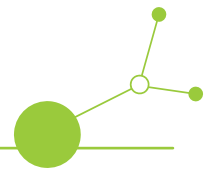


# D.2.1.2

## Summary report on good practice examples of NBS/GI financing in the EU



Final Version  
08/2024





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## List of abbreviations

BelSPO: Belgian Science Policy Office

BSP: Building Design Partnership

CAP: Città Alta Potabilizzazione <sup>1</sup>(High City Potabilization)

CMM: Città metropolitana di Milano (Metropolitan Area of Milan)

EIB: European Investment Bank

ERDF: European Regional Development Fund

ES: Ecosystem Services

ESIF: European Structural and Investment Funds

EU: European Union

FCT: Fundação para a Ciência e a Tecnologia (Foundation for Science and Technology)

GAIA: Green Areas Inner-City Agreement

GBI: Green and Blue Infrastructure

GI: Green Infrastructure

GIS: Geopgraphic Information System

HQE: Haute Qualité Environnementale (High Environmental Quality)

IMMO: Immobilier (Real Estate)

JESSICA: Joint European Support for Sustainable Investment in City Areas

MINECO: Ministerio de Economía, Comercio y Empresa (Ministry of Economy and Competitiveness)

NbS: Nature-based Solutions

NGO: Non-governmental Organization

NNL: No Net Loss

PATIVEL: Plan de Acción Territorial de la Infraestructura Verde del Litoral de la Comunitat Valenciana (Territorial Action Plan for the Green Infrastructure of the Coast of the Valencian Community)

PES: Payment for Ecosystem Services

PPPs: Public-Private Partnerships

PT-DLR: Deutsches Zentrum für Luft- und Raumfahrt (Project Management Agency)

RCL: Research Council of Lithuania

RUIS: Riqualificazione Urbana Infrastrutture e Sicurezza (Regeneration of Urban Infrastructure and Safety)

SCF: Sustainable Cities Fund

SGA: Specific Grant Agreement

SuDS: Sustainable Drainage Systems

UK: United Kingdom

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<sup>1</sup> Some names have been kept in their original language to maintain coherence to their respective acronyms.



# A. Introduction

The primary goal of this report is to serve as a foundational resource for decision-makers by providing a comprehensive overview of financial instruments for implementing Nature-based Solutions (NbS) and Green Infrastructure (GI) in urban areas. It presents a range of viable financing mechanisms that address the challenges highlighted by GreenScape CE project partners.

Through detailed case studies, this document aims to support municipalities - and in this specific case the GreenScape CE pilot cities - by showcasing practical examples that demonstrate how several financial instruments can be used to overcome challenges and achieve a successful implementation.

The catalogue focuses on financing mechanisms from the perspective of city governments, categorizing them based on the premise that a municipality has two main alternatives for increasing NbS in urban settings:

1. **Directly implement NbS projects or maintain existing ones** (especially on municipality-owned land). In this scenario, funding can come from municipal budgets, loans, or project revenues.
2. **Encourage third-party actors** (e.g., residents, utilities, businesses) to implement NbS (particularly on their private property) **or contribute to maintaining existing NbS in the public domain**. Here, local authorities incentivise stakeholders or stimulate private financing through other means.

The document builds on the framework established in "*Deliverable 2.1.1: Gap Analysis of Existing Financing Mechanisms in Partner Countries for Green Infrastructure Investments*" produced within the GreenScape CE project and includes a list of practical case studies mostly from Central European cities. This list demonstrates how several financing mechanisms have been successfully applied, mentioning their strengths and the positive impact of natural solutions.

A wide range of financial instruments from public, private, and blended sources is explored to support the scaling and mainstreaming of NbS, as detailed in Table 1.

Table 1. Main categories of financing instruments for urban NbS

Main categories of financing instruments	
“Traditional” financing instruments	“Innovative” financing instruments
Grants (EU fundings es. LIFE, Horizon Europe, Interreg; regional and public fundings)	Innovative market-based instruments: Payment for Ecosystem Services (PES); Biodiversity offsets; Voluntary carbon markets; Public - Private Partnerships (PPPs); Ecotourism
Donations and crowdfunding	
Public finance instruments	Other innovative instruments: Regulation and planning standards; Exploitation of existing regulatory requirements
Debt financing instruments	
Equity investments	

(Source: own elaboration)

With the presented content, decision-makers can gain valuable insights into effective financing strategies for NbS and GI, having access to scientific-based evidence of the effectiveness of these solutions and the



holistic benefits they offer, including enhanced urban resilience, improved quality of life, and long-term economic advantages.

The report should serve as a practical guide and support the planning and execution of NbS and GI projects, ultimately contributing to more sustainable and liveable urban environments across the EU.

# 1. European Structural and Investment Funds (ESIF)

Category of instruments	Grants (from public and private organizations)	
Type of instruments	<b>European Structural and Investment Funds - ESIF</b>	
Description	<p>European Structural and Investment Funds (ESIF): As one of the largest investment instruments under the EU budget, the ESI Funds support the territorial, economic and social cohesion of Europe's regions, as well as their resilience and recovery from the crisis faced in the past years. It presents several opportunities to finance GI projects, including in urban areas. They comprise of:</p> <ul style="list-style-type: none"> <li>• <b>EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF)</b> It's designed to strengthen economic, social and territorial cohesion in the European Union. It includes Interreg for transnational projects.</li> <li>• <b>COHESION FUND</b> It provides support to Member States with a gross national income per capita below 90% EU-27 average to strengthen the economic, social and territorial cohesion of the EU. This fund supports investments in the field of environment and trans-European networks in the area if transport infrastructure.</li> </ul> <p>Within ESIF, the Cohesion Fund and the European Regional Development Fund are most suitable for urban GI. These funds are nationally distributed through the so called Operational Programmes (OPs), which are detailed plans for the implementation of concrete actions for each Member State. Beneficiaries of the funding can be public bodies, some private sector organisations [especially small businesses], universities, associations, NGOs and voluntary organisations</p>	
Case study example:  <b>Park around Służewiecki Pond</b>  Warsaw, Poland	<b>General description</b>	
	The project revitalized a neglected area around Służewiecki pond in Warsaw, transforming it into a 5,11-hectare recreational park. The initiative aimed to restore the pond's water retention capacity and improve the surrounding green space for public use.	
	<b>NbS interventions</b>  The project created a new park, which replaced a previously undeveloped and littered area. Along with the restoration of the water retention function, a viewing platform in the form of a pier was erected and a footbridge over the Służewiecki stream, which flows into the pond, was built close to the dam. To provide a habitat for waterfowl, three artificial islands with aquatic vegetation were constructed in the pond. The creation of the park involved banking up the earth into observation mounds, laying footpaths to ensure easy access for people with disabilities and parents with prams, and installing outdoor exercise equipment, lighting, and furniture such as benches. Tree, shrubs, ground cover plants, and perennials were planted, and a themed garden for perennials was opened.	<b>Social/environmental benefits</b> <ul style="list-style-type: none"> <li>• Climate Change mitigation</li> <li>• Enhancement of urban biodiversity</li> <li>• Sustainable water management</li> <li>• Air quality improvement</li> <li>• Urban heat-island reduction</li> </ul>
	<b>Funding</b>  The project was funded by a total investment of €2,2 million, with €1,47 million contributed by the EU's Cohesion Fund under the "Infrastructure and Environment" Operational Programme. This funding supported comprehensive development and ensured alignment with climate change adaptation and risk prevention priorities.	
<b>References</b> <ul style="list-style-type: none"> <li>• <a href="https://ec.europa.eu/regional_policy/projects/projects-database/new-park-created-around-warsaws-suzewiecki-pond_en">https://ec.europa.eu/regional_policy/projects/projects-database/new-park-created-around-warsaws-suzewiecki-pond_en</a></li> <li>• <a href="https://en.um.warszawa.pl/-/two-new-parks">https://en.um.warszawa.pl/-/two-new-parks</a></li> </ul>		



## 2. European Fund for Strategic Investments

Category of instruments	Grants (from public and private organizations)
Type of instruments	<b>European Fund for Strategic Investments</b>
Description	<p>It is the core of the investment plan for Europe, aimed at boosting long-term economic growth and competitiveness in the European Union. The fund aims to help use public funding, to mobilise private investment for a wide range of projects carried out in the EU.</p> <p>The projects cover areas such as infrastructure, research and innovation, education, health, information and communications technology and other areas.</p>
Case study example:	<p><b>General description</b></p> <p>The project is undergoing and consists of a <u>multi-annual municipal investment programme</u> of the City of Banská Bystrica in Slovakia in the period 2022-2027. The European Investment Bank framework loan supports eligible schemes coherent with the City's development strategy. It contributes to the modernisation of municipal public infrastructure and services.</p> <p>The project will support improvements in urban transport networks and mobility, green areas and public spaces (including public lighting), public buildings dedicated to education, social care and culture (including energy efficiency measures), water and solid waste management, and other urban infrastructure and services.</p> <hr/> <p><b>Funding</b></p> <p>The project is co-financed by the European Investment Bank (EIB) framework, with EIB contributing \$21,96 million towards a total project cost of \$69,18 million.</p> <p>EIB's long-term financing offers favourable terms, including an extended grace period and a prolonged availability period with flexible drawdown options. These conditions will significantly enhance the city's financing structure and make the investments more affordable.</p> <p>Moreover, EIB's involvement sends a positive signal to the financial markets, demonstrating the city's commitment to implementing its comprehensive investment program. This endorsement from a reputable institution like EIB is likely to boost investor confidence in the city's economic initiatives.</p> <hr/> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://www.eib.org/en/projects/pipelines/all/20220131">https://www.eib.org/en/projects/pipelines/all/20220131</a></li> <li>• <a href="https://ewsdata.rightsindevelopment.org/projects/20220131-banska-bystrica-sustainable-urban-development-fl/">https://ewsdata.rightsindevelopment.org/projects/20220131-banska-bystrica-sustainable-urban-development-fl/</a></li> </ul>





### 3. Biodiversa (European Biodiversity Partnership)

Category of instruments	Grants (from public and private organizations)	
Type of instruments	Biodiversa (European Biodiversity Partnership)	
Description	<p><b>Biodiversa+</b> is the European Biodiversity Partnership supporting research on biodiversity with an impact on society and policy. It was jointly developed by BiodivERsA and the European Commission as part of the EU Biodiversity Strategy 2030 and will contribute to the ambition that “by 2030, nature in Europe is back on a path of recovery, and that by 2050 people are living in harmony with Nature”. It aims at a global budget of &gt;800 Mio € by combining in-cash and in-kind resources from its Partners and including €165 M by the European Commission over 7 years.</p>	
<p>Case study example:</p> <p><b>Managing urban Biodiversity and Green Infrastructure to increase city resilience - URBANGAIA PROJECT</b></p> <p>Ghent, Vilnius, Leipzig, Coimbra</p>	<p><b>General description</b></p> <p>The project had the explicit aim to develop realistic indicators to evaluate, manage, and develop performant Green and Blue Infrastructures (GBI) in cities and intensively managed landscapes. The project had 3 scientific objectives:</p> <ol style="list-style-type: none"> <li>1. Verify the contribution of urban GBI to ecological resilience in four case study contexts (i.e. Vilnius, Leipzig, Ghent, and Coimbra);</li> <li>2. Verify urban GBI functionality and their impact on biodiversity through the provision of support to ecosystem functions;</li> <li>3. Value ecosystem services provided by urban GBI according to an integrated valuation process considering multiple values (ecological, socio-economic) and units (monetary and non-monetary)</li> </ol>	
	<p><b>NbS interventions</b></p> <p>NbS for improving well-being in urban areas.</p> <p>The project combined different approaches in its actions: Ecological analysis of case studies, ecological characterization of the study areas, validation of data by the stakeholders, mapping ecosystem functions and biodiversity, and development of spatial indicators.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Increased quality and quantity of green and blue infrastructures</li> <li>• Increased awareness of NBS solution &amp; their effectiveness and co-benefits</li> <li>• Increased stakeholder awareness &amp; knowledge about NBS</li> <li>• Social learning about location &amp; importance of NBS</li> <li>• Increased well-being and willingness to invest in NBS</li> </ul>
	<p><b>Funding</b></p> <p>This research was funded through the 2015-2016 BiodivERsA COFUND call for research proposals, with the national funders: FCT (Science and technology foundation of Portugal), PT-DLR (Project Management Agency in Germany for the implementation of R&amp;D funding programmes for ministries), RCL (Research Council of Lithuania), BelSPO (Federal government body responsible for research policy in Belgium) and MINECO (Ministry of Economy and Competitiveness of Spain) with a total amount of € 692.715</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://www.biodiversa.eu/2022/10/31/urbangaia/">https://www.biodiversa.eu/2022/10/31/urbangaia/</a></li> <li>• <a href="https://networknature.eu/casestudy/18417">https://networknature.eu/casestudy/18417</a></li> </ul>	



## 4. European - LIFE & Horizon Europe

Category of instruments	Grants (from public and private organizations)	
Type of instruments	European - LIFE & Horizon Europe	
Description	<ul style="list-style-type: none"> <li>• <a href="#">Horizon Europe</a>: the EU Framework Programme for Research and Innovation can support NBS projects with an innovation or research component. The specific opportunities are determined by EU biennial work programmes and specific calls for proposals.</li> <li>• <a href="#">LIFE Programme</a>: provides co-funding for projects in the area of the environment (including nature and biodiversity) and climate change adaptation and mitigation. The specific opportunities are determined by EU multi-annual work programmes and annual calls for proposals.</li> </ul>	
Case study example: <b>Horizon NetZeroCities - Zagreb's Pilot City Activity: Activating Green Courtyards for Climate Neutrality (AGC-CN)</b> Zagreb, Croatia	<p><b>General description</b></p> <p>As part of the Horizon Europe programme, the EU has launched a Mission “<a href="#">100 Climate-Neutral and Smart Cities by 2030</a>”. The objectives of the mission are to achieve 100 climate-neutral and smart European cities by 2030 and to ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050.</p> <p>The project NetZeroCities comes in support of the abovementioned EU’s Mission and assists cities to overcome the current structural, institutional and cultural barriers they face to achieve climate neutrality by 2030. Zagreb is one of the cities involved in the project.</p>	
	<p><b>NBS interventions</b></p> <p>The key pilot activities in Zagreb involve implementing NBS in apartment and business courtyards, incorporating elements such as tree planting, green spaces, permeable surfaces, sun-reflecting surfaces, compost facilities, urban furniture, LED lighting, and sustainable practices like rainwater repurposing.</p> <p>The initiative also includes developing a scalable framework, enhancing local capacity for net-zero solutions through workshops and training, building collective and institutional capacities, forming a dedicated city administration team for climate neutrality, and reinforcing public participation platforms.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Climate Change mitigation</li> <li>• Enhancement of urban biodiversity</li> <li>• Sustainable water management</li> <li>• Air quality improvement</li> <li>• Urban heat-island reduction</li> <li>• Health and well-being</li> <li>• Increase awareness of NBS solution &amp; their effectiveness and co-benefits</li> </ul>
	<p><b>Funding</b></p> <p>NetZeroCities is an EU project funded through three contracts: <a href="#">NetZeroCities</a>, <a href="#">SGA1</a> and <a href="#">SGA2</a>.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://netzerocities.eu/zaqrebs-pilot-city-activity-activating-green-courtyards-for-climate-neutrality-agc-cn/">https://netzerocities.eu/zaqrebs-pilot-city-activity-activating-green-courtyards-for-climate-neutrality-agc-cn/</a></li> </ul>	



<p>Case study example: <b>LIFE Metro Adapt</b> Milan, Italy</p>	<p><b>General description</b></p> <p>The LIFE Metro Adapt project aimed at mainstreaming climate change adaptation strategies in the Metropolitan Area of Milan (CMM). More specifically, the project aimed at fostering the creation of a common well-structured governance related to climate change adaptation among the local authorities and produce tools that allow local authorities to implement cost-effective climate change adaptation strategies and policies adapted to the local context.</p> <p>An important part of the project was devoted to share and disseminate the project tools and good practices with the other Italian and EU metropolitan areas.</p>	
	<p><b>NbS interventions</b></p> <p>The project had several objectives, including:</p> <ul style="list-style-type: none"> <li>- establish and promote NBS according to a multi-objectives approach (flood risk and heat-island reduction, together with regeneration of neglected urban space) that enhances the technical knowledge required for their design and implementation of NBS at a local level;</li> <li>- Enhance bottom-up initiatives increasing citizens' awareness and engagement in climate change adaptation strategies</li> </ul> <p>During the project's lifetime, 2 demonstrative NbS facilities were realised thanks to the technical and economic commitment of CAP Holding (multi-utility company in charge of the Integrated Water Service in the Metropolitan City of Milan):</p> <ol style="list-style-type: none"> <li>1. Retrofitting of public parking with sustainable drainage systems.</li> <li>2. Restoration of a canal network to increase retention capacity.</li> </ol>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood risk mitigation</li> <li>• Urban heat-island reduction</li> <li>• Increased awareness of NBS solution &amp; their effectiveness and co-benefits</li> </ul>
	<p><b>Funding</b></p> <p>The project was funded by the Programme for the Environment and Climate Action (LIFE), Climate Change Adaptation. The project had a total budget of € 1,306 million.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://www.lifemetroadapt.eu/en/">https://www.lifemetroadapt.eu/en/</a></li> </ul>	



## 5. National and regional government grants

Category of instruments	Grants (from public and private organizations)	
Type of instruments	<b>National and regional government grants</b>	
Description	Local authorities may access grants for environmental projects - including GI - provided by upper levels of government	
Case study example: <b>Green projects in Ljubljana</b>  Ljubljana, Slovenia	<p><b>General description</b></p> <p>Ljubljana, the capital of Slovenia, has gained recognition for its comprehensive approach to urban greenery, integrating nature-based solutions (NBS) to enhance urban sustainability and resilience. The city has implemented various projects aimed at increasing green spaces, promoting biodiversity, and improving the quality of urban life.</p> <p>These efforts have been acknowledged at the European level: in 2016, Ljubljana was awarded the prestigious title of European Green Capital.</p>	
	<p><b>NbS interventions</b></p> <p>Green network plan: Ljubljana has developed a strategic plan to expand and interconnect green spaces through green corridors. This comprehensive plan includes parks, urban forests, and riverbank restoration projects.</p> <p>Community gardens: the city has established multiple community gardens across Ljubljana. These initiatives serve multiple purposes: promoting urban agriculture, enhancing local food security, engaging residents in sustainable practices, etc.</p> <p>Additionally, some of these community garden projects have been supported through crowdfunding efforts, further involving citizens in the city's green initiatives.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood risk mitigation</li> <li>• Urban heat-island reduction</li> <li>• Increased awareness of NBS solution &amp; their effectiveness and co-benefits</li> <li>• Increased opportunities for social interaction</li> <li>• Increased green space area</li> </ul>
	<p><b>Funding</b></p> <p>The city's green infrastructure projects have been supported by national funds and EU grants, including resources from the Cohesion Fund and LIFE programme.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://iclei-europe.org/member-in-the-spotlight/ljubljana">https://iclei-europe.org/member-in-the-spotlight/ljubljana</a></li> <li>• <a href="https://www.ebrdgreencities.com/policy-tool/pedestrianisation-and-car-free-zones-ljubljana-slovenia-2/">https://www.ebrdgreencities.com/policy-tool/pedestrianisation-and-car-free-zones-ljubljana-slovenia-2/</a></li> <li>• <a href="https://una.city/nbs/ljubljana/urban-gardening-ljubljana">https://una.city/nbs/ljubljana/urban-gardening-ljubljana</a></li> </ul>	



## 6. Philanthropic contributions

Category of instruments	Donations and crowdfunding	
Type of instruments	<b>Philanthropic contributions</b>	
Description	Donations are one of the simplest but most prevalent mechanisms for funding NBS projects. GI projects have traditionally relied on charitable contributions from foundations, citizens, private sector donors, etc.	
Case study example: <b>The Peverelli Living Green Wall project</b> Milan, Italy	<p><b>General description</b></p> <p>The Peverelli Living Green Wall in Milan was funded and developed as part of a broader urban regeneration project known as Porta Nuova, which is one of Europe's most significant urban redevelopment projects. This is a remarkable example of a vertical garden, born from the collaboration between Peverelli (company specialised in the design, construction and maintenance of green and vertical greenery) and COIMA (group for the investment, development and management of property assets on behalf of international and Italian institutional investors), designed to integrate nature into the urban landscape.</p>	
	<p><b>NbS interventions</b></p> <p>This vertical garden was designed to blend the shopping mall seamlessly with its natural surroundings. It features a total of 44,000 plants from 200 different species, covering an area of 1,262 square metres.</p>	<p><b>Social/environmental benefits</b></p> <p>The main environmental and social benefits of the NBS implementation are:</p> <ul style="list-style-type: none"> <li>• Carbon-sequestration service plants</li> <li>• Reducing pollution and improving air quality</li> <li>• Promoting biodiversity and serving as a habitat for urban wildlife</li> </ul>
	<p><b>Funding</b></p> <p>The Peverelli Living Green Wall project in Milan succeeded due to a strategic combination of public-private partnerships, attracting substantial investment from institutional funds like the Qatar Investment Authority. The project was developed by COIMA, which brought expertise in sustainable urban development. It benefited from government support through incentives and regulatory frameworks promoting eco-friendly initiatives. This collaboration ensured financial viability, environmental sustainability, and integration with Milan's broader urban regeneration goals, making it a model for successful urban greening.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/milano/italys-largest-living-wall">https://una.city/nbs/milano/italys-largest-living-wall</a></li> <li>• <a href="https://www.peverelli.it/images/pdf/c-living-greenwall.pdf">https://www.peverelli.it/images/pdf/c-living-greenwall.pdf</a></li> </ul>	



## 7. Crowdfunding

Category of instruments	Donations and crowdfunding	
Type of instruments	Crowdfunding	
Description	Crowdfunding consists in raising funds for a project through the voluntary donation of small amount from a large number of individuals. This instrument is suitable especially for supporting small-scale projects that are not necessarily suitable for other financing instruments.	
Case study example: <b>Urban Greening through Crowdfunding Platform (crowdfunding.gent)</b> Ghent, Belgium	<p><b>General description</b></p> <p>In Ghent, Belgium, urban greening initiatives have been successfully implemented through a unique approach using a crowdfunding platform: Crowdfunding.gent (<a href="https://crowdfunding.gent/">https://crowdfunding.gent/</a>) This initiative enables community-driven projects focused on enhancing green spaces in the city.</p>	
	<p><b>NbS interventions</b></p> <ul style="list-style-type: none"> <li>• Green roofs and walls: installation of green roofs and vertical gardens to enhance building aesthetics and improve insulation.</li> <li>• Community gardens: establishing gardens that provide fresh produce, promote biodiversity, and offer educational opportunities.</li> <li>• Tree planting initiatives: expanding urban tree coverage to improve air quality and provide shade in public areas.</li> </ul>	<p><b>Social/environmental benefits</b></p> <p>The main environmental and social benefits of this crowdfunding are:</p> <ul style="list-style-type: none"> <li>• Increased social cohesion: the collaborative nature of the projects fosters social cohesion, bringing together diverse community members to work towards common goals</li> <li>• Reduced urban heat island effect</li> <li>• Improved air quality</li> </ul>
	<p><b>Funding</b></p> <p>Since its launch in 2015, Ghent's crowdfunding platform has funded 150 projects, engaging over 10,000 people and raising more than €545,000. The average project funding is about €8,000. The platform supports projects with societal benefits, particularly those focused on climate adaptation and urban greening, and offers municipal subsidies to eligible projects, enhancing community participation and urban sustainability efforts.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://climate-adapt.eea.europa.eu/en/metadata/case-studies/ghent-crowdfunding-platform-realising-climate-change-adaptation-through-urban-greening">https://climate-adapt.eea.europa.eu/en/metadata/case-studies/ghent-crowdfunding-platform-realising-climate-change-adaptation-through-urban-greening</a></li> </ul>	



## 8. Innovative use of public budget

Category of instruments	Public Finance Instruments	
Type of instruments	Innovative use of public budget	
Description	<p>The creation, improvement and maintenance of NBS and GI are often funded from local authorities' own budgets. However, budgets specifically for nature and green space are usually insufficient to cover these costs. A partial solution is for local authorities to find creative ways of channelling funding from other relevant government departments. For example, cities could pool fundings from different departments within the city administration to deliver GI projects with cross-sectoral benefits.</p> <p><b><u>PUBLIC HEALTH BUDGETS</u></b> Given the growing evidence base on the benefits of nature to physical and mental health, public health budgets are one of the most promising options. Local authorities could work with the public health services to develop a funding model in which direct capital investments are made into sites that are subsequently used in health programmes involving outdoor activities. See "<a href="#">Green Social Prescribing</a>".</p> <p><b><u>POLICE BUDGETS</u></b> Another source worth exploring, given emerging evidence that well-designed, well-maintained green infrastructure can help reduce crime. Some of the funding for urban green space maintenance and improvements could thus come from policing budgets</p> <p><b><u>EDUCATION BUDGETS</u></b> In densely populated urban areas, school grounds are often an important oasis of green for citizens and wildlife alike. Collaborating with departments of education to use funding grants for the development of NBS in school grounds presents win-win opportunities for students, society and the environment.</p>	
Case study example: <b>PUBLIC HEALTH BUDGET: Gröna Rehab (Green Rehab)</b> Göteborg, Sweden	<p><b>General description</b></p> <p>The Green Rehab project, located in Göteborg, Sweden, focuses on nature-based rehabilitation for workers suffering from stress-related illnesses or mild depression. Established in 2006 and ongoing, this initiative combines traditional therapies with the therapeutic benefits of nature to aid recovery. Participants engage in activities within the botanical garden and surrounding green areas, promoting improved mental health and well-being.</p> <p>The goal is that a participant who completes the programme will go back to work again and achieve a better quality of life.</p>	
	<p><b>NBS interventions</b></p> <p>The programme utilises various NBS, including:</p> <ul style="list-style-type: none"> <li>• Botanical and community gardens: Participants engage in gardening activities such as sowing, harvesting, and pruning, which facilitate relaxation and connection with nature.</li> <li>• Parks and urban forests: Nature walks are integral to the program, allowing participants to experience the calming effects of natural surroundings.</li> </ul>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Increased opportunities for social interaction</li> <li>• Increased involvement of locals in the management of green spaces</li> <li>• Improved mental health</li> <li>• Increased awareness of NBS and their benefits</li> <li>• Increased green space area</li> <li>• Increase in agriculture production (with economic impacts)</li> </ul>



	<ul style="list-style-type: none"> <li>• Creative activities: During the winter, activities involving natural materials and body awareness sessions help maintain engagement and therapeutic benefits.</li> </ul>			
	<p><b>Funding</b></p> <p>The program is partially funded by the public regional health budget. This connection highlights the program's integration into the healthcare system, focusing on preventative care and rehabilitation for individuals with stress-related conditions. By offering nature-based therapy, the project aims to reduce healthcare costs associated with stress and mental health disorders while improving participants' well-being. The investment from the health budget underscores the value placed on alternative therapeutic approaches to complement traditional medical treatments.</p>			
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/goteborg/green-rehab">https://una.city/nbs/goteborg/green-rehab</a></li> <li>• <a href="https://www.greenforcare.eu/wp-content/uploads/2021/01/green4c_case-studies-GRO%CC%88NA-REHAB.pdf">https://www.greenforcare.eu/wp-content/uploads/2021/01/green4c_case-studies-GRO%CC%88NA-REHAB.pdf</a></li> </ul>			
<p>Case study example: <b>POLICE BUDGET: RUIS (Regeneration of Urban Infrastructure and Safety)</b></p> <p>Palermo, Italy</p>	<p><b>General description</b></p> <p>The project RUIS (Regeneration of Urban Infrastructure and Safety) is carried out by the municipality of Palermo, in order to improve the urban resiliency of the intervention area, with the creation of further green areas in neighbourhoods dealing with problems of heatwaves and environmental degradation.</p> <p>The project also has the goal of increasing territorial security and urban resilience capacity; improving urban performance, also with reference to sustainable mobility; and developing practices - such as those of NGOs and the civil service - for social inclusion and the creation of new metropolitan welfare models, also regarding the adaptation of infrastructures aimed at sustaining social and cultural, educational and didactic services, as well as for cultural and educational activities promoted by public and private entities.</p> <table border="1" data-bbox="376 962 2092 1241"> <tr> <td data-bbox="376 962 1245 1241"> <p><b>NbS interventions</b></p> <p>The area of interventions was selected according to natural (e.g. coastal lines) or artificial (e.g. railway) delimitations. Focus: the creation of new green areas, and transformation of previously derelict areas.</p> <p>The areas of intervention are all highly populated, with a high index of social decay. The interventions will regenerate and expand existing areas within those neighbourhoods, by planting new trees and arboreal species. In addition, a playground for kids and a recreational area will be implemented to improve social cohesion.</p> </td> <td data-bbox="1245 962 2092 1241"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Improved air quality</li> <li>• Increased green space area</li> <li>• Increased citizen safety</li> <li>• Improved liveability, social interaction and inclusion</li> </ul> </td> </tr> </table> <p><b>Funding</b></p> <p>The project is funded through a mix of public funds from both local authorities and the national government, as well as private contributions from foundations. With a total investment of €4 million, the project is well-supported financially, ensuring its successful implementation. This diverse funding strategy allows for sustained financial backing and effective coordination between different levels of government and private stakeholders, enhancing the project's resilience and long-term viability.</p> <p><b>References</b></p>		<p><b>NbS interventions</b></p> <p>The area of interventions was selected according to natural (e.g. coastal lines) or artificial (e.g. railway) delimitations. Focus: the creation of new green areas, and transformation of previously derelict areas.</p> <p>The areas of intervention are all highly populated, with a high index of social decay. The interventions will regenerate and expand existing areas within those neighbourhoods, by planting new trees and arboreal species. In addition, a playground for kids and a recreational area will be implemented to improve social cohesion.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Improved air quality</li> <li>• Increased green space area</li> <li>• Increased citizen safety</li> <li>• Improved liveability, social interaction and inclusion</li> </ul>
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	<ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/palermo/ruis-project-urban-regeneration-and-security">https://una.city/nbs/palermo/ruis-project-urban-regeneration-and-security</a></li> <li>• <a href="https://renature-project.eu/compendium/130">https://renature-project.eu/compendium/130</a></li> </ul>		
<p>Case study examples: <b>EDUCATION BUDGET:</b> <b>Nature-orientated Playgrounds</b>  Poznań, Poland</p>	<p><b>General description</b></p> <p>The Poznań Nature-based Solutions (NbS) exemplar case study highlights efforts to incorporate green infrastructure into urban areas to improve environmental conditions and enhance the quality of life for residents. This initiative is driven by the need to address limited access to green spaces in densely populated city regions. It involves creating various natural spaces, including urban parks and school gardens, to provide ecological and educational benefits.</p> <table border="1" data-bbox="385 491 2080 1023"> <tr> <td data-bbox="385 491 1245 1023"> <p><b>NbS interventions</b></p> <p>The project included several interventions, such as:</p> <ul style="list-style-type: none"> <li>• Natural playgrounds: Designing playgrounds with natural elements to encourage children's physical activity and creativity while enhancing their interaction with nature</li> <li>• Floating gardens: to improve the river/water ecosystem, introducing more biodiversity into the city by providing shelter, feeding, and breeding opportunities.</li> <li>• Open gardens: a combination of the idea of a social garden and a natural playground, open to children and adults, especially those using the kindergarten, the neighbouring nursery, and primary school, as well as residents of nearby tenement houses.</li> <li>• Installation of elements made of natural materials (insect houses, garden wooden pots/flower beds filled with compost soil for planting, live willow huts, numerous climbers plants, or fruit bushes).</li> </ul> </td> <td data-bbox="1245 491 2080 1023"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Enhancing sustainable urbanisation</li> <li>• Increase communities' sense of ownership</li> <li>• Increase social interaction</li> <li>• Creation of green jobs relating to construction &amp; maintenance of NBS</li> <li>• Increased well-being</li> <li>• Increased willingness to invest in NBS</li> <li>• Educational opportunities</li> <li>• Improved air quality</li> <li>• Reduced urban heat island effect</li> </ul> </td> </tr> </table> <p><b>Funding</b></p> <p>Initial financing focused on innovation in relation to a hybrid model of financing NBS by <b>combining different departmental budgets</b>, with external kindergarten budgets, and with resources from the Connecting Nature project. To scale up the financing to include implementation at primary schools, additional external funding from the EU was sought.</p> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://networknature.eu/casestudy/24518">https://networknature.eu/casestudy/24518</a></li> <li>• <a href="https://www.sciencedirect.com/science/article/pii/S0264837718313383">https://www.sciencedirect.com/science/article/pii/S0264837718313383</a></li> </ul>	<p><b>NbS interventions</b></p> <p>The project included several interventions, such as:</p> <ul style="list-style-type: none"> <li>• Natural playgrounds: Designing playgrounds with natural elements to encourage children's physical activity and creativity while enhancing their interaction with nature</li> <li>• Floating gardens: to improve the river/water ecosystem, introducing more biodiversity into the city by providing shelter, feeding, and breeding opportunities.</li> <li>• Open gardens: a combination of the idea of a social garden and a natural playground, open to children and adults, especially those using the kindergarten, the neighbouring nursery, and primary school, as well as residents of nearby tenement houses.</li> <li>• Installation of elements made of natural materials (insect houses, garden wooden pots/flower beds filled with compost soil for planting, live willow huts, numerous climbers plants, or fruit bushes).</li> </ul>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Enhancing sustainable urbanisation</li> <li>• Increase communities' sense of ownership</li> <li>• Increase social interaction</li> <li>• Creation of green jobs relating to construction &amp; maintenance of NBS</li> <li>• Increased well-being</li> <li>• Increased willingness to invest in NBS</li> <li>• Educational opportunities</li> <li>• Improved air quality</li> <li>• Reduced urban heat island effect</li> </ul>
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## 9. Grey infrastructure taxes/charges

Category of instruments	Public Finance Instruments	
Type of instruments	Grey infrastructure taxes/charges	
Description	<p>Charges on the use of grey infrastructure can act as an incentive to reduce use by implementing green infrastructure. In the same way, taxes on grey infrastructure can act as an incentive to replace this solution with NBS/GI alternatives.</p> <p>Currently, some cities are employing a mechanism to promote the adoption of Sustainable Drainage Systems (SuDS) on private properties. Water utilities calculate sewage treatment charges based on the amount of stormwater each property contributes to the sewage network. They use the property's sealed surface area or the size of the area draining into the sewage system as a proxy for this contribution. This approach aims to encourage property owners to install SuDS to reduce their charges.</p>	
<p>Case study example:</p> <p><b>Stormwater management measures and new pricing systems in the City of Hamburg</b></p> <p>Hamburg, Germany</p>	<p><b>General description</b></p> <p>In Hamburg, the utility responsible for wastewater drainage and treatment, HAMBURG WASSER, introduced in 2012 a stormwater fee for restoring ecosystems to provide more permeable surfaces, such as green roofs, and to recover some of its costs for sewage network renewal and wastewater management. The new pricing system involves calculating stormwater management charges (separate from the general wastewater charge) based on the amount of sealed area connected to the sewer system of each property. Similar charges exist in other German cities.</p> <p>The Hamburg Department of Stormwater Management set up also a common Hamburg-wide GIS system integrating all the map data on individual properties necessary for stormwater planning and for computing the stormwater fee. The fee is embedded in a mix of mutually supporting instruments for stormwater management, on private and public property.</p>	
	<p><b>NbS interventions</b></p> <p>The scheme promotes the implementation of SuDS, such as green roofs, permeable pavements, and rain gardens, to manage stormwater naturally and improve infiltration.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood risk mitigation</li> <li>• Watershed restoration and improved water quality</li> <li>• Green space management</li> </ul>
	<p><b>Funding</b></p> <p>This is a new funding scheme for stormwater management measures: the stormwater fee works by charging a sliding fee according to the impermeable area of a property and the degree to which the property is connected to the sewage network.</p> <p>The stormwater charge was implemented <u>in addition</u> to a wastewater charge to recover costs of drainage and treatment. The sewage charge is based on a cost recovery principle and amounted to €2,11/m<sup>3</sup>, estimated based on drinking water supply volume. This compares to the stormwater charge aimed at cost recovery of €0,73/m<sup>2</sup> sealed area per year.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://interlace-hub.com/stormwater-fee-hamburg">https://interlace-hub.com/stormwater-fee-hamburg</a></li> <li>• <a href="https://iwaponline.com/wst/article-abstract/76/6/1523/30968/Synergistic-benefits-between-stormwater-management?redirectedFrom=fulltext">https://iwaponline.com/wst/article-abstract/76/6/1523/30968/Synergistic-benefits-between-stormwater-management?redirectedFrom=fulltext</a></li> </ul>	



## 10. Subsidies

Category of instruments	Public Finance Instruments	
Type of instruments	Subsidies	
Description	Governments can provide a subsidy to cover (part of) the costs of installing GI on private property. This can leverage off the private benefits to landowners from green infrastructure assets, to stimulate additional investments and increase public benefits.	
Case study example: Scheme for the purchase of rainwater management installations, Bratislava, Slovakia	<p><b>General description</b></p> <p>The city of Bratislava in Slovakia has implemented a <u>subsidy scheme</u> to promote sustainable rainwater management practices by encouraging the installation of rainwater harvesting systems. This initiative aims to mitigate flooding, enhance water conservation, and improve the city's resilience to climate change impacts.</p> <p>As part of the 'Bratislava Turns Green' project, the municipality encourages households to contribute to protecting the city from pluvial flooding through a subsidy scheme for the purchase of stormwater management systems.</p> <p>The majority of successful applicants installed rainwater catchment tanks, created rain gardens, replaced impermeable surfaces with permeable materials or installed green roofs (Covenant of Mayors, 2017).</p>	
	<p><b>NBS interventions</b></p> <p>Water retention measures control flood risk: Water reservoirs, rainwater gardens, small green roofs, adjustment of pavements, use of permeable materials, etc.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood risk mitigation</li> <li>• Water conservation</li> <li>• Increased awareness of NBS and their benefits</li> </ul>
	<p><b>Funding</b></p> <p>The subsidy is financed from the municipal budget of the city of Bratislava. The amount of the total allocation was €50,000 in 2016 and was re-conducted in 2017 with a total of €40,000. This sum is to be distributed among approximately 40 to 50 applicants. Only private organisations and households are eligible.</p> <p>The subsidy always covers 50% of the total costs of the installations, up to a maximum amount of €1,000 per application. The scheme also offers consultancy to applicants on their project's implementation and disseminates information about the projects to raise awareness. Subsidy applicants are assessed by the Steering Committee of the subsidy scheme (consisting of the Vice Mayor, the Office of the Chief Architect, the Department of Strategies and Projects, and the Department of the Environment).</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://eu-mayors.ec.europa.eu/en/node/162">https://eu-mayors.ec.europa.eu/en/node/162</a></li> </ul>	



## 11. Land sales/leases

Category of instruments	Public Finance Instruments	
Type of instruments	Land sales/leases	
Description	<p>Government-owned land can provide upfront capital from land sales or leases. The revenues can then be used to develop GI projects.</p> <p>This solution can be used in conjunction with a trust/endowment whereby an organisation is entrusted with the management of revenues from the land sales, creating in this way a specific fund.</p>	
Case study example: <b>NBS in the city of Leipzig</b> Leipzig, Germany	<p><b>General description</b></p> <p>The city of Leipzig in Germany has incorporated GI projects into its urban development strategy to address challenges like urban sprawl, loss of green spaces, and environmental degradation. To finance these initiatives, the city has implemented innovative funding mechanisms, notably leveraging its real estate assets. The city's approach involves selling or leasing underutilized government-owned land to private developers.</p>	
	<p><b>NBS interventions</b></p> <p>Parks and green corridors: funding was used to create and enhance parks and green corridors, promoting biodiversity and providing recreational spaces for residents.</p> <p>Urban forests: the city planted urban forests to improve air quality and mitigate urban heat island effects.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Improved air quality</li> <li>• Reduced urban heat island effect</li> <li>• Improved social cohesion and access to urban green spaces</li> </ul>
	<p><b>Funding</b></p> <p>Leipzig utilized a combination of land sales and leases to generate capital for its green infrastructure projects. The city sells or leases underutilized land to private developers, generating immediate capital for green initiatives. Additionally, a portion of these proceeds is allocated to a trust fund managed by a local environmental organization. This fund ensures the long-term maintenance of green spaces, supports new projects, and funds community engagement programs. This dual approach provides both immediate funding and long-term financial sustainability for Leipzig's green infrastructure, showcasing an effective model for urban environmental development.</p>	
	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://oppla.eu/casestudy/19312">https://oppla.eu/casestudy/19312</a></li> </ul>	



## 12. User fees

Category of instruments	Public Finance Instruments		
Type of instruments	<b>User fees</b>		
Description	Charging a fee for the use of green spaces such as sports pitches, renting parks for private events, or introducing a park entrance fee can raise revenues for their maintenance. This logic applies the "user-pays principle": it allows users of specific services or facilities to contribute to their maintenance. However, introducing mandatory fees for sites which were previously open access is likely to be unpopular with residents. An alternative would be to introduce voluntary fees or donations, following e.g. the model of most museums in the UK where entrance is free, but visitors are encouraged to make donations.		
Case study examples <b>Pocket Parks</b> Budapest, Hungary	<p><b>General description</b></p> <p>The Pocket Parks project in Budapest is a community-driven initiative aimed at creating small green spaces in urban neighbourhoods to enhance environmental quality and social interaction. These parks typically occupy about 1400 square meters and serve multiple functions, including recreation, small-scale food production, and community gathering spaces. The project addresses urban challenges such as limited green space, climate resilience, and social cohesion.</p>		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p><b>NbS interventions</b></p> <ul style="list-style-type: none"> <li>• <b>Creation of pocket parks:</b> small parks in densely populated areas to offer residents access to nature and outdoor activities. These parks often replace concrete-covered courtyards, enhancing water retention and cooling the local microclimate.</li> <li>• <b>Community and urban gardens:</b> The initiative includes the development of community gardens, which allow residents to engage in gardening and small-scale food production. This fosters community engagement and provides educational opportunities for sustainable practices.</li> </ul> </td> <td style="vertical-align: top;"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Improved social cohesion and access to urban green spaces</li> <li>• Increased involvement of locals in the management of green spaces</li> <li>• Improved mental health</li> <li>• Increased awareness of NBS and their benefits</li> <li>• Improved air quality</li> <li>• Reduced urban heat island effect</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <ul style="list-style-type: none"> <li>• <b>Creation of pocket parks:</b> small parks in densely populated areas to offer residents access to nature and outdoor activities. These parks often replace concrete-covered courtyards, enhancing water retention and cooling the local microclimate.</li> <li>• <b>Community and urban gardens:</b> The initiative includes the development of community gardens, which allow residents to engage in gardening and small-scale food production. This fosters community engagement and provides educational opportunities for sustainable practices.</li> </ul>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Improved social cohesion and access to urban green spaces</li> <li>• Increased involvement of locals in the management of green spaces</li> <li>• Improved mental health</li> <li>• Increased awareness of NBS and their benefits</li> <li>• Improved air quality</li> <li>• Reduced urban heat island effect</li> </ul>
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	<p><b>Funding</b></p> <p>These small-scale projects are funded through municipal budgets, national funds, EU grants, and community support. Some parks sustain themselves financially through entrance fees, which help cover maintenance costs and ensure long-term viability.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/budapest/pocket-parks-budapest">https://una.city/nbs/budapest/pocket-parks-budapest</a></li> <li>• <a href="https://networknature.eu/casestudy/19444">https://networknature.eu/casestudy/19444</a></li> </ul>			



## 13. Developers contributions/charges

Category of instruments	Public Finance Instruments
Type of instruments	<b>Developers' contributions/charges</b>
Description	<p>Developers and governments share responsibility for providing infrastructure.</p> <p>Developers may contribute to infrastructures by:</p> <ul style="list-style-type: none"> <li>- the payment of money</li> <li>- providing land</li> <li>- constructing infrastructure on behalf of public authorities (referred to as 'works-in-kind').</li> </ul> <p>These are referred to as 'infrastructure contributions' and are delivered through a planning scheme amendment, a planning permit, or a building permit. One-off compulsory charges are paid by property developers as a condition of receiving development approval or as a condition of rezoning before development.</p>
Case study example:	<p><b>General description</b></p> <p>Hamburg, one of the largest and most dynamic cities in Germany, has faced significant population growth and consequent pressure on urban infrastructure. To manage this growth sustainably, the city has implemented an infrastructure contributions system involving both private developers and public authorities.</p> <p>In Vancouver, Canada, property developers must pay a Development Cost Levy before obtaining a building permit. For projects involving rezoning, developers are also required to pay a Community Amenity Contribution. The city uses these revenues to fund public facilities, including parks.</p> <p>Also in the UK, Section 106 (S106) agreements and the Community Infrastructure Levy (CIL) allow local authorities to charge developers a fee for new infrastructure works (including green spaces) (Drayson, 2014).</p>
<b>Developers contributions</b>	<p><b>Funding</b></p> <p>Developers are required to pay financial contributions as a condition for the approval of development projects. These contributions are used to directly finance the construction of necessary public infrastructure, such as roads, water and sewage networks, schools, and parks. In some cases, developers offer land as part of their contribution. This land is then used to build public infrastructure or to create green spaces and recreational areas.</p>
Hamburg, Germany	<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://link.springer.com/book/10.1007/978-3-319-29233-5">https://link.springer.com/book/10.1007/978-3-319-29233-5</a></li> <li>• <a href="https://policyexchange.org.uk/wp-content/uploads/2016/09/green-society.pdf">https://policyexchange.org.uk/wp-content/uploads/2016/09/green-society.pdf</a></li> <li>• <a href="https://vancouver.ca/home-property-development/development-cost-levies.aspx">https://vancouver.ca/home-property-development/development-cost-levies.aspx</a></li> </ul>



## 14. Betterment levies

N	14		
Category of instruments	Public Finance Instruments		
Type of instruments	<b>Betterment levies</b>		
Description	This strategy consists in payments by landowners or beneficiaries in an area to capture a portion of the land value gains or improvements resulting from public projects. This is applicable only when investments lead to a land value gain for new and existing properties in a defined area.		
<p>Case study example: <b>Experimental Sustainable Neighbourhood Erasmusveld</b></p> <p>The Hague, the Netherlands</p>	<p><b>General description</b></p> <p>The Proeftuin Erasmusveld is a project that aimed to develop a sustainable urban residential area focused on nature inclusivity, energy efficiency, and car-free living. It promotes healthy living for plants, animals, and people. As an experimental area, the neighbourhood supports several sustainability initiatives, including self-sufficient tiny houses and urban farmland. It intends to become a sustainability spot reference with features embracing the local sustainable water system, renewable energy, and a community vegetable garden fostering strong connections among residents.</p>		
	<table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The neighbourhood is a large, integrated green area covering 126 acres with 750 homes. It includes parks, green corridors, green belts, community gardens, sustainable urban drainage systems, and blue areas.</p> </td> <td> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Climate change mitigation and adaptation through reduced emissions</li> <li>• Better water management and storage</li> <li>• Improved social cohesion</li> <li>• Sustainable production and consumption</li> <li>• Increase of recreation opportunities</li> <li>• Real estate development</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The neighbourhood is a large, integrated green area covering 126 acres with 750 homes. It includes parks, green corridors, green belts, community gardens, sustainable urban drainage systems, and blue areas.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Climate change mitigation and adaptation through reduced emissions</li> <li>• Better water management and storage</li> <li>• Improved social cohesion</li> <li>• Sustainable production and consumption</li> <li>• Increase of recreation opportunities</li> <li>• Real estate development</li> </ul>
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	<p><b>Funding</b></p> <p>The sustainable neighbourhood has been developed with a mix of funding from the public local authority budget as well as earmarked public budget. There has also been corporate investment and direct funding (e.g. grants, subsidies, or self-financed projects by private entities).</p> <p>Funded with more than €4 million the project started with the municipality and Building Design Partnership (BDP) in response to a local policy. While the municipality manages the land and stakeholder meetings, BDP oversees development. The winning design is by marco.broekman, Workshop Architecten, and LINT Landscape Architecture. Platform Erasmusveld, including the municipality and four developers also funded the project. On the other hand, the urban farmland is developed by local NGOs and companies, with citizens constantly involved. The project follows the Masterplan Erasmusveld-Leywegzone 2008 and the Uitvoeringskader Erasmusveld 2011, focusing on sustainability.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/hague/experimental-sustainable-neighbourhood-erasmusveld">https://una.city/nbs/hague/experimental-sustainable-neighbourhood-erasmusveld</a></li> <li>• <a href="https://www.climatescan.nl/projects/6248/detail">https://www.climatescan.nl/projects/6248/detail</a></li> <li>• <a href="https://www.21stcenturydevelopment.org/case-studies/proeftuin-erasmusveld/">https://www.21stcenturydevelopment.org/case-studies/proeftuin-erasmusveld/</a></li> </ul>			



## 15. Sale of development rights and leases

N	15		
Category of instruments	Public Finance Instruments		
Type of instruments	<b>Sale of development rights and leases</b>		
Description	Commercial opportunities can be integrated with the project/infrastructure being delivered. For example, revenues for the creation of a new park could be raised partly by leasing certain areas to vendors or similar.		
Case study example: <b>Coronmeuse Eco-district</b>  Liège, Belgium	<p><b>General description</b></p> <p>The Liège Expo 2017 Masterplan aimed to transform both banks of the River Maas into a sustainable, eco-friendly area to improve access and quality of life. Although Liège did not win the Expo bid, the city decided to proceed with developing the Coronmeuse site into Wallonia's largest eco-district. The construction began in 2020 as part of Liège's Expo legacy with the Coronmeuse Eco-district design to be an innovative, low-traffic neighborhood integrating living, working, and relaxation. Reflecting Liège's long-term goal of becoming eco-friendly, it features 1,325 High Environmental Quality (HQE) residential units and different housing types, with local shops, restaurants, and businesses supporting supply chains and local production.</p>		
	<table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The project focuses on the creation of new green areas with interconnected features. The 25-hectare eco-district has a combination of blue infrastructure (e.g. rivers, channels, etc.), community gardens, green roofs, urban parks (or forests), and grey infrastructure featuring greens (e.g. riverbanks, lakeside greens).</p> </td> <td> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Natural styles of landscape design in urban development</li> <li>• Enabling opportunities for physical activity</li> <li>• Tourist and service sector development</li> <li>• Increase of recreation opportunities</li> <li>• Real estate development</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The project focuses on the creation of new green areas with interconnected features. The 25-hectare eco-district has a combination of blue infrastructure (e.g. rivers, channels, etc.), community gardens, green roofs, urban parks (or forests), and grey infrastructure featuring greens (e.g. riverbanks, lakeside greens).</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Natural styles of landscape design in urban development</li> <li>• Enabling opportunities for physical activity</li> <li>• Tourist and service sector development</li> <li>• Increase of recreation opportunities</li> <li>• Real estate development</li> </ul>
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	<p><b>Funding</b></p> <p>The Coronmeuse Eco-District in Liège has been developed through a diverse mix of funding sources, including public local authority budgets, EU funds, and private investments. The project has leveraged up to €21,7 million from the European Regional Development Fund (ERDF) for infrastructure and €5,845 million for pollution control. Additionally, asset-backed funding, such as leasing, has been used. In this context, the development rights were allocated to private entities like the Willemen Groep and the Neolegia consortium, guided by the social cooperative IMMO Coronmeuse and VenhoevenCS. This setup aligns with the sale of development rights and leases by enabling private developers to manage construction and financing, while the city benefits from infrastructure improvements and public amenities funded through a combination of public and private sources.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/liege/coronmeuse-eco-district">https://una.city/nbs/liege/coronmeuse-eco-district</a></li> <li>• <a href="https://landezine-award.com/eco-quartier-coronmeuse-rives-ardentes/">https://landezine-award.com/eco-quartier-coronmeuse-rives-ardentes/</a></li> <li>• <a href="https://projeturbain.net/wp-content/uploads/2018/11/rapport_sc3a9minaire_doumer_sabau.pdf">https://projeturbain.net/wp-content/uploads/2018/11/rapport_sc3a9minaire_doumer_sabau.pdf</a></li> </ul>			





## 16. Green city bonds

N	16
Category of instruments	Debt Financing Instruments
Type of instruments	<b>Green city bonds</b>
Description	<p>Green city bonds fund green projects and assets that make cities low-carbon and climate-resilient.</p> <p>They can be issued by any bond issuing entity, including municipalities, utilities, public-private partnerships, and private companies to build GI, such as habitat restoration and flood mitigation.</p> <p>They are essentially a type of loan.</p> <p>The bond issuer (debtor) borrows a fixed amount of capital from investors (creditors) over a defined period of time (the “maturity” of the bond), repays the capital when the bond matures, and pays an agreed-upon amount of interest.</p>
Case study example:  Tower Libeskind (on behalf of Assicurazioni Generali)  Milan, Italy	<p><b>General description</b></p> <p>Inspired by the Renaissance dome, the 76,000 m<sup>2</sup> Libeskind Tower, designed by architect Daniel Libeskind, is a sustainability symbol with its green features and environmental integration. Standing 175m high, the building incorporates energy-efficient systems, sustainable materials, and innovative design to minimise its environmental footprint. Surrounding the tower there is enhanced greenery due to its development, including landscaped public spaces and vegetation that provides ecosystem services such as better air quality and aesthetic and ecological benefits. The LEED Gold certification highlights these sustainable practices, showcasing the tower’s commitment to reducing environmental impact and fostering a greener urban environment in and out of the building.</p> <hr/> <p><b>Funding</b></p> <p>Intesa Sanpaolo, along with BNP Paribas, Crédit Agricole CIB, and UniCredit, participated in a €162,5 million Green Bond issued to Generali Real Estate SGR’s Rubens fund for the Libeskind Tower in Milan. This bond, one of Italy’s first Green Bonds, aligns with the Green Loan Principles. Generali, a pioneer in European insurance green bonds since 2019, updated its Sustainability Bond Framework in December 2023 to comply with the EU Green Bonds Standard. This update reflects Generali’s ongoing commitment to sustainable finance and aims to set an example for other major financial institutions to increase their green investments.</p> <hr/> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://www.climatebonds.net/files/files/2019-10_IT_Assicurazioni_Generali.pdf">https://www.climatebonds.net/files/files/2019-10_IT_Assicurazioni_Generali.pdf</a></li> <li>• <a href="https://www.generali.com/investors/debt-ratings/sustainability-bond-framework">https://www.generali.com/investors/debt-ratings/sustainability-bond-framework</a> (Sustainability Bond Report related to 2021 issuance)</li> </ul>



## 17. Green loans

N	17		
Category of instruments	Debt Financing Instruments		
Type of instruments	<b>Green loans</b>		
Description	<p>Green loans are a special financing instrument that supports green projects. Specifically, green loans are any loan instrument made available exclusively to finance or refinance new and/or existing eligible green projects in whole or in part. They have 3 main features:</p> <ul style="list-style-type: none"> <li>- Revenues are allocated exclusively to green projects</li> <li>- Revenues are tracked and managed reliably</li> <li>- Transparency is ensured by reporting about financing</li> </ul>		
<p>Case study example: <b>Park Vazrazhdane</b> Sofia, Bulgaria</p>	<p><b>General description</b></p> <p>Sofia's first new park in 30 years has received positive reviews from residents. The park features a mix of attractive grey and green infrastructure, with grass lawns and over 600 trees, becoming a popular recreation spot. The project aimed to enhance the public environment for rest, while creating better conditions for sport and recreation, and improving the local economy by attracting investments and employment opportunities. Additionally, the park was expanded in 2020 including since then an extra 6,6-acre water park and an 18,2-acre green area.</p>		
	<table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The project focused on restoring a degraded urban area through greenery. It has created 29,399 m<sup>2</sup> of green area, of which now counts on 607 new trees, 1,258 shrubs, and 649 flowers have been planted. Grass areas were also developed, including ones specially designed for children to play, have picnics, and other activities. Additionally, investments were made in several grey infrastructure and recreational elements.</p> </td> <td> <p><b>Social/environmental benefits</b></p> <p>The main environmental and social benefits of the NBS implementation are:</p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Enabling opportunities for physical activity</li> <li>• Service sector development</li> <li>• Increase of recreation opportunities</li> <li>• Employment/job creation</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The project focused on restoring a degraded urban area through greenery. It has created 29,399 m<sup>2</sup> of green area, of which now counts on 607 new trees, 1,258 shrubs, and 649 flowers have been planted. Grass areas were also developed, including ones specially designed for children to play, have picnics, and other activities. Additionally, investments were made in several grey infrastructure and recreational elements.</p>	<p><b>Social/environmental benefits</b></p> <p>The main environmental and social benefits of the NBS implementation are:</p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Enabling opportunities for physical activity</li> <li>• Service sector development</li> <li>• Increase of recreation opportunities</li> <li>• Employment/job creation</li> </ul>
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	<p><b>Funding</b></p> <p>The park had an approximate cost of €2-€4 million and relied on a mix of funding from the public local authority budget (Urban Development Funds in Sofia/Sustainable Cities Fund - SCF), being co-funded by the EU, direct funding (e.g., grants, subsidies, or self-financed projects by private entities), and loans. Additionally, the park was co-funded by the EU's JESSICA. The project aligns with EU policy, but its connection to national or local policies is unclear, although it is briefly mentioned in Sofia's Master Plan for sustainable tourism development.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/sofia/newly-created-park-vozrazhdane">https://una.city/nbs/sofia/newly-created-park-vozrazhdane</a></li> <li>• <a href="https://www.fmfib.bg/en/news/266">https://www.fmfib.bg/en/news/266</a></li> </ul>			



## 18. Equity Finance

N	18		
Category of instruments	Equity Investments		
Type of instruments	<b>Equity Finance</b>		
Description	Within the context of NbS, equity finance involves securing funding through the sale of ownership shares or equity in initiatives or projects that implement nature-based approaches to address environmental or sustainability challenges.		
<p>Case study example: <b>Liberty Square Renovation (Námestie Slobody Renovácia)</b> Bratislava, Slovakia</p>	<p><b>General description</b></p> <p>The intervention involved rehabilitating Liberty Square (Námestie hraničiarov) in the Petržalka district of Bratislava. The grey paving was replaced with grass areas, trees, and flower beds. In addition, a water-capturing and irrigation system was installed to ensure resilience to drought. The project, implemented by the city of Petržalka (one of Bratislava's largest and most densely populated areas with 100,000 inhabitants) aimed to reconstruct the square's alleys. The project had the goal of changing 1 hectare of pavement into green spaces, followed by installing diverse recreational areas for different age groups.</p>		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p><b>NbS interventions</b></p> <p>The place has a grey infrastructure combined with green elements (i.e., alley and street greens) and sustainable urban drainage systems in the area. The first phase of implementation involved removing unhealthy or disruptive trees and root systems to make space for recreational and green areas. The second phase included the development of these areas as well as restoration of the fountain's pipeline and the construction of water retention measures.</p> </td> <td style="vertical-align: top;"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change adaptation (mostly by increasing/improving urban vegetation cover for thermal comfort and prioritising climate-resilient plant species)</li> <li>• Stormwater and rainfall management and storage</li> <li>• Air quality improvement</li> <li>• Cration of recreation opportunities</li> <li>• Improved social cohesion</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The place has a grey infrastructure combined with green elements (i.e., alley and street greens) and sustainable urban drainage systems in the area. The first phase of implementation involved removing unhealthy or disruptive trees and root systems to make space for recreational and green areas. The second phase included the development of these areas as well as restoration of the fountain's pipeline and the construction of water retention measures.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change adaptation (mostly by increasing/improving urban vegetation cover for thermal comfort and prioritising climate-resilient plant species)</li> <li>• Stormwater and rainfall management and storage</li> <li>• Air quality improvement</li> <li>• Cration of recreation opportunities</li> <li>• Improved social cohesion</li> </ul>
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<p><b>Funding</b></p> <p>The area had a cost of €500,000-€2 million, employing a combined funding strategy. A significant component was equity funding, which involved investments in shares from private entities. This was crucial for providing the necessary capital for the project and complemented the primary funding source, originally connected to the public local authority budget. Additional financial support came from earmarked public funds, grants, and subsidies, as well as direct contributions from private entities. Non-financial contributions provided by the public authorities, such as labour, also played an important role in the project's success by helping to reduce costs and use community resources effectively. The renovation was part of Bratislava's Adaptation Action Plan and was coordinated by the City Office. This effort involved collaboration with local organisations, including the Bratislava Regional Conservation Association, Bratislava Water Company, and Comenius University, which contributed with expertise and resources.</p> <p>International cooperation was another key element, with the Norwegian partner COWI providing specialised knowledge through the EEA and Norway Grants. Due to budget limitations, the project faced challenges that were addressed by the involvement of property developer HB Reavis in May 2017. The partnership with HB Reavis brought additional investment and development expertise, allowing the overcome of financial obstacles and ensuring the successful completion of the renovation despite initial constraints.</p>			



#### References

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- <https://climate-adapt.eea.europa.eu/en/metadata/case-studies/eea-grants-supporting-the-city-of-bratislava-to-implement-climate-adaptation-measures>



## 19. Payment for Ecosystem Services (PES)

N	19		
Category of instruments	Innovative Market-based Instruments		
Type of instruments	<b>Payment for Ecosystem Services (PES)</b>		
Description	<p>PES schemes aim to connect providers of a service that is not traditionally traded in the market (Ecosystem Service, ES), such as water quality, erosion prevention, or the aesthetic value of a landscape, with potential consumers interested in conserving these services, such as public institutions, water utilities, or private companies.</p> <p>At a minimum, PES schemes require 2 actors: buyers (beneficiaries) of ES and sellers (providers) who affect ES supply. PES makes the consumer pay the supplier for implementing sustainable agro-environmental practices or conserving ecosystems that provide the ES of interest, which typically involves an opportunity cost for the supplier, who could use his land for commercial purposes. PES agreements are typically voluntary and rely on mutually agreed rules.</p>		
Case study example: <b>Adopt a Green Spot</b> Milan, Italy	<p><b>General description</b></p> <p>Since 2005, Milan has implemented the “Adopt a Green Spot” initiative aiming to restore and revitalize neglected green areas through a Payment for Ecosystem Services (PES) scheme, which relies especially on sponsorship and collaboration. Participants include individuals, businesses, and community groups who adopt and maintain these spaces, receiving financial support for their efforts. The project is managed by the Municipality of Milan, which represents the owner of the natural resources that provide ecosystem services, while citizens and other stakeholders are the beneficiaries who have access to the services offered by these green areas.</p> <p>The initiative not only improves urban biodiversity and air quality but also fosters community engagement and environmental stewardship. According to the Municipality of Milan, the project has been instrumental in increasing green space maintenance and enhancing the overall quality of public areas. In addition, this PES scheme has been effective in integrating urban green space management with community involvement, leading to both ecological and social benefits.</p>		
	<table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The initiative covers a variety of green areas, including flowerbeds, urban parks and gardens, recreational spaces, roundabouts and individual trees. The sizes of these areas range from 50 m<sup>2</sup> to 30,000 m<sup>2</sup>.</p> </td> <td> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change adaptation</li> <li>• Stormwater and rainfall management and storage</li> <li>• Air quality improvement</li> <li>• Creation of recreation opportunities</li> <li>• Improved social cohesion</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The initiative covers a variety of green areas, including flowerbeds, urban parks and gardens, recreational spaces, roundabouts and individual trees. The sizes of these areas range from 50 m<sup>2</sup> to 30,000 m<sup>2</sup>.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change adaptation</li> <li>• Stormwater and rainfall management and storage</li> <li>• Air quality improvement</li> <li>• Creation of recreation opportunities</li> <li>• Improved social cohesion</li> </ul>
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<p><b>Funding</b></p> <p>The success of the PES scheme is due to a few key factors: flexible voluntary agreements that engage diverse stakeholders; inclusion of several green areas; public recognition that attracts firms, and low transaction costs for stakeholders. Although the financial resources are a small part of the overall social benefit, they are adequate to guarantee the requalification and maintenance of often neglected small green spaces because of limited public funding. Investment levels vary across districts. The city centre normally has the highest sponsorship investment per square metre at €67,94, a value above the city average. Overall, sponsorships, which involve commitments from entities such as businesses, organisations, or individuals who provide funds to support the maintenance and revitalisation of the spaces, attract more investment (€25,36/m<sup>2</sup>) compared to collaborations (i.e., partnerships with different stakeholders, including local groups, community organisations, or less formal entities that work together in the areas), which has an average of €4,26/m<sup>2</sup>.</p>			



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## 20. Offsets

N	20	
Category of instruments	Innovative Market-based Instruments	
Type of instruments	Offsets	
Description	<p>Actors such as companies whose activities impact ecosystems can be required by new regulations and directives to 'offset' or compensate for their residual negative impacts on ecosystems by creating or improving ecosystems elsewhere.</p> <p>This can involve creating or enhancing GI in other locations or contributing to a fund managed by public authorities or conservation organizations which finance GI initiatives.</p> <p><b>BIODIVERSITY OFFSETS</b></p> <p>As a more specific category, biodiversity offsets refer to "measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts caused by development projects - whether from the public or private sector - after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss (NNL) and preferably a net gain of biodiversity on the ground".</p> <p>An extension of offsets is when a credit-trading market is created in which "the credits from actions with beneficial biodiversity outcomes can be purchased to offset the debit from environmental damage. Credits can be produced before, and without ex-ante links to, the debits they compensate for, and stored over time."</p>	
Case study example: <b>Garden Therapy in the City</b> Krakow, Poland	<p><b>General description</b></p> <p>The garden is located at the social welfare home 'Helclów' in Krakow and is protected by a regional monument conservator. It aimed to integrate residents of different ages, support physical rehabilitation, and provide leisure with garden therapy elements. The area fosters interaction between the elderly residents and other citizens through activities like planting flowers and herbs. The initiative, which involved planting 314 trees and 134 m<sup>2</sup> of shrubs between 2010 and 2016, includes a grill area and improved infrastructure for the disabled. It also has mitigated harmful urban developments, with private investors funding new trees as part of a natural wall and pollution barrier. Apart from that, there is a green recreational area designed to foster multigenerational integration through joint activities like planting and barbecues. The garden offsets tree cutting in other city areas, protects local natural and cultural heritage and serves as a natural noise and pollution barrier. The garden hosts public events and meetings during working hours, following a successful participatory budget application in 2016 that gained widespread support.</p>	
	<p><b>NbS interventions</b></p> <p>The NbS interventions included planting trees to create a natural noise and pollution barrier and community gardening areas. They are also involved in maintaining and protecting ancient plane trees and removing sick and dangerous ones. The garden has part of its area with grey infrastructure that features greens, where benches, a chess table, a table tennis table, a brick grill, and swings are present.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Environmental quality improvement (i.e., air quality and noise reduction)</li> <li>• Enabling opportunities for physical activity</li> <li>• Creation of recreation opportunities</li> <li>• Improved social cohesion</li> <li>• Foster natural landscape design for urban development</li> <li>• Preservation of natural heritage</li> </ul>



#### Funding

The project had a cost between €50,000-€100,000 and was implemented on municipal land. It counted on mixed funding through grants and subsidies, including the public national budget, and public local authority budget, being also co-funded by earmarked public budget and direct funding (e.g., grants, subsidies, or self-financed projects by private entities).

With local citizens' support, the social welfare home prepared and applied for the project, which aligned with Krakow's participatory budget requirements and local policies. In addition, the garden serves as an offset under the market-based instruments framework, compensating for environmental impacts from other city developments. Private investors are often obliged to provide resources for planting new trees and enhancing the green space within the garden. These contributions help to create a living wall and a buffer that reduces noise and pollution, further reinforcing the garden's role in offsetting ecological impacts.

#### References

- <https://una.city/nbs/krakow/garden-therapy-city>
- [https://budzet.krakow.pl/projekty2016/1248-ogrod\\_rekreacyjny\\_z\\_ogrodoterapia\\_w\\_centrum\\_miasta.html](https://budzet.krakow.pl/projekty2016/1248-ogrod_rekreacyjny_z_ogrodoterapia_w_centrum_miasta.html)





## 21. Credit-trading systems

N	21	
Category of instruments	Innovative Market-based Instruments	
Type of instruments	Credit-trading systems	
Description	<p>Originally designed for pollution control, these systems facilitate the exchange of emission rights for specific pollutants.</p> <p>Credit-trading systems organise the exchange of rights to emit a particular pollutant into a receptor environment. The regulating authority establishes an aggregate pollution target and distributes among potential polluters a number of permits (credits) corresponding to the target set. Each economic agent is only allowed to emit a quantity corresponding to its permit holding. Trading emerges when agents with relatively high emissions will seek to buy additional permits, while lower cost abaters will be motivated to sell some of their permits.</p> <p>In the context of GI, similar mechanisms are emerging to meet stormwater management goals and could potentially be applied in other areas.</p>	
Case study example: <b>Green Areas Inner-city Agreement (GAIA)</b> Bologna, Italy	<p><b>General description</b></p> <p>The project aimed to address especially two environmental issues through a unified approach: climate change (focusing on both mitigation and adaptation through urban forestation) and air quality. It also had the goal of disseminating public-private partnership tools developed from corporate social responsibility practices and specific guidelines. The initiative plan was to create a public-private partnership model for urban forestation using the ‘Green Areas Inner-City Agreement’ (GAIA). This model was designed to include three key protocols for managing, monitoring, and mapping green urban areas, ultimately leading to the planting of 3,000 trees throughout Bologna, Italy. The GAIA mechanism leverages financial compensation for the carbon footprint of businesses as a primary driver for action. This financial compensation is used to purchase and maintain trees throughout the city.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Environmental quality improvement (i.e., air quality and noise reduction)</li> <li>• Foster natural landscape design for urban development</li> <li>• Climate change mitigation and adaptation</li> <li>• Enabling opportunities for physical activity</li> <li>• Creation of recreation opportunities</li> </ul>
	<p><b>NBS interventions</b></p> <p>GAIA integrates grey infrastructure with several green elements, including alley and street greens, green playgrounds and school grounds, and institutional green spaces. Green parking lots and riverbank/lakeside greens enhance urban areas, alongside parks, urban forests, pocket parks, and neighborhood green spaces complement the natural strategies applied.</p>	
	<p><b>Funding</b></p> <p>The project cost has been between €500,000-€2 million, counting on EU funds, direct funding (e.g., grants, subsidies, or self-financed projects by private entities) and corporate investment. It was implemented in response to the principles and targets of the Kyoto Protocol and the United Nations Framework Convention on Climate Change.</p>	



IBIMET-CNR, Cittalia-Fondazione Anci Ricerche, Impronta Etica, and Unindustria Bologna from Italy played key roles in developing new green areas to offset carbon emissions, while strengthening connections with local communities and the surrounding environment.

Participation in the GAIA initiative is voluntary for both the town council and local businesses. Businesses interested in participating can request a tool from the project website, which allows them to calculate the amount of carbon dioxide involved in their processes and services. Based on this calculation, businesses can select from different partnership levels to neutralise their carbon footprint. The ELDER TREE PARTNERSHIP involves purchasing 1 to 5 trees, costing between €200 and €1,000. The MAPLE PARTNERSHIP includes purchasing 6 to 20 trees, with costs ranging from €1,200 to €4,000. Lastly, the ELM PARTNERSHIP requires purchasing more than 20 trees, starting at a minimum cost of €4,200. The number of trees needed to offset the company's carbon footprint is indicative, and businesses have the final decision on how many trees they wish to purchase to compensate for their emissions.

#### References

- <https://una.city/nbs/bologna/green-area-inner-city-tree-planting-agreement>
- <https://climate-adapt.eea.europa.eu/en/metadata/case-studies/gaia-green-area-inner-city-agreement-to-finance-tree-planting-in-bologna>



## 22. Ecotourism

N	22		
Category of instruments	Innovative Market-based Instruments		
Type of instruments	<b>Ecotourism</b>		
Description	Ecotourism is a market mechanism becoming increasingly relevant as a business model for nature-based initiatives. This type of responsible tourism involves enjoying natural or semi-natural areas to support conservation and minimise the impact on local communities. Because the main asset of ecotourism is nature, a portion of the revenue from tourism packages or entrance fees is earmarked to manage natural capital and recreational ecosystem services correctly.		
Case study example:  <b>Ecological zone in Ljubljana city centre (among other projects)</b>  Ljubljana, Slovenia	<p><b>General description</b></p> <p>In 2007, Ljubljana established its first "ecological zone" in the city centre and redesigned it to be more pedestrian and cyclist-friendly. This project has brought several benefits, such as 63 new ash trees that aligned with other measures and contributed to carbon emissions reduction by 58% in the area. The initiative aimed to promote biking and sustainable mobility while revitalising degraded areas and creating new green spaces for social and recreational activities. With time it extended beyond the central region, including eco-renovations of schools and playgrounds as well as the creation of green public spaces, and cultural and sports facilities.</p> <p>The Ljubljanica River also went through ecological restoration to depollute and encourage pedestrian and bicycle use in the surroundings. Although the initial ecological zone is now complete covering more than 100,000 m<sup>2</sup>, other connected initiatives continue to support the city in maintaining a sustainable urban development. Ljubljana's commitment in this sense was recognised with high citizens' satisfaction, climate resilience, and sustainable tourism boost - as the destination has been carefully planned for becoming more attractive - which led to the Tourism for Tomorrow Award in 2015 and the European Green Capital Award in 2016, among several other sustainable achievements the city holds.</p>		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p><b>NbS interventions</b></p> <p>Almost 3/4 of the city's surface area is covered by green spaces, with 16,5% designated as Natura 2000 areas. The project's strategy predominantly involved integrating several green elements into the city's grey infrastructure, including alley and street greens, gardens, parks, urban forests, pocket parks, and neighbourhood green spaces.</p> </td> <td style="vertical-align: top;"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change mitigation and adaptation</li> <li>• Physical health improvement</li> <li>• Environmental quality improvement (i.e., air quality and noise reduction)</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>Almost 3/4 of the city's surface area is covered by green spaces, with 16,5% designated as Natura 2000 areas. The project's strategy predominantly involved integrating several green elements into the city's grey infrastructure, including alley and street greens, gardens, parks, urban forests, pocket parks, and neighbourhood green spaces.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Climate change mitigation and adaptation</li> <li>• Physical health improvement</li> <li>• Environmental quality improvement (i.e., air quality and noise reduction)</li> </ul>
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	<p><b>Funding</b></p> <p>The City Municipality initiated the project as part of Ljubljana Vision 2025, in response to a local policy focused on sustainable urban planning (especially considering socioeconomic and environmental factors), which led to the development of the ecological zone. The initiative had a cost of approximately €4 million and received funding from various sources, including EU funds (e.g., LIFE project to restore the river Ljubljanica), national and regional public budgets, earmarked public funds as well as private-public partnerships, working with a number of municipal enterprises. In addition, there was a significant non-financial contribution in the form of labour provided by public authorities.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/ljubljana/ecological-zone-ljubljana-city-centre">https://una.city/nbs/ljubljana/ecological-zone-ljubljana-city-centre</a></li> <li>• <a href="https://iclei-europe.org/member-in-the-spotlight/ljubljana/">https://iclei-europe.org/member-in-the-spotlight/ljubljana/</a></li> <li>• <a href="https://oppla.eu/ljubljana-nature-based-solutions-nbs-urban-regeneration-and-wellbeing">https://oppla.eu/ljubljana-nature-based-solutions-nbs-urban-regeneration-and-wellbeing</a></li> </ul>			



## 23. Public-Private Partnerships (PPP)

N	23		
Category of instruments	Innovative Market-based Instruments		
Type of instruments	<b>Public-Private Partnerships (PPP)</b>		
Description	<p>PPPs allow governments to attract private sector engagement, intellectual capital, and investments to accelerate green investments and technologies.</p> <p>Through a partnership, it is assumed that the public and private sectors can benefit from combining their knowledge, expertise, finances, and other resources to deliver collective goods more efficiently. The main reasons for PPPs include limited financial resources and capabilities of the public sector, increasing demand for public service infrastructure, and the need to improve the quality of public services and reduce delivery costs. In the context of NBS and GI, PPPs can be applied in many ways.</p> <p>For instance, PPPs can be used to implement GI, enhancing the efficiency of significant infrastructure investments. These financing models generate interesting synergies, such as making an investment more attractive for the private sector by reducing its risk due to the guarantee of public financing or promoting the use of public funds for innovative activities and market creation, derived from close collaboration with the private sector.</p>		
Case study example: <b>Diomidous Botanical Garden</b> Athens, Greece	<p><b>General description</b></p> <p>In 2004, the Botanical Garden of Athens, originally established in the 1950s was reconstructed to protect and enhance the area's biodiversity. Covering 1,860 square metres, the garden features over 2,500 plant species worldwide and a diverse range of flora. All plants and trees within the garden are protected. The garden also supports regional biodiversity by distributing seeds nationwide and hosting agroecological events to raise awareness and educate the public. It includes well-maintained paths, seating areas, spaces for outdoor gatherings, and a rich ecosystem, including a lake and a library.</p> <table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The area has blue and green infrastructure, fitting into the categories of parks and urban forests, botanical gardens, and lakes/ponds. It preserves plants from areas protected by NATURA 2000 projects as specimens and counts on a section dedicated to hosting all endemic, rare, and endangered plant species of Hellenic flora.</p> </td> <td> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Foster natural landscape design for urban development</li> <li>• Climate change mitigation and adaptation</li> <li>• Habitat and biodiversity restoration and conservation</li> <li>• Environmental quality improvement (i.e., air quality)</li> <li>• Improvement in people's connection to nature</li> <li>• Increased support for education and scientific research.</li> </ul> </td> </tr> </table> <p><b>Funding</b></p> <p>The reconstruction was designed in response to the national policy on biodiversity conservation, with a special focus on conserving and preserving genetic diversity. The total cost ranged between €50,000 and €100,000, funded through various sources including corporate investments, NGO funds, private foundations, grants, equity funding, donations, and membership fees. The PPP model involved the collaboration between the Greek government and private entities to finance, design, and execute the reconstruction and enhancement of the botanic garden. In this context, the government provided initial funding and oversight, while private entities contributed with additional capital and expertise. Financial responsibilities included budgeting for construction, maintenance, and operations, ensuring sustainability. On the other hand, managerial duties were divided, with the government ensuring policy compliance and strategic direction, and private partners managing daily operations and project</p>	<p><b>NbS interventions</b></p> <p>The area has blue and green infrastructure, fitting into the categories of parks and urban forests, botanical gardens, and lakes/ponds. It preserves plants from areas protected by NATURA 2000 projects as specimens and counts on a section dedicated to hosting all endemic, rare, and endangered plant species of Hellenic flora.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Foster natural landscape design for urban development</li> <li>• Climate change mitigation and adaptation</li> <li>• Habitat and biodiversity restoration and conservation</li> <li>• Environmental quality improvement (i.e., air quality)</li> <li>• Improvement in people's connection to nature</li> <li>• Increased support for education and scientific research.</li> </ul>
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implementation. There were also significant non-financial contributions including goods and labour provided by both sides, which played a crucial role in the project's successful completion and maintenance.

#### References

- <https://una.city/nbs/athens/diomidous-botanical-garden-athens>
- <https://diomedes-bq.gr/>



## 24. Exploiting existing regulatory requirements

N	24		
Category of instruments	Other Innovative Instruments		
Type of instruments	<b>Exploiting existing regulatory requirements</b>		
Description	<p><b>Some entities with environmental obligations can take advantage of regulatory requirements to invest in alternative NBS.</b></p> <p>Authorities, particularly in the water management sector, face regulatory standards that require significant investments, usually in high-cost, energy-intensive solutions such as wastewater treatment plants. Alternative green infrastructure can instead be implemented to meet environmental regulations by alternative means.</p>		
Case study example: <b>Amsterdam Rainproof</b>  Amsterdam, the Netherlands	<p><b>General description</b></p> <p>Amsterdam Weerproof, of which Amsterdam Rainproof is a part, is an initiative by the municipality of Amsterdam and Waternet that responds to the Amsterdam Climate Adaptation Programme. The project developed a platform designed to engage stakeholders in making the city resilient to extreme rainfall and other climate change-related weather events. It focuses on addressing flooding caused by urbanisation through promoting smarter urban designs that retain and store rainwater. The initiative connects solutions that facilitate citizens, officials, and businesses to use rainproof strategies. One of the platform's key projects is aimed at reducing paved surfaces and increasing greenery. Since 2020, Amsterdam residents have had the opportunity to place garden tiles on the street for free removal as part of the "Tegels uit, groen erin!" alternative. This programme assists with de-tiling and greening efforts, facilitating the replacement of grey paving with plants, flowers, trees, and grass.</p>		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p><b>NbS interventions</b></p> <p>The NBS are mostly climate-proof and biodiverse facades and gardens - that can be traditional ones at the ground level or rooftop gardens. Additionally, if there is interest in having trees in the area, a specific subsidy may be available.</p> </td> <td style="vertical-align: top;"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Improved social cohesion</li> <li>• Foster natural landscape design for urban development</li> <li>• Climate change adaptation</li> <li>• Stormwater and rainfall management and storage</li> </ul> </td> </tr> </table>	<p><b>NbS interventions</b></p> <p>The NBS are mostly climate-proof and biodiverse facades and gardens - that can be traditional ones at the ground level or rooftop gardens. Additionally, if there is interest in having trees in the area, a specific subsidy may be available.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Improved social cohesion</li> <li>• Foster natural landscape design for urban development</li> <li>• Climate change adaptation</li> <li>• Stormwater and rainfall management and storage</li> </ul>
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	<p><b>Funding</b></p> <p>As the city's public sewer system faces increasing demands, expanding its capacity is not enough. Considering that 50% of the city is private land, collective action involving residents, companies, and homeowners is crucial. By engaging different social actors, the platform helps to integrate strategies into existing regulations and urban planning standards, enhancing the city's ability to manage extreme rainfall and adapt to climate change. The mentioned initiative offers a subsidy programme to encourage greening in general, but also in private gardens. Residents can apply for €15 per square meter of garden tiles replaced with greenery, up to a maximum of €1,000 per home. For gardens larger than 10 square meters, they can apply for the subsidy collectively. In addition, tiles can be given to the Tegelservice for free from April to October. The city also provides several other benefits, including loans, fee discounts, and exclusive perks for stakeholders who engage in the effort of greening the urban area.</p>		
<p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://amsterdamsmartcity.com/updates/project/amsterdam-rainproof">https://amsterdamsmartcity.com/updates/project/amsterdam-rainproof</a></li> <li>• <a href="https://weerproof.nl/partners/tegels-eruit-groen-erin/">https://weerproof.nl/partners/tegels-eruit-groen-erin/</a></li> </ul>			



## 25. Community Asset Transfer

N	25		
Category of instruments	Other Innovative Instruments		
Type of instruments	<b>Community Asset Transfer</b>		
Description	Local authorities may transfer to community organisations the management or ownership (usually via long leasehold) of public land or buildings. In the UK, the transfer can be made at less than market value, if it promotes economic, social or environmental well-being (Drayson, 2014).		
Case study example:  <b>Community bio-garden Vitosha (municipality's programme to support planting greenery in public spaces)</b>  Sofia, Bulgaria	<p><b>General description</b></p> <p>In 2014, a group of citizens in Sofia established a community-led bio-garden on municipal land with the support of the “Green Sofia” programme. This project aimed to transform an abandoned and degraded area into a vibrant “island of biodiversity” for urban gardening and social interaction. The 4-acre garden features herbs, vegetables, flowers, and habitats for beneficial insects, also counting on a compost bin. It promotes sustainable practices by rejecting chemical fertilisers, herbicides, and/or pesticides, and utilises companion planting. The garden provides ecological, educational, and social benefits, including support for refugee integration (especially Syrian refugees who have been deeply connected to the project).</p>		
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>NBS interventions</b></p> <p>The main NBS implemented is an urban garden that fits 2 categories at once, pocket parks/neighbourhood and community gardens. The green space features mostly orchards, vegetables, seeds, and herbs.</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Environmental quality improvement (i.e., soil quality improvement and waste management)</li> <li>• Inclusive and effective governance</li> <li>• Enabling opportunities for physical activity</li> <li>• Sustainable production and consumption</li> <li>• Social justice, cohesion and equity</li> </ul> </td> </tr> </table>	<p><b>NBS interventions</b></p> <p>The main NBS implemented is an urban garden that fits 2 categories at once, pocket parks/neighbourhood and community gardens. The green space features mostly orchards, vegetables, seeds, and herbs.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Green space creation and/or management</li> <li>• Environmental quality improvement (i.e., soil quality improvement and waste management)</li> <li>• Inclusive and effective governance</li> <li>• Enabling opportunities for physical activity</li> <li>• Sustainable production and consumption</li> <li>• Social justice, cohesion and equity</li> </ul>
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<p><b>Funding</b></p> <p>The project was developed and funded through a combination of local initiatives and support from different sources. Residents initiated and managed the garden, with significant contributions from the Municipality’s “Green Sofia” programme, which provided materials for enhancing the public space. This initiative involved transferring municipal land to community control for urban gardening and social purposes, exemplifying the principles of community asset transfer.</p> <p>In addition, the garden received funding from the “Do it Yourself” green ideas competition organised by Za Zemyata and the M-tel Eco Grant programme run by Mobiltel. Overall, funding came from the local authority budget, NGO contributions, and other sources such as earmarked public funds and donations. Non-financial contributions were also crucial, including land provision, goods, and labour supplied by both public authorities and volunteers. This collaborative approach highlights the successful application of community asset transfer, leveraging local engagement and resources to enhance urban sustainability and social cohesion.</p>			



**References**

- <https://una.city/nbs/sofia/community-bio-garden-vitosha>
- <https://bnr.bg/en/post/100473750/the-first-public-organic-garden-in-sofia>





## 26. Regulation and planning standards

N	26		
Category of instruments	Other Innovative Instruments		
Type of instruments	<b>Regulation and planning standards</b>		
Description	Although not a financing instrument as such, local authorities can apply regulatory and planning instruments to mandate GI implementation by private stakeholders, such as grey infrastructure developers and homeowners. For example, development planning regulations may require that new residential neighbourhoods incorporate a certain percentage of green space.		
Case study example: <b>Alicante coastal corridor</b> Alicante, Spain	<p><b>General description</b></p> <p>The Plan de Acció Territorial de la Infraestructura Verde del Litoral de la Comunitat Valenciana (PATIVEL), approved by Decree 58/2018, aims to identify and protect valuable coastal lands in the Valencian Community. It defines and maps a green infrastructure network to enhance ecological connectivity and prevent fragmentation between coastal and inland areas. In response to this planning requirement, the Municipality launched an ideas competition to develop a sustainable coastal corridor along the Alicante coastline. The purpose of this passage is to develop a public space of high environmental and material quality that serves different purposes such as leisure, sports, and cultural activities, while also improving connectivity between the coast and urban areas. The two-stage competition sought proposals for a new 'coastal passage' featuring multi-purpose public spaces that promote biodiversity and accessibility. The winning project, titled "My Connected Archipelago," developed by Grupo Aranea and Subarquitectura studios from Alicante, embraces ecological and sustainable principles. The coastal corridor's true potential lies in its role as a high-quality public-natural space and a venue for community engagement.</p> <table border="1"> <tr> <td> <p><b>NbS interventions</b></p> <p>The proposed interventions focus on enhancing the coastline through green corridors and belts. The design aims to structure the Paseo Litoral with interconnected "islands" linked by an "ecological corridor." This approach aims to connect people with the landscape, integrate land and water, and foster interaction between people and their environment.</p> </td> <td> <p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood protection and coastal protection/hazard mitigation</li> <li>• Foster natural landscape design for urban development</li> <li>• Enabling opportunities for physical activity</li> <li>• Tourist and Service sector development</li> <li>• Preservation of natural heritage</li> </ul> </td> </tr> </table> <p><b>Funding</b></p> <p>The Alicante City Hall, supported by the Municipal Tourist and Beaches Board and the Urban Planning Councillorship, organised an international competition to develop a coastal passage project. The competition was managed by both the Board of Tourism and the Urbanism Department, and it was funded by the EU, regional and local public budgets. There has also been co-funding of earmarked public budget and direct funding (grants, subsidies, or self-financed projects by private entities).</p> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://una.city/nbs/alicantealacant/alicante-coastal-corridor">https://una.city/nbs/alicantealacant/alicante-coastal-corridor</a></li> <li>• <a href="https://asd.sutd.edu.sg/about/awards-achievements/achievements/first-prize-in-international-ideas-competition-alicante-coastal-corridor-spain/">https://asd.sutd.edu.sg/about/awards-achievements/achievements/first-prize-in-international-ideas-competition-alicante-coastal-corridor-spain/</a></li> <li>• <a href="https://shorturl.at/qyJVs">https://shorturl.at/qyJVs</a></li> </ul>	<p><b>NbS interventions</b></p> <p>The proposed interventions focus on enhancing the coastline through green corridors and belts. The design aims to structure the Paseo Litoral with interconnected "islands" linked by an "ecological corridor." This approach aims to connect people with the landscape, integrate land and water, and foster interaction between people and their environment.</p>	<p><b>Social/environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Flood protection and coastal protection/hazard mitigation</li> <li>• Foster natural landscape design for urban development</li> <li>• Enabling opportunities for physical activity</li> <li>• Tourist and Service sector development</li> <li>• Preservation of natural heritage</li> </ul>
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## 27. InvestEU Portal

N	27
Category of instruments	Other Innovative Instruments
Type of instruments	InvestEU Portal
Description	<a href="#">The InvestEU Portal</a> brings together investors and project promoters on a single EU-wide platform, by providing an easily accessible and user-friendly database of investment opportunities available within the EU.
Case study example: <b>Traveleco</b> Monza/Roma, Italy	<p><b>General description</b></p> <p>The Traveleco project, supported by InvestEU, is an initiative aimed at fostering sustainable tourism in Italy. It focuses on integrating eco-friendly practices into travel and tourism operations, promoting the use of nature-based solutions to enhance environmental sustainability. The project prioritises a sustainable approach that can help to reduce the carbon footprint of tourism activities, enhance the resilience of tourist destinations, and support local communities by implementing green infrastructure and conservation measures. Therefore, Traveleco contributes to pushing a sustainable transition in the tourism industry by encouraging practices that benefit both the environment and local economies.</p> <p><b>Funding</b></p> <p>The project received different funding sources through the InvestEU Portal, primarily from the FESR LAZIO 2014-2020 programme, covering public EU, regional, and local budgets as well as private contributions. A key strength of InvestEU is its priority for sustainable and climate resilience projects, which supports and enables ideas aligned to these purposes to be implemented.</p> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• <a href="https://traveleco.it/en">https://traveleco.it/en</a></li> <li>• <a href="https://lc.cx/sjOyii">https://lc.cx/sjOyii</a></li> </ul>