

## **Integrated Action Plan (IAP) within the framework of the URBACT IV BiodiverCity Project - Dunaújváros**

***“Dunaújváros – where nature and community grow together.”***

### **1. Executive summary**

This Integrated Action Plan (IAP) presents the key strategies and measures that Dunaújváros intends to implement as part of the URBACT IV BiodiverCity project. The aim of the plan is for the city to establish and accelerate interventions between 2025 and 2027 that will result in a more livable, greener, and more biodiverse urban environment in the long term, by 2030.

The plan is based on two comprehensive pillars:

1. Increasing environmental awareness and active participation among the population: involving communities, families, young people, and institutions. This includes, among other things, the kindergarten composting program and the "Flowery Dunaújváros" public competition, which has been running for more than two decades.
2. Developing urban biodiversity and applying nature-based solutions: this includes installing bird and bat boxes, insect hotels, deadwood programs, and creating unmowed areas next to schools and public spaces. These interventions contribute to climate change adaptation, heat island mitigation, and the enhancement of local ecosystem services.

In implementing the plan, the municipality relies on a broad partnership: local civil society organizations, educational institutions, companies, as well as city management and municipal departments jointly develop the interventions.

The plan takes an integrated approach that links environmental protection, health, education, and economic development. The IAP thus serves the needs of local communities and strengthens urban biodiversity, while aligning with the objectives of the EU Biodiversity Strategy 2030 and the National Climate Change Strategy. Dunaújváros aims to set an example of how a city with an industrial past can transform its urban fabric for a greener, more liveable and more resilient future.

### **2. Introduction**

#### **2.1 The URBACT Program and Sustainable Urban Development**

The URBACT Program is one of the European Union's flagship initiatives for supporting sustainable urban development. Its aim is to promote knowledge exchange between cities, the transfer of good practices, and the strengthening of integrated and participatory planning processes. What makes URBACT unique is that it not only offers professional solutions, but also helps cities develop their own customized action plans by involving local actors such as local governments, civil society organizations, communities, and economic actors.

Within this framework, the BiodiverCity project focuses on preserving and developing urban biodiversity, strengthening ecosystem services, and applying nature-based solutions (NbS). The aim of the project is for cities to share their experiences of pollinator-friendly green

spaces, rain gardens, green roofs, and community awareness-raising programs, and to develop measures that can be implemented at the local level.

Participation in the BiodiverCity project is of particular importance for Dunaújváros, as the city's industrial past, the effects of climate change, and the need for community involvement all make it necessary to support the green transition. Through the URBACT partnership, the city not only gains new professional knowledge and tools, but also has the opportunity to set an example for other municipalities and share its own good practices (e.g., the "Flowery Dunaújváros" competition, the kindergarten composting program) at the international level.

## **2.2 The BiodiverCity Network**

Dunaújváros is an industrial city that has historically been built on heavy industry, particularly steel production and manufacturing. Industrial activities have had a significant impact on the city's environment, particularly on air quality, soil and water conditions, and urban ecosystems. Nevertheless, there are many valuable green spaces in Dunaújváros, such as the areas along the Danube, city parks, and groves, which can contribute to sustainable urban development and increase local biodiversity.

The city's leadership recognized that addressing the environmental challenges caused by its industrial past and present is key to long-term sustainability and livability. Therefore, one of the main reasons for participating in the BiodiverCity project is to develop its green spaces, enhance urban biodiversity, and promote environmental awareness among the population through integrated and nature-based solutions.

The BiodiverCity project provides an opportunity for Dunaújváros to:

- Improve the urban microclimate, reduce the heat island effect, and increase the quality of natural habitats by developing its green areas.
- Raise the ecological awareness of local communities through public awareness campaigns and educational programs, thereby strengthening their commitment to sustainability.
- Apply NBS, such as biodiversity-friendly urban design elements, green infrastructure, and local habitat restoration programs.
- Adapt European best practices that can help promote sustainable urban development, with a particular focus on the specific challenges of industrial and post-industrial cities.
- Strengthen urban ecosystem services, for example by creating pollinator-friendly green spaces, sustainable water management, and soil conservation programs.

The aim of the project is to develop an integrated urban development strategy with the active involvement of local communities, which will contribute to improving the environmental conditions in Dunaújváros while ensuring social and economic sustainability.

## **2.3 Dunaújváros and the Justification for Participation**

As an industrial city, Dunaújváros aims to develop green spaces, raise community awareness, and introduce sustainable biodiversity solutions. Dunaújváros is one of Hungary's major industrial centers, historically built on steel production and heavy industry. However, industrial activities have resulted in significant environmental challenges, including air and soil pollution, the loss of green spaces, and damage to ecological systems. Recognizing these challenges, the city aims to gradually reduce its environmental impact, increase local biodiversity, and improve the quality of life for its residents by applying NBS.

Through its participation in the BiodiverCity project, Dunaújváros aims to acquire best practices and innovative urban biodiversity strategies that can be applied in a sustainable manner in the long term. The project provides an opportunity for the city to develop its environmental policy within the framework of international cooperation, while increasing the population's commitment to green and biodiversity-friendly urban solutions.

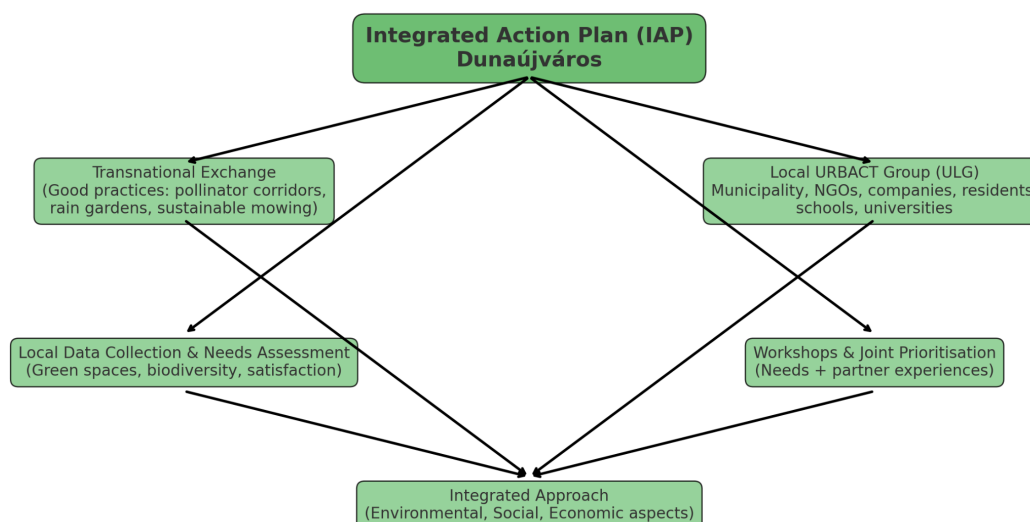
## **2.4 Methodology for Developing the Plan**

During the development of the Integrated Action Plan (IAP), Dunaújváros relied on transnational exchange of experiences, the involvement of local stakeholders, and joint workshops. The process was also shaped by the good practices of partner cities participating in the BiodiverCity network: the creation of pollinator corridors, the integration of rain gardens into urban green spaces, and sustainable mowing practices all provided inspiration and offered adaptable elements for Dunaújváros.

The Local URBACT Group (ULG) was at the heart of the local process, involving various departments of the municipality, civil society organizations, companies, residents' representatives, and educational institutions. Primary schools and landscape architecture students played a particularly important role, contributing fresh perspectives and creative ideas to the planning process. Their participation not only strengthened the involvement of younger generations, but also created an opportunity to highlight the educational and awareness-raising dimensions of the plan.

As part of the methodology, local data collection and needs assessment were carried out: background analyses of the city's green space structure, resident satisfaction, and biodiversity status ensured that the actions responded to real needs. The needs identified in this way were jointly prioritized during workshops and then aligned with the experiences of transnational partners.

The process was characterized by participation and an integrated approach: environmental, social, and economic aspects were all taken into account, so that the final plan strikes a balance between the priorities of biodiversity development, community involvement, and sustainable urban development



## 2.5 Involvement of different Stakeholders

The key to the success of the Integrated Action Plan is broad and active participation. The following stakeholders play a decisive role in planning and implementation:

- Local government: strategic management, professional coordination, resource provision; involving several departments (Green Office, City Operations, Chief Architect's Office, Education and Culture Department).
- Educational institutions (kindergartens and schools): primary venues for shaping attitudes and educating the next generation; with the active participation of children (e.g., kindergarten composting program).
- Civil and environmental organizations: professional knowledge, mobilization of volunteers, organization of community programs, support for monitoring and data collection.
- Population and communities: competitions, citizen science programs, community tree planting; participation in daily maintenance and care.
- Companies and economic actors: CSR contributions, support for green roofs and tree planting, provision of local resources.
- Resident self-organizations, neighborhood communities: initiatives by condominiums, residential communities, and groups of friends that strengthen community identity and a culture of sustainability.

The involvement of stakeholders is not limited to consultation, but is based on joint decision-making and joint action. The city's goal is for stakeholders to be active co-creators in the implementation of the IAP, rather than passive participants.

## 3. Current Situation, Needs, and Vision

### 3.1 Biodiversity and Nature-Based Solutions in Dunaújváros

The green spaces of Dunaújváros serve a variety of functions: the riverbank has recreational and ecological value, public parks are places where residents can relax every day, and community gardens and smaller green spaces improve the livability of the urban fabric. However, the current state of urban biodiversity is limited because built-up areas and the transport network severely fragment habitats. As a result, species movement and the continuity of the ecological network are disrupted at several points. Nature-based solutions offer a dual opportunity for cities: on the one hand, they help to adapt to environmental challenges (e.g., heat waves, extreme precipitation), and on the other hand, they generate direct social benefits by involving the population and improving quality of life. The use of these tools is being launched on a trial basis as part of the BiodiverCity project, but the aim is for them to become an integral part of the city's green infrastructure in the long term.

### 3.2 Main Challenges

Strengthening urban biodiversity depends on several mutually reinforcing factors:

- Environmental awareness is not yet sufficiently deep-rooted, and many residents do not connect their everyday actions with the state of urban ecosystems.
- Existing parks and green belts do not always serve as diverse habitats, so targeted interventions are needed to enrich biodiversity.
- The management of green waste and organic matter is not systematic, so composting and circular solutions need to be expanded.
- Pollution from industrial heritage and climate extremes have a combined effect on the urban environment, which increases the urgency of interventions.

### 3.3 Strategic Fit

The Dunaújváros Integrated Action Plan is closely aligned with both European Union and Hungarian biodiversity and sustainability strategies, ensuring that local interventions contribute to broader environmental and climate policy objectives.

#### European Union Strategic Connection

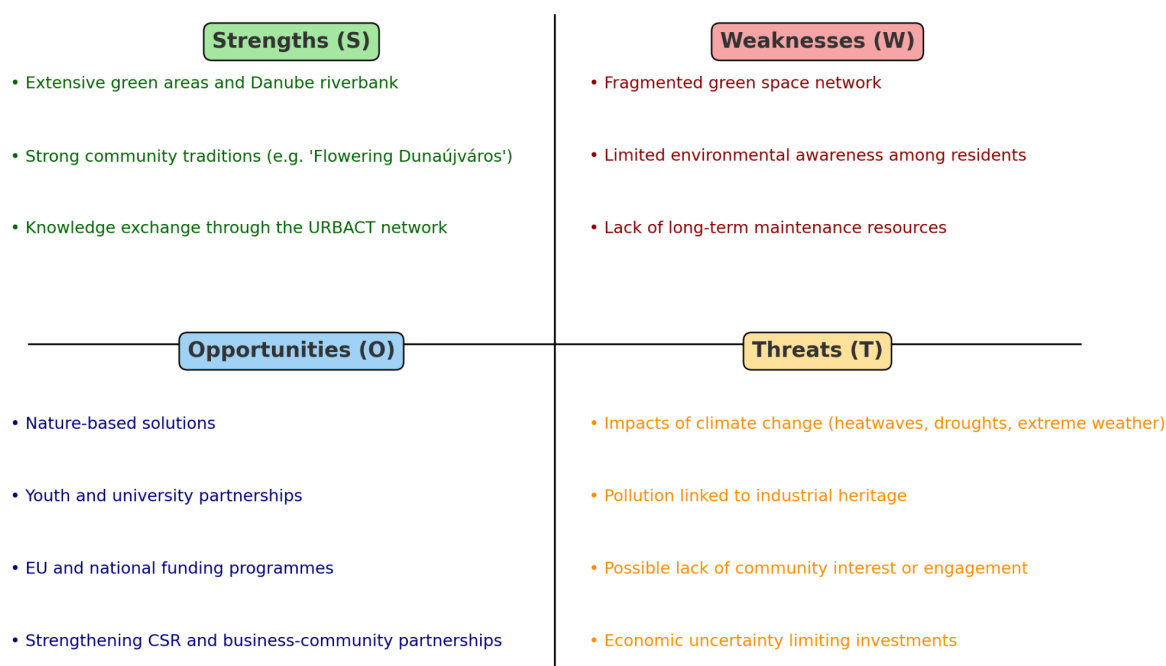
- **European Green Deal:** The objectives of the BiodiverCity project are in line with the European Green Deal's ambition to make Europe the first climate-neutral continent by 2050. The nature-based solutions, urban greening and biodiversity protection planned by Dunaújváros contribute to sustainable urban development and the protection of ecosystems.
- **EU Biodiversity Strategy 2030:** The IAP is aligned with the EU Biodiversity Strategy, which aims to restore and protect nature, in particular by increasing the proportion of urban green spaces, improving the quality of natural habitats, and supporting the protection of pollinators.
- **Nature Restoration Law:** Urban measures to increase biodiversity are in line with the new EU Nature Restoration Law, which encourages the restoration of degraded ecosystems and the protection of biodiversity.
- **EU Adaptation Strategy:** The IAP contributes to climate change adaptation strategies, in particular by reducing urban heat islands, creating rain gardens, and supporting nature-based water management solutions.

## Strategic Connection in Hungary

- **National Biodiversity Strategy 2030:** Hungary's biodiversity strategy for 2030 aims to strengthen ecosystem services, preserve habitats, and protect biological diversity. Dunaújváros's objectives, such as planting pollinator-friendly vegetation and installing insect hotels, are directly in line with these goals.
- **National Climate Change Strategy (NÉS-2, 2018–2030):** Urban biodiversity programs and green infrastructure developments support the objectives of the National Climate Change Strategy (NÉS-2), particularly in the areas of climate change adaptation and increasing carbon sequestration capacity.
- **National Environmental Program (NKP 2021–2026):** The NKP aims to improve the state of the environment, protect wildlife, and maintain ecological balance, which is in line with Dunaújváros's biodiversity development plans based on nature-based solutions.
- **Hungary's Sustainable Development Strategy:** The country's sustainable development strategy treats sustainable urban planning, the development of green infrastructure, and increasing the environmental awareness of the population as priority objectives, all of which are also implemented within the framework of the Dunaújváros IAP.
- **Settlement Development Concepts and Climate Strategies:** Dunaújváros's own Sustainable Energy and Climate Action Plan (SECAP) and Settlement Development Concept also include biodiversity and climate adaptation goals, which are further strengthened and complemented by the BiodiverCity project.

## 3.4 Key Challenges and SWOT Analysis

The main challenge for Dunaújváros is to significantly increase urban biodiversity with the active involvement of the community. Although the city has a significant amount of green space, its ecological value is currently limited, and the environmental awareness of the population is not strong enough to bring about long-term sustainable change. The aim of the IAP is to view biodiversity interventions not merely as "green projects," but as community initiatives that strengthen local identity, promote a sustainable mindset, and contribute to climate change adaptation. The key question, therefore, is how to integrate nature-based solutions into the structure and functioning of cities in a way that brings real ecological benefits while also making local communities feel a sense of ownership. This dual approach, ecological and social, ensures that measures are sustainable not only in the short term but also in the longer term.



### 3.5 Vision and Main Objective

**Vision:** The vision for Dunaújváros is a city where natural values and urban life are harmoniously connected. The goal is a greener, more biodiverse, and more environmentally conscious Dunaújváros, where public parks, riverbanks, and urban green spaces not only serve a recreational function, but are also home to living, diverse ecosystems. The city's residents can be proud that their joint actions contribute to the preservation of nature, while creating a healthier, more livable, and more climate-resilient urban environment for themselves and future generations.

**Main objective:** The central objective of the IAP is to combine the preservation and enhancement of biodiversity with the environmental awareness and active participation of the population. This means that the planned measures are not merely ecological interventions, but also community programs through which residents, from children to the elderly, can experience the value of nature and the importance of environmental protection through their own experiences.

The implementation of this objective is based on three pillars:

- Ecological pillar: enriching urban habitats, developing green infrastructure, and applying nature-based solutions.
- Social pillar: involving the population, communities, and institutions in joint actions that strengthen environmental awareness and community cohesion.
- Education and awareness-raising pillar: developing a long-term sustainable approach through the active participation of children, young people, and students.

This approach ensures that Dunaújváros becomes both ecologically richer and socially more committed, setting an example for other Hungarian and European cities.

## **4. Comprehensive Logic and Integrated Approach**

### **4.1 Strategic Objectives**

The Integrated Action Plan is based on two mutually reinforcing strategic objectives, which together will bring about long-term change in Dunaújváros.

The first objective is to raise environmental awareness among the population, which involves not only providing information but also actively involving people in local initiatives. Community actions and programs are designed to provide tangible experiences, such as joint field activities, school and kindergarten projects, and neighborhood cooperation. In this way, environmentally conscious behavior becomes not just a campaign, but an everyday practice that is shaped and passed on by different social groups in the city.

The second objective is to increase urban biodiversity, which is closely linked to sustainable urban planning and habitat restoration. The emphasis is on increasing the ecological value of existing green spaces and integrating new, nature-based solutions into the urban fabric. Habitat restoration not only takes ecological considerations into account, but also urban climate adaptation and improving human well-being.

The two objectives reinforce each other: biodiversity improvements make sense if the population actively participates in them, and awareness-raising programs are effective if tangible changes, new habitats, and green solutions appear in the city. The IAP therefore treats social and ecological aspects as equally important and aims to set an example for the green transition of an industrial city by implementing both objectives together.

### **4.2 Areas of Intervention**

The implementation of the Integrated Action Plan takes place in several closely related areas of intervention. These areas ensure that biodiversity development does not take the form of isolated projects, but is integrated into the everyday life and long-term functioning of the city.

#### **Environmental awareness raising and education**

Raising environmental awareness among the population is a key objective, supported by public campaigns, school and kindergarten programs, and community events. The "Flowery Dunaújváros" competition plays a prominent role, building on its long tradition to not only beautify the city, but also to have a community-building and educational effect. The kindergarten composting program also fits into this area, as it shapes the environmentally conscious attitudes of the future by involving the youngest children and their families.

Excellent examples: ECO Day organized by the City Defenders New Settlement Association, during which a joint blood drive, waste collection, and wildflower garden creation took place. The event is an excellent opportunity for community building and awareness raising.



Another good practice was the organization of the BiodiverCity Festival on Szalki Island, which was also known as ECO Day. The municipality of Dunaújváros attracted the city's residents, including young children, with colorful programs, games, and activities.



### **Development of urban green infrastructure**

The quantitative and qualitative development of urban green spaces is a fundamental area of intervention. This includes planting new trees, creating shaded tree-lined avenues, establishing rain gardens, and introducing nature-based practices such as designating unmowed areas or deadwood programs. These interventions simultaneously serve to increase biodiversity, adapt to climate change, and improve the quality of urban life.

### **Biodiversity protection and habitat enrichment**

Specific actions are being taken to enhance urban biodiversity, such as installing insect hotels, birdhouses, and bat boxes, and planting pollinator-friendly vegetation. Through these steps, urban green spaces represent not only aesthetic but also ecological value, supporting species survival and the restoration of ecosystem services.

### **Sustainable urban operations and partnerships**

Improving waste management and promoting circular solutions are essential for ensuring long-term biodiversity and sustainability. In addition to composting initiatives, cooperation with local companies is also crucial. This area ensures that interventions are not just one-off projects, but are firmly integrated into the day-to-day functioning of the city.

## **5. Preservation of Cultural Heritage and Urban Identity**

Preserving cultural heritage and strengthening community identity are integral parts of sustainable urban development. Dunaújváros has a unique history: its industrial heritage, social changes, and the lives of the communities living here have together shaped the city's image. These stories are not just memories, but values that contribute to the formation of local identity and the strengthening of the self-identity of future generations.

It is important for the city that the stories of its residents are heard and preserved. By archiving individual life stories, family memories, and community experiences, a collective

knowledge base can be created that both documents the past and provides inspiration for the future. The city wants to present these stories not only in writing, but also in creative forms such as exhibitions, digital archives, art projects, and community events, so that they can be brought to life and experienced by everyone.

In order to strengthen identity and increase community pride, Dunaújváros is planning several specific measures for the future:

- Collecting and archiving stories from residents: personal interviews, recollections related to local events, creation of a digital story bank.
- Development of an educational trail using digital solutions: a themed walking trail that showcases the city's natural and cultural values, linking biodiversity and the city's past. This provides an opportunity for residents and visitors alike to better understand the history of Dunaújváros's development.
- Creation of a tree register: a complete survey and digital record of the city's tree population, which not only helps to preserve its green heritage, but also gives the population the opportunity to participate (e.g. through an "adopt a tree" program).
- Strengthening community involvement: through local forums, workshops, and creative events, residents will become not only recipients but also active participants in the process of preserving the city's heritage.

The city's leadership is committed to ensuring that strengthening local identity and pride is not a one-off action, but is integrated into the city's long-term development strategy. The initiatives that result from this will help the residents of Dunaújváros feel more connected to their city, work together to preserve its values, and proudly showcase them to other cities and communities.

## 5.1 Planned Measures

The actions were inspired by professional trips organized by the Biodivercity project.

- Drawing competition for schoolchildren: The best drawings will be displayed around the city as part of the anti-litter campaign. One of the key tools for raising environmental awareness is to involve children in creative ways. To this end, the city is announcing a drawing competition for primary and secondary school students. The aim of the competition is for young people to show from their own perspective why it is important to reduce waste, recycle, and protect the urban environment.
- Monthly environmental articles in the local newspaper. One of the most effective tools for shaping attitudes is continuous and widespread information that reaches all residents. To this end, the city is launching a monthly environmental column in the local newspaper, which will present various topics from an easy-to-understand and practical perspective.

The aim of this section is to provide the public with not only theoretical information, but also specific tips, advice, and best practices for everyday life. Topics covered in the articles may include, for example:

- how to compost effectively in an apartment building or family home,
- planting pollinator-friendly plants on the balcony or in the garden,
- energy saving and water use tips,
- ideas for reducing waste, reuse, and selective collection,
- presentation of local green spaces and programs (e.g., rain gardens, unmowed areas, deadwood programs),
- seasonal environmental advice (e.g., shading during summer heat waves, energy conservation in winter).

The authors of the articles will be diverse: municipal experts, representatives of local civil organizations, teachers, and even students will have the opportunity to write short articles and create illustrations. In this way, the column not only provides information, but also creates a community platform where different actors can share their experiences and ideas.

In addition to being published in print, the articles will also be posted on the city's website and social media platforms, reaching a wider audience and making them easily searchable in digital form.

The long-term benefit of the monthly column is that environmental protection and sustainability are constantly present in the city's public life, not as a campaign, but as a permanent message. This helps to make green thinking a natural part of everyday life for the population.

- Kindergarten composting program: Kindergarteners bring organic waste collected at home to the kindergarten compost bin. Kindergarteners bring organic waste collected at home (e.g., kitchen scraps, eggshells, coffee grounds, chopped garden clippings) to the kindergarten compost bin. The city launched the program with a short, playful presentation and lecture, where the little ones could learn about the basics of composting, followed by a joint chestnut and leaf collection. Professional composters were set up in kindergartens with the support of teachers and city officials. Each preschooler received a small bucket to collect compostable household materials with their family and bring them to the preschool; after dropping off their contributions, they receive a sticker, encouraging regular participation through friendly competition. The program involves multiple age groups in concrete action (children, parents, teachers), reduces green waste disposal, and improves soil quality in garden beds locally. We incorporate the experiences and measurement data (quantity delivered, participation rate, compost quality) into the IAP monitoring, and we also disseminate good practices to our network partners.



- Spring awareness-raising festival with educational programs and family events.



- **Habitat restoration:** A key element in increasing urban biodiversity is the implementation of specific habitat restoration measures that directly improve species richness and promote the functioning of natural ecosystem services.

- **Deadwood program:** Deadwood is often removed from urban environments for safety or aesthetic reasons, even though it provides a vital habitat for many insects, fungi, and microorganisms. The aim of the program is to leave deadwood elements in designated areas—parks, forest strips—and to place them in a conscious manner. Research shows that deadwood significantly increases the species richness of arthropods and birds and plays a role in maintaining the natural nutrient cycle (Löfroth, T. et al. (2023). Deadwood Biodiversity. In: Girona, M.M., Morin, H., Gauthier, S., Bergeron, Y. (eds) Boreal Forests in the Face of Climate Change. Advances in Global Change Research, vol 74. Springer, Cham. [https://doi.org/10.1007/978-3-031-15988-6\\_6](https://doi.org/10.1007/978-3-031-15988-6_6)).
- **Pollinator-friendly flower beds:** Planting pollinator-friendly species is a key objective in the redevelopment of urban public spaces and parks. Native flower species are not only aesthetically pleasing, but also provide a food source for bees, butterflies, and other pollinators. According to the European Commission, the decline of pollinators is one of the most serious ecological problems, which is why it adopted the EU Pollinators Initiative in 2020, which emphasizes the role of urban green space transformation in protecting pollinators (European Commission, 2020. EU Pollinators Initiative – progress report).
- **Installation of bird and bat boxes:** Artificial nesting boxes help species that find it difficult to nest in urban environments to settle. Birds contribute to the natural control of pests, while bats act as nocturnal insect exterminators, thus providing a direct ecological service.

These measures are not implemented in isolation, but complement each other, thus contributing to the transformation of the city's green spaces into complex, ecologically valuable habitats that serve biodiversity, climate adaptation, and the well-being of city dwellers.





The new inhabitants of the dead tree:



- **Making insect hotels**



Insect hotels play an important role in increasing urban biodiversity, as they provide a safe habitat and wintering place for pollinating insects such as bees, butterflies, and ladybugs. These species are key to pollinating plants and maintaining urban ecosystems. Insect hotels also serve as a tool for raising awareness, as their construction and maintenance allow the public, especially children, to directly experience the importance of nature conservation.

- Expansion of the Flowery Dunaújváros competition with a special prize for "Biological Diversity"



Every year since 2000, we have announced the "Flowery Dunaújváros" public flower-planting competition, in which all residents, apartment buildings, residential communities, civil organizations, institutions, company, shop, or business can participate with a flowered or planted garden, window, balcony, shop entrance, or flower box. In 2025, we will be organizing the competition for the 26th time. Applicants may enter multiple categories. The top three entries in each category will receive prizes; in justified cases, we may award multiple 2nd and 3rd place prizes. We will award a special prize to those who have won first place in the past two years and continue to maintain an exceptionally high standard of floral decoration.

Those who do not place will receive a certificate and a plant gift. Each year, we reward competitors celebrating milestone anniversaries (5, 10, 15, 20, 25, 30, etc.) with anniversary prizes. First-time applicants receive a "First Swallow" gift. Currently, there are a total of eight categories in which to compete, which can be expanded as needed. The prizes consist of flowers, plants, and certificates. Since 2025, a special prize has been awarded to the most diverse, colorful, and varied garden (the "Biological Diversity" special prize). The competition has a strong community-building power: in nurseries, kindergartens, and schools, children and their parents participate in planting and caring for the flowers; the creation and joint maintenance of apartment building and residential flower gardens brings city dwellers together. The program serves both to beautify the city and to educate about the environment, setting a good example and demonstrating good practice for all communities.

- **Biodiversity-friendly urban planning:** Expansion of unmowed zones and planting of native plants.

Nature-based solutions are playing an increasingly important role in the maintenance of urban green spaces. Designating unmowed zones allows vegetation to grow naturally in certain areas of the city, providing a rich habitat for pollinators, insects, and small animals. This practice not only increases biodiversity but also reduces maintenance costs while contributing to urban climate adaptation.

At the same time, planting native plants is particularly important, as they are better adapted to local environmental conditions, more resistant to extreme weather conditions, and provide an ideal habitat for local wildlife. Public parks, street trees, and flower beds planted with native species create a more sustainable, self-regulating ecosystem in the city in the long term.

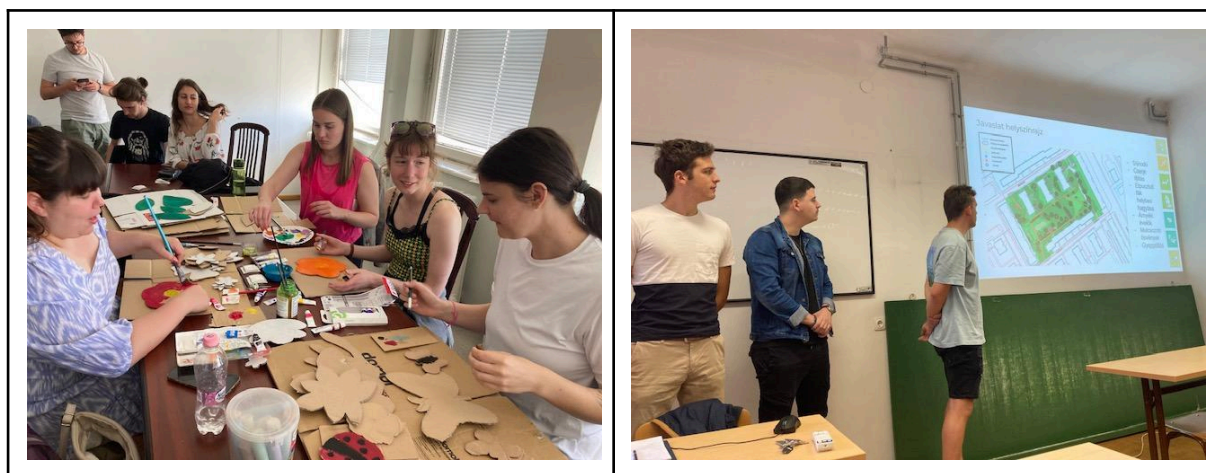
Expanding unmowed areas and planting native vegetation therefore serves a dual purpose: it helps the city's ecological resilience and contributes to a healthier, more natural urban environment.



- **Organizing ULG meetings, university collaborations**

The IAP is based on joint workshops, transnational exchange of experiences, and the active involvement of the Urban Local Group (ULG). In May 2024, fieldwork carried out with students from the Hungarian University of Agricultural and Life Sciences confirmed that the active involvement of young people creates tangible value in local biodiversity development and awareness raising. In the future, the city will make a special effort to establish lasting university partnerships: it will provide venues, data access, and mentoring for fieldwork and applied research, and will work on joint projects involving the Green Office, City Operations, the Chief Architect's Office, and other municipal units. Our goal is to set a good example for other municipalities and higher education institutions and, as an open, learning city, to provide a platform for

the examination, testing, and evaluation of nature-based solutions. The results and feedback from field exercises are regularly incorporated into planning and maintenance practices during the implementation of the IAP.



- **Creating green roofs and green walls**

One innovative way to reduce the urban heat island effect, enhance biodiversity, and improve the energy efficiency of residential and public buildings is to create green roofs and green walls. These interventions not only have aesthetic value, but also significant ecological and economic benefits. Green roofs act as thermal insulation, reduce the energy consumption of buildings, help retain rainwater, and provide microhabitats for insects and birds. Green walls also improve air quality, reduce noise pollution, and contribute significantly to making the urban environment more people-friendly. In Dunaújváros, such investments will first be made on the roofs and facades of public buildings (e.g., municipal buildings, cultural institutions, educational institutions), but in the longer term, the program also aims to encourage the involvement of condominiums and businesses. An important element of the project is informing the public and presenting good examples so that the use of green roofs and walls becomes more widespread in the city. With this action, the city is contributing to climate adaptation, increasing biodiversity, and sustainable urban functioning, while also strengthening community awareness.

## **6. Implementation Framework**

### **6.1 Governance Mechanisms**

The Local Government of Dunaújváros is responsible for implementing the Action Plan, ensuring the program's implementation through the coordinated work of several departments (e.g., urban development, environmental protection, education, and culture). The process is strongly supported by the city's leadership: the mayor and deputy mayors are personally committed to increasing biodiversity and strengthening community involvement. This high level of political support ensures that the program is treated not only as a professional priority but also as a strategic one in Dunaújváros.

## **7. Summary**

### **7.1 Communication and Dissemination**

The key to the success of the Integrated Action Plan is to keep the city's residents, institutions, and partners informed about biodiversity initiatives and their results. To this end, Dunaújváros uses several communication channels:

- **Website and social media:** a separate subpage will be created on the municipality's website, where news, events, best practices, and photo reports related to the BiodiverCity program will be available. Social media platforms provide fast and interactive communication with the public.
- **Events and campaigns:** the community can participate directly in the program through open days, tree planting campaigns, drawing competitions, contests, and public forums, which strengthens the awareness-raising effect.
- **Biodiversity Office:** the city will set up a thematic information point (Biodiversity Office) to provide information and professional advice to the public and institutions and to help coordinate voluntary initiatives.
- **Local newspaper and television:** a monthly environmental column in the newspaper and reports and interviews on local television will present the program's actions, results, and participants. This will ensure that the information reaches all age groups and social groups.

The aim of communication is to ensure that city residents are not merely passive recipients of information, but become active participants in biodiversity initiatives. Multi-channel distribution allows messages to be disseminated widely, repeatedly, and in a way that is easy to understand.

## 7.2 Ensuring Implementation

The long-term sustainability of the Action Plan is ensured by the fact that the measures are not independent, one-off projects, but are integrated into the city's local policies and strategies. A permanent organizational framework for the implementation of biodiversity actions is being established with the involvement of several departments of the municipality and through partnerships. Sustainability is further strengthened by the continuous involvement of the community and agreements with the corporate sector, which contribute to the sharing of resources and responsibilities. The involvement of additional resources (e.g., LIFE, Interreg, etc.) will make it possible to expand the actions.

## 8. Acknowledgements

We would like to express our gratitude to all participants and contributors who contributed to the implementation of the BiodiverCity project and the Integrated Action Plan of Dunaújváros with their work and commitment.

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