



Operationalising EU Policies for Urban Green and Blue Infrastructure

The ENABLE project has compiled a series of approaches and tools to support the implementation of urban green and blue infrastructure (GBI), learning from the experiences of knowledge exchange among scientific experts and urban practitioners in various European cities. Biodiversity and ecosystem services can provide many benefits to urban citizens. The ENABLE interdisciplinary team of scientists has been engaged in dialogue with policy makers, urban planners, landscape designers, civil society initiatives and citizens, to make sure that their research work benefits and has an impact in cities on the ground. Their knowledge, best practices and key methods for interaction and delivering impacts have been captured in this policy brief, to give practical guidance to policy makers to facilitate the successful implementation of green and blue infrastructure in cities.

Policy instruments for GBI in cities and how they lead to positive results



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There is a growing recognition of the value and the benefits provided by natural systems in urban planning and decision-making processes. However, the effective implementation of GBI in ways that are inclusive and benefit all citizens equally remains challenging. Aligning local, national and EU policy and planning frameworks for urban development is critical to successfully unlocking GBI potential and realising its multiple benefits. Establishing relevant links between GBI and different policy areas and mainstreaming it into urban planning will benefit from a broad representation of different ways of appreciating and engaging with GBI. This entails involvement of multiple relevant stakeholders and scientific experts.

At the EU level, the [European Green Deal](#) offers a new opportunity for strengthening investment in GBI. Its overall ambition clearly outlines that all EU policies should contribute to preserving and restoring Europe's natural capital. An important element of this roadmap is to ensure the transition to a fair and prosperous society, improving quality of life of current and future

generations, and will include proposals to green European cities and increase biodiversity in urban spaces. To support this action, the European Commission will establish an EU Urban Greening Platform under a new 'Green City Accord'. The urban dimension of cohesion policy will be strengthened, and the proposed European Urban Initiative will provide assistance to cities to help them make best use of opportunities to develop sustainable urban development strategies. The newly released EU Biodiversity Strategy for 2030 will benefit from stronger integration of the urban dimensions of the landscape. As part of this strategy, the EU has committed to:

- Ensure that healthy ecosystems, green infrastructure and nature-based solutions are systematically integrated into urban planning, including in public spaces, infrastructure, and the design of buildings and their surroundings.
- Call on European cities of at least 20,000 inhabitants to develop ambitious Urban Greening Plans by the end of 2021, to bring nature back to cities.



- Set up in 2021 an EU Urban Greening Platform, under a new ‘Green City Accord’ with cities and mayors.
- Significantly increase the levels of GBI in European cities in particular to cool urban areas and mitigate the impact of natural disasters.
- Ensure that all EU citizens have access to GBI.
- Ensure that new urban development is not harmful to biodiversity objectives.

The above mentioned EU policy and funding programmes will be important in support of

actions for enhancing GBI in cities, but other schemes will also support countries and cities, such as:

The [European Regional Development Fund](#) will continue to focus on urban actions through an integrated – environmental, economic, social and cultural – approach to urban development, strengthening partnerships between local citizens, civil society, industry and various levels of government.

[Horizon Europe](#) – the EU programme for research and innovation – (and in particular the [mission for climate neutral and smart cities](#)) aims to support cities and urban regions in accelerating the transition to sustainable, low-carbon societies while meeting the goals and targets set out by international policy frameworks, such as the Paris Climate Change Agreement, the UN’s Sustainable Development Goals (notably SDG11), the Urban Agenda for the EU and the Habitat III New Urban Agenda. This includes co-creation, co-development and co-implementation with citizens in cities and the development of new partnerships and solutions to enhance urban resilience.

Tuning the instruments - Sound investment and long term pay-off

From the experiences gathered by the ENABLE researchers across the cities (Łódź (Poland), Halle (Germany), Barcelona (Spain), New York (United States), Oslo (Norway) and Stockholm (Sweden)), GBI implementation requires strengthening existing policy frameworks that support GBI with clear, measurable and binding targets on the accessibility and availability of GBI, as well as an understanding for how and when GBI may contribute to urban sustainability and liveability. The quality of green areas, which also affects the provisioning of benefits and ecosystem services, needs to be taken into consideration in decision-making processes.

The ENABLE research team has shown that investing in restoring, protecting, promoting and valuing high quality GBI throughout the



urban landscape – actioned throughout the development process and through robust, long-term management strategies – in combination with well-developed integration of the GBI as an embedded and interconnected part of cities and their governance will ensure that high-quality

environmental benefits are available for people and biodiversity into the future. The positive effects of co-creation and diverse perspectives in various stages of the urban policy, planning and development processes through cooperation between researchers, civil society, planners

and local business has been explored in the ENABLE project, for example in Oslo's green roof transition and Halle's Urban Green Development Strategy. This engagement helps to create common goals and to create synergies between research and development challenges in cities.

ENABLE co-creation processes in Halle and Oslo - how effective stakeholder engagement creates successful outcomes

Oslo's green roof transition

Oslo's Municipal Plan includes goals for greenhouse gas emissions, pollution, and transportation as well as access to high quality networked green spaces, urban food production and the management of green spaces for handling storm water. This is a strong foundation for protection of biodiversity, the restoration of ecosystems and the creation of access to green and blue spaces for citizens. It is fully aligned with the objectives of the European Green Deal and the EU Biodiversity Strategy.

In Oslo, the Agency for Urban Environment held several workshops to engage relevant stakeholders in the green roofs strategy for the city to create a joint vision. The conference "A Green transition on Oslo's Roofs" in 2019, with participation of entrepreneurs, Oslo municipality, suppliers, consultants, and researchers, resulted in some interesting recommendations on policy action and instruments for rehabilitating and expanding green roofs aimed at the municipality decision-makers who can integrate such suggestions into their funding and urban planning programmes.

Promoting standards and best practices

- Promoting the market potential of extensive thin green roofs
- Including a green roof module within Oslo's Blue-Green Factor scoring system, for existing and newly constructed roofs

- Make information available on best practices and guidance to get started - <http://ovase.no/>

Developing pilot projects

- Flagship projects – state agencies are implementing state-of-the-art green roofs on future public building projects (e.g. Oslo's new Concert Hall)
- Pilot projects demonstrating feasibility on protected cultural heritage buildings

Citizen engagement and incentives

- An award for green roof ambassadors
- Junior citizen science – creating a school green roofs lab programme to engage pupils in simple green roof monitoring
- A stormwater fee that gives rebates to the water bills for infiltration/evaporation and storage effectiveness through green roofs
- Reduced property tax for other ecosystem services that green roofs provide

Legislation and enforcement of regulations

- Standardisation of criteria and requirements for green roof construction approval by the municipality
- Revision of laws for tenants of collective housing to facilitate decisions on green roof investment and maintenance costs in shared ownership estates

The resilient and fair urban green development strategy in Halle

The major planning challenge in the city of Halle over the last 25 years has been establishing a network of green spaces. Several projects were initiated to interlink the city's green spaces. Balancing the densification of the city centre with the development of green public spaces to ensure a good quality of living in light of climate change impacts (e.g. the temperatures in the city centre are on average 10°C higher than in the Saale plains around the city) remains a challenge and biodiversity is not a major priority in decisions related to urban development. This, against the background of aggressive housing markets and diminishing government budgets, makes social justice and accessibility to green and blue spaces more important than ever.

The Integrated Urban Development concept in Halle aims to connect sectoral or spatially-detailed plans as well as the allocation of funding and subsidies to create a 'green city' and improve the connectivity of free spaces and the experience they provide, in response to the needs of the residents and visitors, while increasing and integrating areas for nature protection. As part of this planning, in relation to the development of the Saale riverbanks, permits for new housing are only granted if part of the land remains accessible to the public for walking along the river. The city of Halle promotes a bottom-up approach to governing GBI for example in the neighbourhood Freiimfelde, where the city hosted workshops to develop a Citizens Neighbourhood Concept with joint objectives until 2025, involving citizens and other local stakeholders in the development of the neighbourhood plans.

The ENABLE researchers in Halle, informed the municipality on future action plans and initiatives addressing accessibility and perception of green and open spaces, institutional settings and networks and the interrelation between open space planning and housing market dynamics. They investigated for example, mental barriers in relation to access to green spaces and discovered how important it is to integrate green and blue infrastructure in strategic development plans from the perspective of the multiple functions it provides to the citizens. Looking at one

green area in Halle Neustadt, the researchers engaged with the local population to establish their preferences for different GBI features. The research established that there are four main user groups of the green area, i.e. those preferring: 1) functional nature for physical and social activities; 2) wild nature for quiet space and beauty; 3) comfortable nature as a calming and relaxing place that also offers privacy, while nature is well cared for and clean; and 4) social nature for meeting friends and family and other social activities. By establishing which features are shared across these groups, the local planning processes can successfully integrate public subjectivity into their decision-making, respond to identified user preferences and ensure that their needs are met and public acceptance is high, while safeguarding critical GBI benefits.

As a result of the learning experiences in Halle, the following recommendations have been proposed by the ENABLE Research team:

Supporting pilot projects

- Better and more strategic support for pilot projects (e.g. Neutopia community garden)
- Pilot projects to be embedded and linked to other projects in the city and ensuring that districts in the city do not get isolated
- Strategic aims and involvement of local residents as 'catalysts' in pilot projects

Citizen engagement

- Multi-lingual approach of the population in an increasingly heterogeneous neighbourhood
- Regular feedback from the local residents collected in an active way (visiting them, discussions in schools and kindergartens, elderly homes, asylum seekers homes etc. and not 'only' inviting residents to the project location 'Pustebäume')

Legislation and enforcement of regulations

- Dynamic stabilisation of the Neutopia garden to ensure a long-term impact will be possible
- Embedding the new garden and green sites into the urban development plan
- Legalisation of a regular monitoring as quality assessment tool for greening (gardening) projects in (deprived) neighbourhoods

GBI for cities and contributions to achieving national and EU policy targets



Policy decisions about transportation, housing development and land ownership will all affect the effective functionality of GBI. This means that sectors and policies that deal with for example land ownership and tenure rights, access to policy development and planning processes, negotiation power of the private and public sector, and the empowerment of stakeholders need to recognise the impact they have on GBI and its potential to deliver ecosystem service benefits. GBI should be pursued in an integrated manner with complementary objectives, such as climate change mitigation and adaptation, human health and well-being, improving air quality, local food production, stimulating the local economy and conserving biodiversity. Finally, recognition and appreciation of GBI and the opportunities it holds depend on public awareness.

The ENABLE approach promotes participatory approaches for urban planning and development processes as essential for engaging with and integrating preferences and values of urban residents for GBI. This is of great value in

developing joint visions and targets that address multiple challenges, such as human health, social cohesion and well-being simultaneously.

Another important success factor is that financial support from the different EU and national funds, such as European Regional Development Funds, the LIFE Programme for Environment and Climate Action and the EU Programme for Research and Innovation, Horizon Europe, are equally accessible to all actors who contribute to GBI implementation and realisation. There is also clear need to recognise the benefits of natural capital in financing mechanisms and promote the implementation of GBI on a larger scale. Adequate financing and investments in GBI from national, regional and city governments should be mobilised, independent of short political term cycles. This included financing GBI or hybrid (green and grey) solutions and requires a focus beyond pilot and demonstration projects to allow for the large-scale implementation of GBI.

Public programmes should be designed in a way that enable citizen-driven and bottom-up initiatives (e.g. the development and implementation of ‘citizen neighbourhood concepts’) and trigger investments from the private sector (business, foundations, NGOs etc.).

With sustainability as the target, a fundamental precondition for successful GBI is that it is designed and governed as an integral part of the larger urban system and to ensure that benefits provided by green and blue spaces are fairly distributed amongst urban residents. GBI should be pursued in combination with multiple objectives such as climate change mitigation and adaptation, human health and well-being, improving air quality, local food production, economic development and biodiversity conservation. This requires an integrated approach across sectoral policies and departments.

ENABLE researchers highlight that cities have diverse population growth and decline as well as changing land use dynamics, but what most cities have in common is an increase of sealed land at the cost of green space. The average supply of urban green space in Europe is 15-22 m² per person, with above average supply in Northern European cities and below average in Southern European cities (Wolff, M. & Haase, D, 2019). These differences in supply, as well as in planning and governance schemes, result in differences in GBI conditions and potential.

Future opportunities for urban GBI – operationalising the European Green Deal

GBI is essential in achieving the objectives of the European Green Deal, in terms of climate change, biodiversity, social conditions and economic development. The COVID-19 crisis shows clearly

the interdependence between human health, well-being of our urban society and the natural systems on which they depend. It also demonstrates how closely intertwined these outcomes are with the institutional environment. The European Green Deal can support the transition to a more resilient society, protecting biodiversity and restoring ecosystems at all levels, including in cities. To do so, it must support and incentivise a systems based mainstreaming of GBI across urban governance sectors and levels. The ENABLE project may help as it has created a framework for aligning policies and identifying which policy spheres to align.

At the operational level, the ENABLE project cities have demonstrated a number of effective policy instruments, such as the Barcelona Open Space Resilience Strategy or the Norwegian Standard for Blue-Green Factor (BGF). The latter aims to safeguard blue-green structures and elevate the status of such structures within urban environments through awareness raising. The BGF may be used for certifying new buildings, and property developers are given flexibility to integrate blue and green elements in building plans. For Oslo the focus of the BGF has been on urban flood control functions of green and blue structures. Another example of a successful policy instrument is the Stockholm City Policy for Green Spaces. In February 2017, the City Council adopted Greener Stockholm, guidelines for planning, implementation and management of the city’s parks and nature areas, to strengthen the city’s green qualities and development of the public space. These guidelines are crucial for the protection of Stockholm’s parks, nature areas and watercourses and to achieve sustainable growth. The city’s parks and nature along with green spaces have an increasingly central role in meeting the challenges of climate change, and create a high quality of life for the city’s inhabitants.

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Project partners

