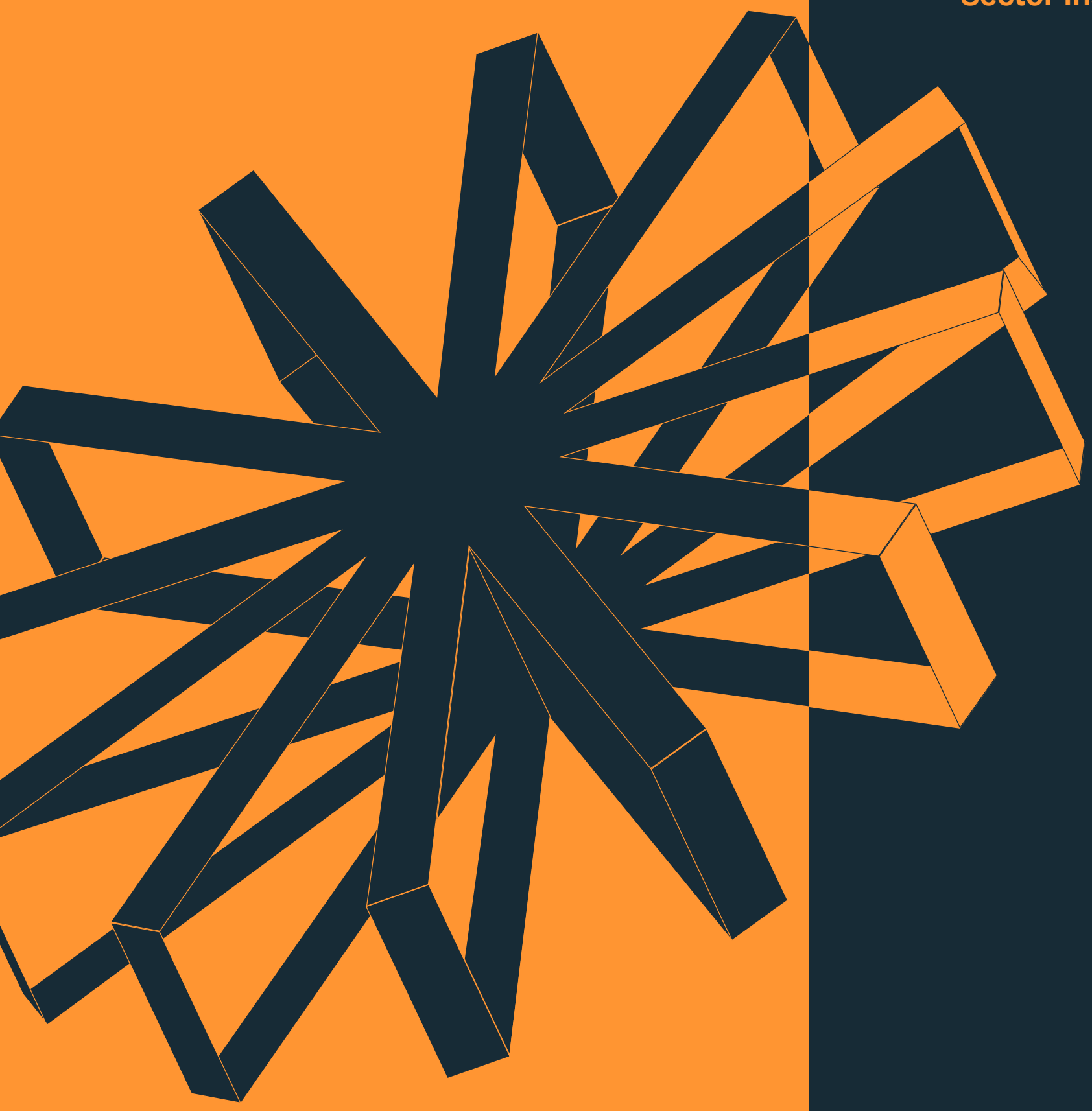
Sector Insights



Adaptation of Spanish cities to climate change through the implementation of Nature-Based Solutions (NBS).

November 2025

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1 Context

1.1. Nature-based solutions, a measure for adapting to climate change.

Nature-based solutions (NBS) are approaches, actions, or processes based on natural principles to address land and urban management issues—such as climate change adaptation, water resource management, food security, and air quality. Implementing them is a priority for transforming cities into models that provide ecosystem, cultural, provisioning, and regulating services, contributing to the reduction of natural resource consumption and species conservation. In short, NBS are essential for creating resilient urban systems that—in coexistence with their environment—minimize their impacts and facilitate greater adaptability to future climate scenarios.

Figure 1: Defining Nature-based Solutions. Source: IUCN

The term **Nature-Based Solutions (NBS)** was first introduced by the IUCN and the **World Bank** during the **World Conservation Congress** in 2016. At that event, resolution **WCC-2016-Res-069-EN** was adopted, defining NBS as "*actions aimed at protecting, sustainably managing, and restoring natural or modified ecosystems, which address social challenges in an effective and adaptive manner, simultaneously generating benefits for both human well-being and biodiversity*" (IUCN, 2016).

Agreements and policies relating to NBS and climate change adaptation

Since the concept emerged in the late 2000s, NBSs have been widely adopted by policymakers in the **European Union** (especially by the **European Commission**), and the IUCN has played a crucial role in promoting them as a key tool in combating global challenges such as climate change. As a result, NBS have been integrated into international agreements and global frameworks such as the **Paris Agreement** and the **Post-2020 Global Biodiversity Framework**, with the aim of generating benefits for both biodiversity and human well-being, reinforcing their relevance in climate and sustainable development policies.

At the global level, in 2022, the **United Nations Environment Assembly (UNEA)** reached a crucial milestone by formally defining **Nature-Based Solutions (NBS)** through the adoption of resolution **UNEP/EA.5/Res.5.** This definition, based on the original 2016 definition adopted by the **IUCN**, defines NBS as actions to protect, conserve, restore, and sustainably manage terrestrial, aquatic, coastal, and marine ecosystems that address social, economic, and environmental challenges while simultaneously providing benefits for human well-being, ecosystem services, resilience, and biodiversity (UNEP, 2022). Subsequently, the term was included in the conferences of **the United Nations Convention on Climate Change (COP)** and the UN biodiversity negotiations, appearing in the decision texts of **COP27 of the UNFCCC**[1], **COP15 of the CBD**[2], and **COP15 of the UNCCD**[3]. In this context, the creation of the **ENACT** program at COP27 stands out, allowing this political momentum to be harnessed by coordinating global efforts to accelerate the use of NBS in the fight against climate change[4].

Today, NBSs are perfectly aligned with the **2030 Agenda** program and can contribute to a region achieving various **Sustainable Development Goals (SDGs)**. Likewise, the principles of NBS are included in the **United Nations New Urban Agenda (2016)** and have been transferred to the Spanish context in the **Spanish Urban Agenda** (Ministry of Development, 2019).

In this regard, the **European Commission** has incorporated NBSs as a key part of the **European Green Deal** to achieve

1. https://unfccc.int/sites/default/files/resource/cop27_auv_2_cover%20decision.pdf
2. https://www.cbd.int/doc/c/2c37/244c/133052cdb1ff4d5556ffac94/cop-15-l-25-es.pdf
3. https://docs.un.org/es/ICCD/COP (15)/23/Add.1
4. https://iucn.org/our-work/topic/nature-based-solutions-climate/our-work/enact-enhancing-nature-based-solutions

the objectives of the EU's main political priorities, particularly the EU's biodiversity strategy for 2030 (European Commission, 2023) and the **EU Adaptation Strategy (European Commission, 2021)**. Both strategies emphasize the use of Nature-Based Solutions as tools to promote biodiversity and strengthen Europe's resilience to climate change. Moreover, the EU Environment Agency's five-yearly report, "Europe's environment 2025", once again highlights the key role that NBS play in increasing resilience to climate change (EEA, 2025).

In Spain, the concept of NBS has been progressively integrated into climate change adaptation and mitigation plans and strategies, both at the national and regional levels. One of the most important milestones in its adoption was its inclusion in the **National Climate Change Adaptation Plan (PNACC) 2021-2030 (MITECO, 2020)**, which recognizes NBSs as essential tools for mitigating the effects of extreme events such as floods and droughts. This approach is complemented by the **State Strategy for Green Infrastructure and Ecological Connectivity and Restoration (MITECO, 2021)**, which highlights the importance of NBS for increasing territorial resilience and restoring ecological connectivity.

Since 2018, the **National Environment Congress (CONAMA)** has been a key player in promoting NBS. That year, the **Working Group on Nature-Based Solutions (GT-NBS)** was created, coordinated by the **CONAMA Foundation** in collaboration with **IUCN-Mediterranean**, marking a turning point in the debate on their implementation in Spain[5].

At the regional level, communities such as **the Basque Country** and **Catalonia** have key institutions that promote the integration of green infrastructure projects based on NBS to strengthen adaptation to climate change. In the Basque Country, **Ihobe**, the Basque Government's public company for environmental management, plays a central role in implementation, and in Catalonia, the **Catalan Office for Climate Change (OCCC)** leads projects associated with NBS, such as the restoration of river and coastal ecosystems. In addition, with the support of the **Biodiversity Foundation**, governments in other autonomous communities collaborate with local actors, communities, and scientific institutions to promote climate adaptation through the implementation of Nature-Based Solutions, strengthening their role in regional and national climate strategies.

Step by step over the last decade, **Nature-Based Solutions** have been consolidated at all levels as key actions for climate change adaptation in cities.

1.2. Current programs, plans, and strategies on the subject

Among the different institutions and bodies key to the implementation of **Nature-Based Solutions (NBS)** in Spain, the **European Commission**, the **Spanish Government**, and the **regional governments** and bodies linked to the environment stand out. The influence of the **IUCN** is also significant. Through its policies and programs—implemented either by the **European Union** or through operational partners in Spain—it has played an important role in advancing the development and promotion of Nature-Based Solutions.

To summarize, the following are the different programs, plans, tools, or strategies currently in place to promote NBS:

Current programs, plans, standards, or strategies
The ENACT program, under the direction of the IUCN, coordinates global efforts to accelerate the use of NBS.
Global NBS Standard, a practical tool developed by the IUCN to guide the implementation and evaluation of NBS[6]
NBS financing mechanisms under the umbrella of the IUCN: Global EbA Fund, the Blue Natural Capital Financing Facility and the Nature+ Accelerator Fund.
IUCN Academy of Nature-Based Solutions, to provide training and technical expertise in the sector
EU Horizon Europe (2021-2027) funds the integration of NBS into EU demonstration projects
EU Biodiversa+: European Union Biodiversity Partnership supports research on the potential of NBS[7]
EU NetworkNature: This EU-funded coordination action aims to maximize the results of research projects on NBS[8]
MITECO Fundación Biodiversidad in partnership with Biodiversa+ for the implementation of nature-based solutions for biodiversity, human well-being and climate change mitigation
MITECO Biodiversity Foundation calls for projects that contribute to the implementation of the National Climate Change Adaptation Plan 2021-2030 in the 2023 financial year.
MITECO, Recovery, Transformation, and Resilience Plan Call for grants to promote the renaturalization of cities 2022

5. https://www.fundacionconama.org/que-hacemos/proyectos/observatorio-de-soluciones-basadas-en-la-naturaleza/
6. https://portals.iucn.org/library/sites/library/files/documents/2020-020-Es.pdf
7. https://www.biodiversa.eu/
8. https://networknature.eu/

MITECO, AdapteCCa, and knowledge platforms with resources and knowledge on the implementation of NBS at local and regional level[9]
Regional energy transition and climate change strategies that include the promotion of NBS:
• Andalusia: Andalusian Climate Action Plan
• Aragon: Aragon Climate Change Strategy Horizon 2030
• Asturias: Asturian Climate Action Strategy 2023-2030)
• Balearic Islands: Climate Change and Energy Transition Law
• Canary Islands: Canary Islands Climate Action Strategy (2023)
• Cantabria: Strategy for Action against Climate Change in Cantabria 2018-2030
• Castile and León: Regional Climate Change Strategy 2009-2020
• Castile-La Mancha: Regional Climate Change Strategy 2020-2030
• Catalonia: Strategic Reference Framework for Adaptation to Climate Change (ESCACC30)
• Valencian Community: Valencian Climate Change and Energy Strategy 2030
• Extremadura: Extremadura Integrated Energy and Climate Plan (PEIEC) 2021-2030
• Galicia: Galician Climate Change and Energy Strategy 2050
• Madrid: Energy, Climate, and Air Strategy of the Community of Madrid 2023-2030
• Murcia: Regional Strategy for Climate Change Mitigation and Adaptation
• Navarre: Navarre Climate Change Roadmap (KLINA)
• Basque Country: Euskadi Climate Change Strategy 2050 (Klima 2050)
• La Rioja: Regional Climate Change Adaptation Plan (PRACC) 2023-2030

It can be seen that both at the national and regional levels, the **Spanish government** and the autonomous communities are committed to promoting NBSs as a key strategy for mitigating and adapting to climate change, coordinating their efforts under the umbrella of European and international programs such as the **IUCN** and the **European Commission**.

1.3. National and international reference experiences

Since the concept of Nature-based Solutions (NBS) was first introduced, numerous projects have been developed at global, European, national, and regional levels. These projects have generated lessons learned that have been compiled in various guides and public consultation platforms. Below are some of the most notable resources for the implementation of NBS, which provide practical case studies, lessons learned, and useful tools:

1. Nature-based Solutions: Transforming Cities, Enhancing Well-being.

This **CORDIS** document presents the lessons learned from the **Horizon 2020** program, highlighting EU-funded projects focused on urban transformation and well-being through NBS. Read more at CORDIS.

2. **NetworkNature Database of EU Research and Innovation Projects on Nature-Based Solutions.**

NetworkNature Database of EU Research and Innovation Projects on Nature-Based Solutions.
This database provides information on EU-funded research and innovation projects that apply NBS. It is a valuable tool for finding case studies and lessons learned in the implementation of NBS. Access NetworkNature.

3. Urban Nature Atlas.

The **Urban Nature Atlas**, developed as part of the **Naturvation** project, compiles more than 1,000 NBS projects in European and global cities. This resource is one of the most comprehensive databases on urban nature-based solutions. Explore the Atlas.

4. **Good Practices for Increasing the Application of Nature-Based Solutions and Ecosystem-Based Approaches for Disaster Risk Reduction.**

This report by the **United Nations Office for Disaster Risk Reduction (UNDRR)** analyzes international cases on the use of NBS and ecosystem-based approaches for disaster risk reduction. Download report.

5. **AdapteCCa Platform: Case Studies**

The **AdapteCCa** platform brings together multiple experiences and projects on adaptation to climate change and in Spain, many of which use NBS. This resource allows you to explore cases implemented by public administrations and other actors. Access AdapteCCa.

6. **100 Measures for Biodiversity Conservation in Urban Environments**

Developed by **SEO/BirdLife**, this document offers 100 measures for conserving biodiversity in cities, many of which are related to NBS. It also includes 60 case studies from Spanish cities. View the guide.

7. **Nature-Based Solutions in the Basque Country: 20 Success Stories**

This guide is part of the **Urban Klima 2050** project and documents 20 success stories of NBS implementation in the Basque Country, focusing on climate change adaptation in urban, coastal, and river environments. Consult the guide.

The numerous good practice guides and the diversity of solutions—according to the scope and scale of intervention—generate a wide range in which it can be difficult to identify the most noteworthy references and practices. Each guide organizes good practices according to different criteria, which makes it difficult to find the best options for specific cases. In the Spanish context, the wide variety of recent projects that integrate nature-based solutions requires a comprehensive and comparative analysis to extract the best reference practices. In this regard, the Biodiversity Foundation, through ICTA-UAB, is working on the systematization of Nature-Based Solutions in Spain. Its main objective is to establish a system for identifying, classifying, and cataloging NBS that promotes consistency in their planning and maximizes their effectiveness in addressing the challenges of the National Climate Change Adaptation Plan. This guide will therefore be a key tool for identifying good practices in the Spanish context.

9. http://www.adaptecca.es/
11. https://catalogo-esbn.icta.cat/

2 Barriers to the implementation of NBS in the Spanish context

2.1. Recognition of existing barriers

The identification of barriers outlined in this report is based on practical experience and knowledge shared over recent years, during which there has been a significant increase in the development of projects related to Nature-Based Solutions (NBS) in Spain. This growth has been driven primarily by **European programs such as Horizon Europe and LIFE**, and more recently by the **Adaptation and Mitigation Missions initiatives**. Additionally, the Biodiversity Foundation—within the framework of the Biodiversa+ partnership—has launched calls for proposals aimed at implementing NBS focused on biodiversity, human well-being, and climate transformation. It is also worth highlighting the calls for proposals from **MITECO and the Biodiversity Foundation** to support projects that contribute to the implementation of the National Climate Change Adaptation Plan 2021-2030, especially in the 2023 financial year. Furthermore, in 2022 the Recovery, Transformation, and Resilience Plan launched a call for grants to support the renaturalization of cities, leading to an increase in projects aimed at introducing Nature-Based Solutions in urban areas.

The conclusions of this report are informed by projects that provide a broad, panoramic view of different case studies. The analysis draws on experience from a wide range of initiatives, including publicly commissioned naturalization and adaptation plans and international competitions focused on renaturalizing public spaces.

It also includes local renaturalization projects and NBS demonstrators within the framework of European projects—such as Horizon, LIFE, and URBACT—involving Next Generation funds or local authorities' own financing. These experiences cover a range of climatic locations, from the Mediterranean to the north or interior of the peninsula, and are applied in varied urban contexts, such as metropolitan cities, intermediate cities, town centers, coastal villages, inland towns, historic centers, suburbs, and vulnerable or emblematic neighborhoods. The aim is to highlight that, despite the particularities of each context, the conclusions reflect experiences that, in some way, allow for a broad and comprehensive view of the barriers to NBS in Spain.

Reference projects for the identification of barriers:

- Green Infrastructure and Biodiversity Master Plans: Implementation of nature-based solutions to improve ecological connectivity and urban resilience in various Spanish cities.

- Grow Green Project (Horizon Europe): Nature-based solutions in Valencia, focused on urban adaptation and improving wellbeing[12].

- Scheduled Rehabilitation Residential Environments (ERRP): Project aimed at combining energy efficiency with the creation of greener environments.

- Santander Future Habitat, Regenerative Urban Planning: Initiative to transform the urban environment of Santander through nature-based and sustainable solutions[13].

- Naturalization of the Albacete Expansion: Special Urban Improvement Plan focused on integrating nature into urban spaces[14].

- Green Infrastructure in the Medieval Quarter of Vitoria-Gasteiz: Identification of opportunities and development of proposals for improving green infrastructure in historic areas[15].

- Citizen Activation for Naturalization in Vitoria-Gasteiz: Community participation projects that promote ecological restoration and green infrastructure in the old town[16].

- Climate Refuge Plan for Malgrat de Mar: Creation of refuge spaces to protect the population from extreme heat events[17].

- Valencia Climate and Energy Heat Adaptation Guide: Document providing strategies for heat adaptation in Valencia, using nature-based solutions[18].

- Regeneration and Naturalization of Parks in Madrid[19] and Donostia[20]: Projects focused on ecological restoration and the improvement of urban parks.

- Naturalization of Valencia's Town Hall Square: Iconic project promoting the integration of NBS in the heart of the city[21].

- Strategy for the naturalization of shopping streets in Valladolid[22] and Donostia[23]: Interventions in urban shopping areas to improve sustainability and the natural environment.

- EPIU Getafe Project: Initiative for the naturalization and use of NBS in public spaces, as a continuation of the European UIA EPIU project[24].

This list highlights various examples of projects that combine ecological restoration, climate adaptation, and citizen participation through Nature-Based Solutions (NBS) in different municipalities in Spain. Lessons learned from these projects are incorporated, along with learnings from other reports that clarify or complement the conclusions drawn from practical experience in the sector.

2.2. Regulatory Barriers

Regulation—understood as a tool to promote NBS—is still limited, fragmented, or contradictory at various levels. The main regulatory barriers include:

12. https://growgreenproject.eu/
13. https://santanderhabitatfuturo.com/
14. https://regeneraensanche.com/
15. https://paisajetransversal.com/portfolio/infraestructura-verde-vitoria-gasteiz/
16. https://cea.vitoria-gasteiz.org/portal/es/w/naturalizacion-del-casco-medieval
17. https://www.fundacionconama.org/premios/proyecto-de-creacion-y-diseno-de-la-red-de-espacios-bioclimaticos-en-malgrat-de-mar/
18. https://www.valencia.es/cas/actualidad/-/content/consejos-para-no-pasar-calor-en-verano
19 Madrid + Natural, https://www.madrid.es/portales/munimadrid/es/Inicio/Medio-ambiente/Madrid-Natural-Soluciones-Naturales/?vgnextfmt=default&vgnextoid=ae3fe42ad5b12510VgnVCM1000000b205a0aRCRD&vgnextchannel=3edd31d3b28fe410VgnVCM1000000b205a0aRCRD
20. hhttps://www.donostia.eus/ataria/es/web/ingurumena/cambio-climatico/urban-klima-2050
21. https://paisajetransversal.com/portfolio/plaza-ayuntamiento-de-valencia/
22. https://www.ideva.es/sites/default/files/2020-1/URBAN%20GreenUP_EstrategiadeRenaturalizacio%CC%81nUrbana_0.pdf
23. https://www.donostia.eus/ataria/es/web/next/proyectos/modernizando-calles-tiendas
24. https://hogaressaludables.getafe.es/
25. See the case of Lleida: http://www.gencat.cat/territori/informacio_publica

- Lack of specific regulations for incorporating NBS into urban and architectural projects: Although the various regional land-use planning laws recognize the importance of green infrastructure, few urban planning laws require naturalization beyond the establishment of minimum ratios for green areas. Regulations for incorporating NBS into redevelopment, renovation, or construction projects are scarce, and binding criteria for the integration of NBS are rarely imposed.

- Lack of standardization criteria (ordinances and technical codes): Some urban planning ordinances, such as the IDEEU (Ecological Return Index for Urban Space)[25], provide useful references for measuring the impact of NBS, but there is no standard, unified national indicator for NBS that integrates measures associated with both urbanization and building projects. The Technical Building Code (CTE), updated in 2025, does not explicitly include NBS, as it does with energy efficiency.

- Regulatory incompatibility in different contexts. In historic centers and protected urban areas, conservation regulations may conflict with the integration of NBS, such as the renaturation of facades or public spaces. Unlike rural areas, where vegetation has been part of the cultural heritage, in many protected urban areas urban development has led to the expulsion of nature as part of the heritage, making the use of NBS more complex.

- Obligations in public tenders: Although the incorporation of NBS in public tender specifications is increasing, its application is still inconsistent, and there is a lack of clear standardization for its implementation in large-scale public works. Specific examples, such as the Green Guide in the Valencian Community[26], are beginning to fill this gap with specific measures that include NBS for public procurement in the field of building construction by the Valencian Regional Government.

2.3. Barriers to Financing and Management

Access to funding and the effective management of NBS projects is another significant challenge. The main barriers in this area include:

- Difficulty in obtaining large amounts of funding for NBS: Although European funds such as Next Generation EU, Horizon Europe, and programs managed by the Biodiversity Foundation offer funding opportunities, the financial allocation is often insufficient for large-scale projects—such as the restoration of urban rivers or the creation of flood ponds.

- High costs in inappropriate items: The costs of NBS projects increase significantly when they include the demolition of obsolete infrastructure, which sometimes leads to an erroneous assessment of the total costs of implementing an NBS. To facilitate a better understanding of the cost, as well as to identify different funds, it is recommended to break down the demolition costs from the net costs of the project.

- Lack of funding for private owners: Unlike energy efficiency projects, there are no widespread funding lines for the implementation of NBS on private property, such as green roofs or naturalized courtyards. The lack of established programs for the maintenance of these solutions on private property limits their expansion.

- Long-term maintenance costs: NBSs require continuous monitoring to ensure their suitability for the environment and the survival of species, as well as to measure their effectiveness in extreme weather events (such as torrential rains or heat waves). This implies a prolonged maintenance cost that must be considered in financial planning.

2.4. Technical Barriers

The design, implementation, and evaluation of Nature-Based Solutions (NBS) present several technical challenges that limit their effective adoption. The most significant barriers are detailed below:

- Limited availability of data and indicators: There is a lack of robust data on the effectiveness of NBS in different contexts, making it difficult to justify their use in large-scale projects. More monitoring and evaluation tools need to be developed to support their application. In addition, NBS can vary significantly in their performance depending on the environment in which they are implemented, requiring specific technical knowledge that is often difficult to obtain for small- or medium-scale projects. Currently, the Biodiversity Foundation's promotion of naturalization projects requires the use of a wide range of indicators, which complicates procedures, as data collection is often delegated to local administrations that are frequently not adequately equipped to gather this information.

- Lack of coherent urban planning: NBS require exhaustive technical studies, even for small-scale interventions. In many cases, the lack of strategic planning in key areas—such as urban drainage and sanitation—limits the ability to effectively integrate NBS. It is essential to have clear parameters for water infiltration capacity and urban planning that coherently articulates small-scale interventions with the needs of the city's water cycle. However, this type of planning is rare.

- Delays in realizing benefits: Unlike conventional (grey) infrastructure, the benefits of NBS can take time to materialize, leading to uncertainty and mistrust about their effectiveness. This highlights the need to establish new technical frameworks that allow projects to be followed up over a longer period to monitor their results over time. NSBS are also vulnerable to climate variability, which can compromise their resilience and effectiveness if they are not accompanied by adequate maintenance.

- Compatibility with natural cycles: NBS must respect natural cycles, such as the planting and growth periods of plant species. However, these natural cycles often conflict with the deadlines and commitments established in public tender contracts, complicating the proper planning of projects and their efficient implementation within the established time frames.

- Lack of coordination between sectors: The implementation of NBS requires close collaboration between different areas of public management—such as urban planning, mobility, public space, and the environment. The lack of coordination between these sectors is a recurring barrier that slows down the adoption process. Environmental departments that act across the board in the administration tend to be more successful in integrating NBS, but this practice is not widespread enough.

- Lack of technical capacity for the dissemination of NBS: NBS are a relatively new solution, which makes mistrust in their effectiveness a critical implementation barrier. To overcome this, it is necessary to have highly qualified professionals who understand the technical complexities of these solutions. Moreover, effective outreach tools that clearly communicate their benefits to a variety of audiences—including policymakers, technical experts, and citizens—could improve public perception. Therefore, a far-reaching communication strategy needs to be developed to demonstrate the effectiveness of NBSs over time and encourage their adoption.

2.5. Barriers related to the capacities of sector agents

The success of NBSs also depends on the involvement and training of the various actors involved, who face different needs:

1. Public Administration:

   - There is a lack of knowledge and, in some cases, mistrust of NBS on the part of local administrations. Some negative experiences with green roofs and facades have generated skepticism.
   - In addition, the lack of trained public personnel for monitoring and maintenance is a significant barrier to justifying the lack of local capacity to implement these solutions.
   - At the political level, there are still deeply rooted positions in favor of domesticating nature. Nature in its pure state, favoring its natural processes, is mistakenly interpreted as dirt.

2. Technicians and developers:

   - Although specialized training in NBS is growing, many professionals (urban planners, engineers, architects) still lack expert knowledge in this field.
   - On the other hand, private developers are beginning to integrate NBS, motivated by the improvement in customer perception and the added value that these solutions bring.

3. Civil society:

   - Although there is growing interest in integrating nature into urban environments, civil society still faces barriers such as a lack of financial capacity to fund naturalization projects.
   - In addition, problems of inappropriate use of public space persist, affecting the sustainability of NBSs, such as nightlife and motorized traffic.
   - Similarly, at the political level, there are still positions that misinterpret nature in its pure state as a lack of maintenance and dirt.

3 Recommendations to facilitate the implementation of NBSs in the Spanish context

Every urban transformation process faces barriers, and the implementation of NBSs is no exception. However, despite the difficulties, these solutions are currently experiencing a boom in Europe, establishing themselves as an effective tool for adapting to climate change. This report presents a series of identified barriers to aid other agents and institutions in devising effective solutions. Overall, **four recommendations are proposed as a starting point to guide reflection, promote action, and improve the implementation of Nature-Based Solutions, thereby maximizing their impact.**

1. Prioritize, define, and standardize objectives and indicators for the Spanish context

The implementation of NBSs in Spain has mainly advanced through demonstration projects and small-scale solutions that have contributed to improving the adaptability of cities to climate change, although they have not yet achieved a significant impact on a large scale. The Biodiversity Foundation—as the main supporter of NBSs in the country—has promoted an increase in naturalization strategies and is working towards the standardization of these solutions. However, it is crucial to define and focus on priority objectives that will enable a high-impact response in the short term. It is recommended that specific and clear objectives be established, with improvement indicators geared towards Spain's main climate challenges, such as extreme heat, droughts, and floods. Following a thorough assessment and in collaboration with stakeholders in the sector, it would be valuable to agree on goals such as ensuring a minimum amount of permeable public land, establishing a national standard for tree planting with a minimum level of shade, or creating flood ponds in peri-urban areas with the capacity to infiltrate a specific percentage of water. This would enable the creation of a basic roadmap to guide efforts within a defined time frame.

2. Commitment to regulations and management systems that facilitate NBS

Without adequate regulations and management models that promote the implementation of NBS in urban and architectural projects in the Spanish context, their expansion and standardization will be limited. It is recommended that NBS be made mandatory in redevelopment, renovation, and construction projects, establishing binding criteria in both public tender specifications and municipal ordinances. Additionally, it would be essential to standardize NBS, for exam-

ple, by incorporating them into the Technical Building Code (CTE), in a similar way to how energy efficiency is included. It is also necessary to review regulations that interpret nature as a threat, as is the case in certain heritage protection laws, to facilitate the integration of NBS without compromising the historical and cultural value of the environment.

3. Overcoming local authorities' fears of NBS

Local councils—as the main executors of the natural transformation of the urban environment—require technical and financial support to implement NBS effectively. To overcome their potential reluctance, it is essential to present case studies with data demonstrating the social and economic benefits of NBS, as well as to provide technical resources for implementation, monitoring, and long-term maintenance.

4. Promoting the culture and economy of urban nature

The adoption of NBSs does not depend exclusively on public administrations; civil society also plays a crucial role in the transformation of cities. To encourage private participation, funding lines should be created to facilitate the implementation of NBSs in private projects. Furthermore, it is essential to highlight the benefits of a naturalized city through communication strategies at all levels that showcase successful examples in cities such as Manchester or Paris , thereby fostering a culture that values and celebrates urban nature.

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