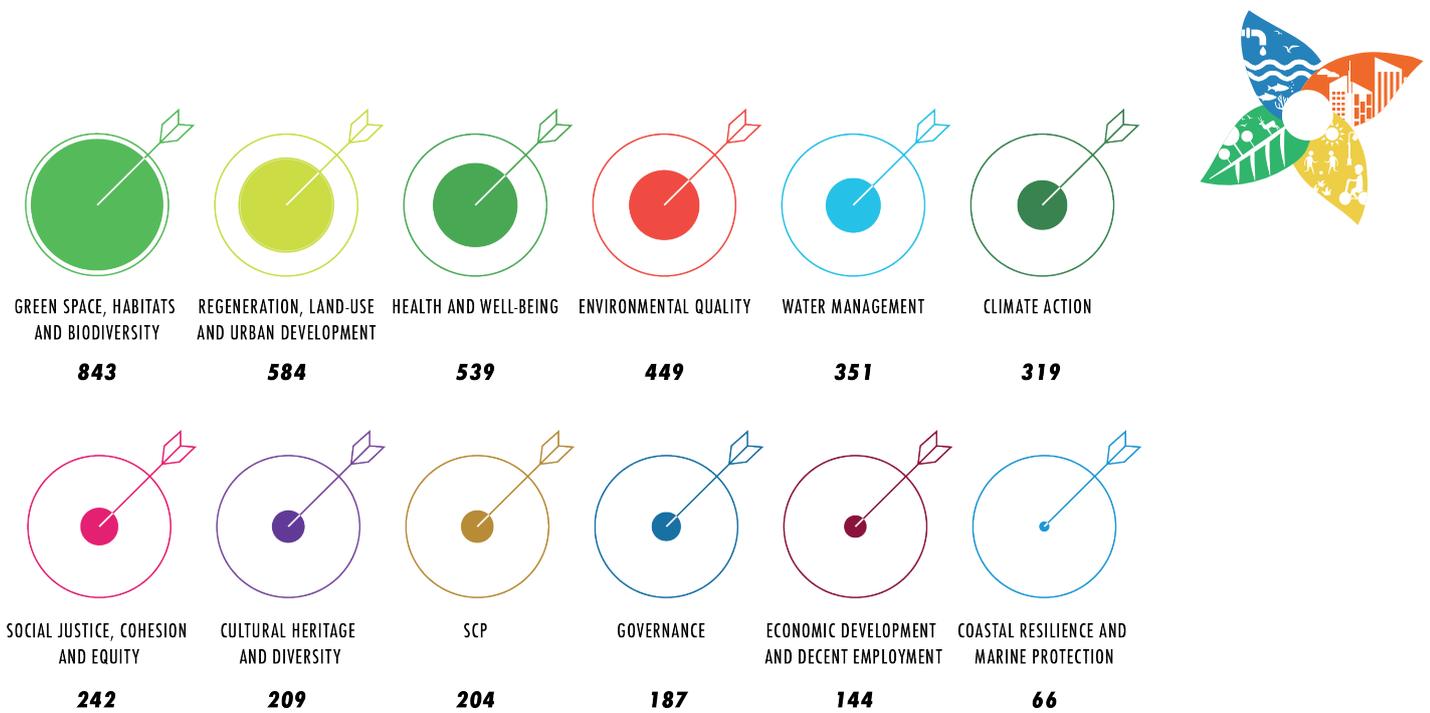


Figure 1: Frequency of sustainability challenges by the studied nature-based solutions

### Societal challenges

Nature-based solutions can help overcome or weaken a range of societal challenges, such as social injustice, issues related to cohesion and equity, health and well-being, and can assist in strengthening cultural heritage and cultural diversity in a city. Half of the projects identified in the Urban Nature Atlas tackled issues related to health and well-being. While governance, social justice and sustainable consumption and production issues were addressed by only a quarter of the projects, certain types of nature-based solutions addressed these topics more frequently (e.g. community gardens and allotment projects). Teleki Square Community Park in Budapest, Hungary, for example, was renovated with the close involvement of the local population. This not only resulted in the regeneration of the park and a place for health and well-being for the urban population, but also served to strengthen social cohesion through inclusive governance.

### Sustainability challenges

The NATURVATION project defined twelve urban sustainability challenges that nature-based solutions can potentially tackle. Figure 1 provides an overview of these challenges and the number of projects that targeted these objectives. It should be noted that many projects addressed multiple challenges in parallel, thus adding up to more than the total 1,000 cases.

The most addressed sustainability challenges were the creation of green space and protection of biodiversity and habitats. Beyond that, urban nature-based solutions can offer relief to the growing effects of climate change on the urban realm, including strengthening coastal resilience and better water management. Variation was observed among different projects and the extent their effect on the challenges was perceived. For example, while only a third of all studied nature-based solutions addressed climate change, green areas created with the intent of water management (i.e. rain gardens, swales or sustainable urban drainage systems) were considered to tackle these issues at a much higher ratio (more than half). Similarly, a positive effect on environmental quality, especially better air quality, was recognised more prominently for green buildings and indoor areas.

In Liège, Belgium, for example, the project VERDIR - “Sustainable Rehabilitation and Responsible Innovation” - was initiated to develop local economic activities based on urban and peri-urban agriculture by converting brownfield sites into a large-scale site of production of vegetables and plants. Alongside the improvement of environmental quality through the regeneration of ‘waste’ lands, the project also improved the quality of life and health of urban

residents by providing access to fresh produce, converting wastelands into a more attractive landscape, and promoting social cohesion and economic development through the creation of skilled jobs and the hiring of low-skilled workers in urban areas.



### Policy objectives

Urban nature-based solutions to contribute to a range of political objectives spanning across different sectors, such as: mitigation and adaptation to climate change, reduction of air pollution, conservation and enhancement of biodiversity, improvement of water quality, societal well-being, inclusive and effective governance, social justice, cohesion and equity, and sustainable urban development. Nature-based solutions therefore not only address a variety of challenges relevant for sustainable urban development, but also wider global development challenges as defined by the UN Sustainable Development Goals. The realisation of these benefits is, however, dependent on several factors such as the type of nature-based solution, its design and the context and means by which it is implemented (e.g. participatory co-design process, top-down implementation, citizen monitoring, etc.). Trade-offs between the delivery of different services and therewith the ability to deliver targeted policy goals need to be considered in designing nature-based solutions, not least taking into account potential conflicts between environmental objectives and other land use priorities or safety aspects.



### Applying lessons learned for policy and planning

Highlighting the multifunctional potential of nature-based solutions – and particularly the social and cultural values they can generate – is of particular importance when considering how to promote and develop nature-based solutions in cities and enact action. This offers a possibility to escape silo thinking and recognise complementary values as a basis for collaborating on shared solutions spanning across traditional sectoral boundaries and budgets.

In terms of planning, knowing the priorities of the general population is a useful way of connecting the design and characteristics of natural areas to the matters that concern people most. By focusing on issues which urban residents care or are concerned about (e.g. health and well-being, safety issues in public parks, air pollution), it is possible for urban planners to deliver on these needs and gain broader support for implemented solutions.

Beyond these considerations, recognising which stakeholders are crucial for the successful financing and implementation of nature-based solutions is also key. Planning and design need to be conceptualised within a long-term perspective and considered in terms of delivering value for different stakeholder groups. The second NATURVATION policy brief *“Achieving Impact: How to realise the potential of urban nature-based solutions?”* addresses the multiple factors that have prevented policy makers and planners from tapping the full potential of nature-based solutions and outlines strategies and tools to help overcome these barriers.