



# CENTRAL EUROPEAN URBAN RESILIENCE HANDBOOK FOR BEST PRACTICES

**CEURES**  
Central European Urban RESilience

Central European Urban Resilience Handbook for Best Practices

Editor: Gyula Nagy Ph.D.

Authors:

Gyula Nagy Ph.D.

Annika Lundkvist

Marcel Pikhart Ph.D.

Krisztián Tas Dr.

Ewa Korcelli-Olejniczak Ph.D.

Dávid Szebeni

Valéria Kličková Szomolai

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Dávid Szebeni, president

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## Introduction

### What is CEURES?

The Central European Urban RESiliency, or CEURES, is a project funded by the Visegrad Grants of the International Visegrad Fund. The project's goal is to contribute to the improvement of urban resilience in Central European cities by collecting and presenting best practices and developing e-learning materials. To help inclusively, these educational resources are available in Polish, Slovak, Czech, Hungarian, and English. The project involves partners

from four countries: from Hungary, the Urban Development Association; from the Czech Republic, the University of Hradec Králové; from Poland, the Leszczycki Institute of the Polish Academy of Sciences; and from Slovakia, the Forum Regional Development Center and the PONTIBUS EGTC.



In this volume, we have collected Central European best practices on urban resilience, which we believe are worth exploring in-depth. Our goal was to create a compilation of best practices that can serve as a knowledge base for every municipal government from Prague to Warsaw, through Bratislava, to Budapest. National experts from the four Visegrad countries participated in uncovering these best practices, summarizing the most important results, the most interesting innovations, and the most adaptable methods, grouped around four main topics, using a consistent set of criteria. The project seeks to find good responses to and reflect on daily challenges such as migration crisis, wartime emergencies, the pandemic, and the impacts of climate change on municipalities.



### How to Read the Handbook?

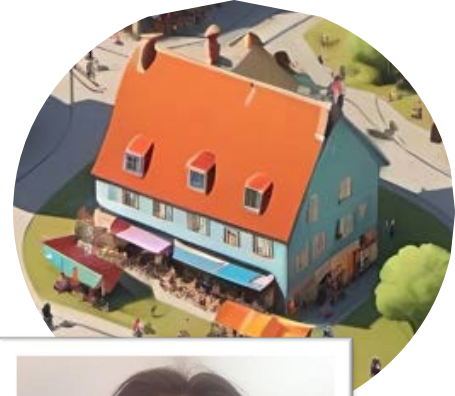
Each best practice starts with a brief summary that provides information on which country and which municipality or municipalities implemented the practice and with

what content. In most cases, the summaries consistently address the financing method, the positive outcomes, any potential risks, and how the practice can be adapted. We considered it important to gather information on how the local population was involved, and if there was an example of this, we highlighted it. Of course, we also provided contact information alongside the best practices, so if you, dear reader, would like to learn more about the topic or the practice, you can personally contact the implementers.



**We wish you enjoyable reading and an inspiring, productive time!**





## About our authors

Valéria Kličková Szomolai   
Slovakian expert

As a studied environmentalist, she is already 24 years present in the nonprofit sector as an NGO consultant for capacity-building, rural development and sustainable development. She cooperated in local development action planning in rural and urban areas throughout South Slovakia and is an active participant – as project manager or fundraiser – of many cross-border cooperation projects in the field of local development, tourism and environment. Being a local activist in Šamorín, Slovakia, she initiated the presented rain garden project, participated in the local pandemic prevention project and built a years-long cooperation with schools in environmental awareness-raising. Since 2021 she is running her own financial enterprise.




Marcel Pikhart  
Czech expert

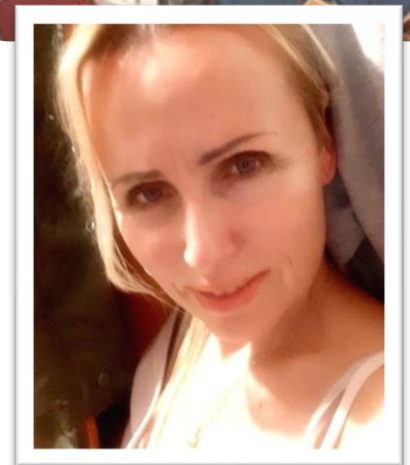


An Associate Professor at the University of Hradec Kralove, Czech Republic. He is a national expert for the CEURES (Central European Resilience) project, funded by the Visegrad Fund, which focuses on enhancing regional resilience through interdisciplinary research and collaboration. His expertise spans psycholinguistics, cognitive linguistics, and applied linguistics, with a strong emphasis on L2 acquisition, intercultural communication, and the intersection of cognitive and technological aspects of communication.




Ewa Korcelli-Olejniczak   
Polish expert

Habilitated doctor of social sciences in the field of human geography, associate professor at the Institute of Geography and Spatial Organization of the Polish Academy of Sciences, with experience as a lecturer at the Faculty of Pedagogy of the University of Warsaw. She also has education in linguistics. Participant of numerous research projects, including FP7 EU DIVERCITIES, ESPON, and HORIZON EUROPE "RUSTIK". She represents an interdisciplinary approach that mainly covers urban and regional studies, including issues of social diversity, changes in functions, interactions and territorial capital.







Annika Lundkvist   
Polish expert

A fellow of The Schumacher Institute and a PhD student at the Institute of Geography and Spatial Organization in Warsaw, Poland, where she researches issues of walkability as central to sustainable urbanism. She is the founder of Pedestrian Space ([pedestrianspace.org](http://pedestrianspace.org)), an NGO and media platform devoted to issues of urban resilience with a focus on themes of sustainable mobility, media and public awareness, narrative building, as well as community agriculture.



Krisztián Tas   
Hungarian expert

Leading urban development expert. His work focuses on urban service development and community development, the aim of which is to turn the population into a community and public services into community services. He deals with the exploration of settlement values and resources, the creation and strengthening of settlement identity, as well as the tailor-made adaptation of modern "smart city" technologies, volunteering, equal opportunities and integrative community development solutions.

Gyula Nagy   
CEURES lead expert

Geographer and urban planner from Hungary, adjunct professor at the University of Szeged. He obtained his PhD on the topic of spatial examination possibilities of environmental injustices in Hungary. He is the author of climate action plans and urban development documents for several Hungarian settlements. His major research focus is recently on climate justice, the European Green Deal, and the green transition of urban areas.



Dávid Szebeni   
President of the Urban Development Association

Dávid Szebeni has more than 15 years of experience in policy analysis, consulting, strategy development and development projects. He was managing director of a municipality-owned urban development company for six years. He has been the responsible manager for several real estate transactions and development projects. One of the projects led by his team won the MUT-ICOMOS Award of Excellence for Urban Regeneration. Senior expert and project leader of international development and research projects. Former staff member of the Office of the National Assembly and the Ministry for National Economy.



# 1. Warfare and urban resilience





Community resilience during times of war manifests in an extraordinary manner. Essentially, community resilience can be understood as the extent of a community's capacity and ability to utilize available resources consciously and effectively in response to specific situations. The resilience invoked by a community helps individuals and various social groups to resist and recover from unfavorable situations which are affecting the community, the settlement, or the region. Whether they stem from natural or man-made disasters or emergencies. A community equipped with strong social networks and well-functioning local formal- and informal systems is prepared for immediate action in case of a sudden, unforeseen disaster. Lives can be lost, livelihoods can be destroyed, and individual and communal properties and material assets can be ruined during disasters and conflicts. Yet, losses can also occur on the intangible side, affecting individuals and communities. Social networks and communities can be shattered. A resilient community, drawing from its own strength, can respond to these challenges.

Social resilience, from a societal standpoint, is the ability to manage external stresses and disturbances arising from social, political, and environmental changes. Social resilience is a broader concept than individual resilience, as it takes into account the economic, institutional, and social dimensions created by the community. Resilience also provides stability, a buffering capacity, which involves the ability to mitigate negative impacts. Additionally, resilience encompasses the ability to recover and restore after negative impacts, as well as the capacity for transformation, change, and adaptation following harm. Through the development of coping, adaptation, and mitigation strategies potential impacts on communities can be prepared for. However, in many cases, communities cannot prepare for the traumas and catastrophes they face, so immediate and local responses are needed. One aspect of the success of these responses is how quick and efficient they are to sudden social pressures and problems. In general, traditional administrative and governmental structures move slowly in crisis situations due to their size and rigidity, causing significant challenges to crisis management. During such times, the resilience of a settlement truly manifests, based on the cooperation and collaboration of local communities.

What does a resilient, self- and other-helping community look like?

- It assesses, understands risks and dangers, and takes steps to mitigate them, knowing that resilience is not just a given, it must be worked for and built.
- It does not lose its integrity or cohesion in times of disaster; it can revive and work for recovery.
- If the resilience of the settlement is evident, it does not let it disappear; it builds and nurtures it further, with the leading decision-makers and community opinion leaders acting exemplary and committed, thereby committing the residents as well.

The good practices we have studied reflect extremely diverse and varied approaches during the wartime period. They simultaneously showcase the viewpoints of local communities as well as the desire for altruism, human empathy, and solidarity. Thankfully, the collection of good practices includes various local government solutions that have either proactively contributed to crisis management or strengthened community and citizen solidarity movements, thereby assisting the victims of wartime events.



## 1.1. Volunteer-based cooperation to integrate war refugees in Banská Štiavnica



**Fig. 1.1.1. Banská Štiavnica, Slovakia, and the V4 countries**

Banská Štiavnica is a town in central Slovakia, of a population more than 10,000 inhabitants. It is a completely preserved medieval town listed as UNESCO World Heritage site.

The case study describes the establishment of an integrated support center for refugees in the first days into the war on Ukraine in February 2022.

The first Ukrainian refugees came into Banská Štiavnica just days into the war (around February 26, 2022). As a first help they needed a place to stay and the first one to make them an offer came from a group of 5 volunteers from the town. After the first weeks, they, though, recognized that it is not enough to give them shelter but they need to be also integrated step by step. The group of volunteers then reached out to more people and created a support group of about 20-30 people,

who started to give the refugees different services in their free time – help with necessities, community organizing, counselling, information services. After about a month, at the end of March 2022, they already operated as a community centre and integration group. The group of volunteers contacted the Town Hall and tried to establish communication and cooperation, but the town remained more or less passive, giving only the basic services required by the state. Till this day, they only have two persons who have a partly Ukrainian agenda all connected to administering the central state support programs – accommodation subsidies, schooling for the children, etc. As the volunteers created a relatively stable background for the refugees, the contact got quickly to the Slovak – Ukrainian borderguard, where the new refugees had information where to go. Thanks to the activities of the volunteer group, around 500 Ukrainians were accommodated in Banská Štiavnica (in December 2023 it is around 300 of them, with fluctuation, some leave, others come). The Ukrainian community centre was backed (and operated) by the local hostel Scout House which was financed by grants through the Foundation of Baden Pawel.



**Fig.1.1.2. Providing food for those in need**

The wider volunteer group of 20-30 people (all full-time employees in their civilian life) started to communicate with local companies and helped the refugees in finding jobs. They managed to mediate jobs for around 50-100 refugees, who were supporting other people (as about 30% of the refugee group was made up by children and another 30% had only temporary income). The result from this cooperation was that the companies gave the refugees lunch vouchers, transport and also jobs. For example, the restaurant Monarchy was able to employ 10 Ukrainians, whom they were able to offer also a place to stay. The support group organized throughout 2023 several public gatherings and started to cooperate with NGOs that lasts even into 2024. They organize workshops, language courses and cultural activities.



## Methods used to involve the community



The support structure was created by volunteers and required their own contributions. Some of the later activities get financing via state transfers or programs of the mentioned NGOs.

Personal contacts, public gatherings, common cultural and other activities by the involved companies and volunteers. A tool for public involvement was creating a Facebook page Ukrainian Club Štiavnica. Public disagreement or tensions by certain groups of population can emerge from the active help. Long-term passive attitude of local municipality can hinder the integration of refugees.

**Fig. 1.1.3. Workshop for students**

### Results reached

- The integration of refugees is a complex matter where the needs have to be handled on the personal as well as community level. Giving a helping hand by somebody with restricted scope or sectoral view would hardly be effective. This case study is remarkable because it shows how effectively could enterprises (companies) cooperate with a loosely organized volunteer group in a limited time frame. Unfortunately, the Town Hall still carries out only the basic necessities in the Ukrainian agenda, such as registration and registry.
- The support team building is an excellent part of this case study. The volunteers took over many of the tasks that would normally belong to the municipality.
- Accommodation found for the coming refugees (cumulatively around 500 persons, till December 2023)
- Jobs arranged for about 50-100 people till December 2023
- Activities and workshops for children – about 100 children cumulatively



**Fig. 1.1.4. Facebook header for the Facebook group**

### Adaptation possibilities and limitation

In Slovakia, many more municipalities had to adopt similar measures. On the municipality

level, the framework of help was more or less the same. Best practices came from towns where NGOs were active because they were always the first offering practical help. Potential limits in areas with low NGO density or nonprofit activity or experience.

### More info on the best practice

Contact person Samuel Novakovský, [samuelnovakovsky@gmail.com](mailto:samuelnovakovsky@gmail.com)

## 1.2. First-minute help for war refugees in Šamorín, Slovakia



Town Šamorín is located on the Danubian Plain on the Rye Island region, near the Gabčíkovo dam on the Danube, about 17 kilometres southeast of Bratislava. The town has a population of more than 13,500.

The case study describes the establishment of first-contact point for refugees in the first days into the war on Ukraine in February 2022.

Just days into the war on Ukraine, the first refugees flooded Slovakia. Town Šamorín was no exception. When the first refugees appeared, the local library – being a public place – reacted very quickly and via its network as well as paper posters announced its help as a first-contact point where the refugees could meet, gather and discuss. They organized a meeting with the refugees in early March, invited the local municipality, the local NGOs, the Slovak Red Cross’ local organization and set up a service on local level that helped refugees with practical issues upon arrival (obtaining documents of refugee status, finding a place to stay, internet access).

**Fig. 1.2.1. Šamorín, Slovakia, and the V4 countries**

organization and set up a service on local level that helped refugees with practical issues upon arrival (obtaining documents of refugee status, finding a place to stay, internet access).



**Fig.1.2.2. Emergency meeting for first-minute help.**



**Fig. 1.2.3. Announcement of one of the volunteers.**

The activity was greatly helped by long-time Ukraine-born local resident Kateryna Shuvaliuk, who volunteered to make daily „service hours” in the building of the library from March 2022, helping more and more families arriving in Šamorín.

The local NGOs led by the Red Cross local brand organized 3 rounds of local public campaign for donations of clothing, disposables and food and financial support starting February 27, 2022, again on March 7, 2022, then again on March 21, 2022. National-level legal support



came into effect weeks and months later, from March 14, 2022 providing subsidies for housing and disposables, from state funds transferred to the municipalities. The municipalities implemented the tasks in registering, housing and subsidizing the refugees and they could ask for extra funds via grant programs.

On this national-level background, local-level activities grow into a continuous support in form of Regular weekly meetings for UA families with children where the family members were given psychological support (involving national-level NGO for mental health – Liga pre duševné zdravie). The meetings included creative workshops for children and their parents, where Slovak families were also invited and attending. The parents were given technical assistance. The creative workshops run continuously and now are funded by UNICEF funds via the NGO Liga pre duševné zdravie. The workshops continue throughout 2023 with a lower frequency till now.

While the state help was organized and arrived, there was already a working support scheme built on the local level. Before any state arrived, the municipality invested re-allocated public money for buying groceries in the first weeks and covered interpretation costs (after initial voluntary translation from two ladies from Ukraine living in Šamorín) in an approximate sum 7200 EUR. These costs were not refunded to the municipality. The state transfers arrived much later.



**Fig.1.2.4. Items donated for the refugees**

#### **Methods used to involve the community:**

First-aid in the first weeks: many direct costs emerged but remained uncounted. Costs covered by the municipality voluntarily in the first weeks/months (till June 2022): cca. 7200 €

The community was involved via public calls to donate and get involved. People filled storehouses with necessities donated to the refugees and Slovak families with children attended the creative workshops created for the UA families to help their integration. Many of the local inhabitants offered free of charge housing in the first days. Later, a FB page Ukrainians in Šamorín was established, which further helped the integration of the refugees.

#### **Risk and threats for maintenance**

Social tensions within the community, particularly among less supportive groups, can surfaced, revealing underlying divisions and mistrust. These tensions stem from differing perspectives on resource allocation and the perceived impact of migration on local dynamics in many cases heated by mass media and misinformation.

The prolonged duration of the war can led to a decline in hospitality and willingness to offer aid. Additionally, the spread of hoaxes poses a threat to local support systems, while an unfavorable political orientation, exemplified by a new government, has resulted in cuts to state support. Though some towns and spots are overwhelmed by the influx of refugees, this is not the case in Šamorín.

### **Innovative and excellent elements of the best practice**

The crisis committee of the town, an already existing interdisciplinary structure, promptly convened and devised a plan of action. Refugees received tailored assistance, with children engaged in creative activities and adults provided with technical support. Various types of NGOs collaborated, addressing both material welfare and mental health needs. This initiative exemplifies cross-sectoral cooperation, involving state and municipal authorities, NGOs, and volunteers alike.

The presence of a Ukrainian-born and raised local citizen, knowledgeable about local issues and Slovak processes, ensures no language barrier with refugees. The swift establishment of the first-contact center, initiated by the library with support from citizens, NGOs, and the Ukrainian-born resident, preceded state support. Psychological aid played a crucial role in refugee integration, facilitated by activities in a low-threshold center offering free, accessible services with separated facilities, gender-inclusive staff, and a welcoming environment for children.

### **Results reached:**

- Around 500 people were given help in administrative issues, received food supplies and clothing. Most of them were in Šamorín only short-term (those able to find accommodation with the help of the local Ukrainian native) because accommodation was offered for them in the Gabčíkovo retention facility. Registration was not in the centre of attention as there was an overwhelming need of everything and the number of people coming was very high.
- Currently 136 Ukrainian refugees live in Šamorín, they are registered through a state accommodation program.
- There was no apparent supporting structure to find work, the refugees likely relied on K. Shuvaliuk, a local Ukrainian native as well as local inhabitants.

### **Adaptation possibilities for other settlements**

In Slovakia, many more municipalities had to adopt similar measures. On the municipality level, the framework of help was more or less the same. Best practices came from town where NGOs were active because they were always the first offering practical help. This approach is most effective in larger settlements with established nonprofit organizations. Having a first-contact information point or designated contact person is essential. Additionally, cultural, geographic, and linguistic proximity can significantly facilitate the welcoming and adaptation of arriving refugees.

### **More info on the best practice**

URL: <https://šamorín.sk/mesto-otvorili-informacne-centrum-pre-ukrajincov>

Contact persons: Krisztína Mikóczy, Town Hall Šamorín, office: +421-31-5900411, mobile: 0918 477 371, [kristina.mikocziova@šamorín.sk](mailto:kristina.mikocziova@šamorín.sk) / Ilona Pirk, Local library Šamorín, 0905 164 832, [pirkilona@gmail.com](mailto:pirkilona@gmail.com)



### 1.3. Municipal War Response and Social Capital Evoked by Crisis



**Fig. 1.3.1. Warsaw, Poland, and the V4 countries**

Warsaw is the capital of Poland with a population of more than 1,8 million people is the 7th most-populous city in the European Union. The metropolis stands on the River Vistula in east-central Poland. The case study describes how Warsaw established its helping system for the Ukrainian refugees.

As a result of Russia’s military attacks in Ukraine, from February 24th to May 31st 2022, 170,000 refugees registered in the Warsaw metropolitan area. Almost 800,000 refugees passed through the city with over 300,000 refugees staying in Warsaw for more than three days in March mainly women and children, which was the peak of the military attacks in Ukraine. These refugees needed a diversity of services and support including hospital care, information, accommodation, schooling and more that the municipality had to provide. The city of Warsaw noted this

situation as “Warsaw in the Refugee Crisis”. This situation could have not been handled and solved without the engagement of the citizens of the city. In a survey commissioned by the City Hall during the first month of the crisis, 74% of the population of Warsaw declared their commitment to helping refugees. This situation seemed very difficult in terms of acceptance of the society, particularly in a country that traditionally harboured suspicions toward foreigners, including immigrants from Ukraine who faced challenges in Poland prior to the war. Yet people were very generous and helpful towards refugees. Many Ukrainian refugees have successfully rebuilt their lives and business while relocating to Poland, with the support of local municipalities. The municipalities created a welcome point for refugees, where various ways of support were provided like fast-access to personal identity numbers, financial support, free education and health care. There were charity collections organized in 2022 (the first month of the war) by municipalities and local residents.

Many bottom-up actions and initiatives were facilitated refugees were taken to private homes. Local residents also helped via organizing collection points and donations of food, clothes, medicine and more in efforts that can be regarded as crisis-driven social capital. While such social capital is itself not a best practice, it can be regarded philosophically as an essential layer of a resilient community. Such social capital becomes a pivotal local asset when crisis strikes, with the local community mobilizing in a way that is shaped by local ethics and values, part of the culture that becomes evident in the local response to crisis prior to formalized policy driven responses and initiatives.

The funding was mixed, governmental municipal and citizen co-financing process covered the cost of the refugee-aid process. The immediate needs had to be covered very fast, so immediate funds were provided to address the crisis.

#### Results reached

- The municipal response to the crisis required attention to diverse needs of migrants. The actions undertaken included admitting Ukrainian children of all ages into schools, offering free public transit to Ukrainians displaced by the war, supplying a variety of goods and financial aid to migrants, establishing information hotlines, assisting migrants arriving by rail in various cities, dispatching material goods to Ukraine, and offering medical support to migrants.
- The help and the assistance provided was very interdisciplinary with wide range activities including mental aid, financial help, free transportation etc. The crisis management tried to reply to the various needs of the refugees.

- The nation reacted together, there was a need for facilitation and organization, but people were voluntarily participating in the aiding process.
- City administrations made efforts to address the challenge by establishing large halls for Ukrainian refugees to reside in and receive aid. There was widespread willingness among Poles to offer help to refugees from Ukraine. Both government and local authorities were heavily engaged, both organizationally and financially, in supporting Ukrainian refugees.
- In response to the influx of approximately 1 million people, with around 10% choosing to remain in the city of Warsaw, Warsaw undertook significant efforts and numerous tasks. The city's response was effective. The responses included registration of individuals, endeavors to secure accommodation, healthcare provisions, educational opportunities for children, employment assistance for adults, psychological support services, integration events with the local community, and even vaccination and registration services for pets.
- The first and fastest predominant responses came from individuals, social organizations, and universities, offering assistance and support. Social initiatives aimed at collecting clothes for Ukrainian refugees and seeking accommodation for them.
- The extensive assistance and the welcoming attitude of society, the sense of solidarity and the shared perception of a common threat from Russia were highlighted as pivotal factors in fostering such support.

### **Risk and threats for maintenance**

The nation responded emotionally and was enthusiastic at the beginning, drawing from long-term family experiences such as those from WWII, and offered as much assistance as possible to those in immediate need. The local community was reacting faster than the government, local government and business. Community members actively participated in providing first aid to refugees. Currently, the enthusiasm has waned though and xenophobic attitudes are visible, but the overall picture is still positive. In the first phase there was great commitment, later, interest and involvement decreased, and this will lead to other problems in maintenance. However, the response was inclusive and very fast. It was also deemed short-sighted because the massive influx of migrants is anticipated to lead to significant long-term social challenges, some of which have already begun to surface in 2023.

### **Adaptation possibilities for other settlements**

The response to crisis differed locally. In the Warsaw case the spontaneous character and scale should be emphasized. Different cities have different capacities and financial possibilities this may limit the aiding process. Also, some cities more positioned on the border are facing more challenges than other, further from the border zone.

### **Sources and References:**

Warsaw in the refugee crisis: Report for the first three months (Prepared by: Strategy and Analysis Office of the City of Warsaw, June 2022)



## 1.4. Accessing Urban Mobility during Wartime



**Fig 1.4.1. Poland, of the V4 countries**

Poland is the fifth-most populous member state of the European Union with population of over 39 million people, and the largest Central European state. Famous for the solidarity movement which developed a very useful attitude towards those in need. The case study describes how public transport was provided for Ukrainian refugees.

Free travel on public transportation was provided to Ukrainian citizens in connection with the war started by Russia against Ukraine on February 24th. This best practice focuses on the case of Warsaw, however, the practice was widespread in diverse Polish cities. The free travel period

began on April 15, 2022, the first day of new regulations regarding free travel on Warsaw Public Transport (Warszawski Transport Publiczny - WTP) for Ukrainian citizens, and was valid until May 31, 2022. During this time, all forms of public transit in Warsaw could be used free of charge by Ukrainian citizens who met three criteria: having arrived in Poland on February 24 or later in connection with the onset of war, having come to Poland legally, having a document confirming arrival in Poland on February 24 or later. Authorizations were accepted on all WTP vehicles in ticket zones 1 and 2. The introduction of free public transportation in Warsaw was among the first in Europe and served as a symbolic gesture of assistance to those who had temporarily settled in the city, fleeing from war and losing their previous means of livelihood and housing. It was a symbolic yet impactful intervention that facilitated daily integration, and later, several other major European cities followed this best practice.



**Fig. 1.4.2. Public transport in Poland. Photo credit: ZTM Warsaw**

### Methods used to involve the community

The practice was inclusive to all migrants who fulfilled the conditions to be eligible. The population was informed to prepare for the fact that refugees would also have access to public transportation services. They were advised that there would likely be a significant increase in usage following the introduction of free fares, and they should be prepared for this. As an example, Warszawski Transport Publiczny managed this practice which was introduced by Order No. 611/2022 on 13/04/2022 by the mayor of

the capital city Warsaw which amended the ordinance on free travel by means of local public transport organized by the capital city of Warsaw for Ukrainian citizens.

### **Results reached**

- The approach, adopted in cities across Poland, is rooted in crisis-responsive municipal governance, understanding the value and great importance of transit for migrants in vulnerable and transient situations.
- Migrants fleeing war experience complete disruption to their lives, routines, and finances. The provision of free public transportation for war migrants can provide at least one monetary relief, also easing the ability of war migrants to move around the city for various tasks during what is a very unpredictable situation and change of life circumstances.
- All migrants who fulfilled the conditions were eligible for this initiative.

### **Risk and threats for maintenance**

Overcrowding may arise on the board of the public transport vehicles, leading to potential tension among those ineligible for free public transport. Feelings of jealousy could emerge, exacerbating perceptions of injustice and potentially fueling xenophobia. Cities might view it as a challenge to provide such an initiative on a long-term basis.

### **Adaptation possibilities for other settlements**

The practice is highly adaptable for other settlements as long as they have a public transportation system. This was a common best practice offered across Visegrad countries.

### **Sources & References**

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<https://samorzad.pap.pl/kategoria/jak-robia-inni/w-warszawie-bezplatna-komunikacja-dla-ukraincow-tylko-do-1-czerwca>

<https://um.warszawa.pl/-/bezplatne-przejazdy-wtp-dla-obywateli-ukrainy>



1.5. Food and hygiene distribution point Warsaw, Ursynów district



**Fig. 1.5.1. Warsaw, Poland, and the V4 countries**

Ursynów is the southernmost district of Warsaw. The third largest district with a population of over 150,000 people. Often referred to as Green Ursynów due to its lower population density and broad open spaces and green areas. The case study describes how local food and hygiene distribution point was set up for Ukrainian refugees.

From February 24th to May 31st, 2022, 800 thousand refugees passed through Warsaw. Over 14 thousand volunteers were involved in helping the refugees, with 74 percent of the community participating in this or another way of providing support.

Social Association of 'ARIADNA' Activists Roma Łojewska under the auspices of the City of Warsaw established a food and hygiene distribution point in Ursynów in the first days after the big wave of refugees reached the city to provide food and hygiene supplies to Ukrainian refugees, especially women, and children.



Ursynów housing cooperatives granted permission to establish a food distribution point in its utility space which was located above the ground floor in a tin kiosk and consisted of three rooms. A request for shelves was posted on Facebook to fill the space, and by the end of the day, contact was made by a constructor who makes structures for hypermarkets. Heavy-duty shelves from a hypermarket in Kielce were brought to Ursynów. They were installed, and then, people gathered through the internet and helped further organize the place.

**Fig. 1.5.2. Queuing for the aid in Warsaw. Photo credit: Goretta Szymańska**



**Fig. 1.5.3. The storage room in Ursynów. Photo credit: Goretta Szymańska**

In the beginning, the products were collected in the Cultural Center ‘Alternatywy’ and then brought to Dereniowa Street. The first room served as a hygiene department, the second housed items for children, and in the largest space food supplies were stored. As a charity, the association used its contacts with

hypermarket chains such as Leclerc or Auchan, where it collects goods that have a short shelf life. The stores organized food and personal hygiene item collections, products were also directly brought to the point by individual persons. There were donations from various countries, such as Turkey or France, organized by some institutions. People in companies organized collections, brought different items, and responded to requests for what was needed. The goods were inventoried and cataloged. Information was shared through the Ursynów District website, and also through word of mouth. People from other districts would come—even though the idea was to help primarily those

living in Ursynów. Refugees were recorded from their passports to maintain the appearance of control and for statistical purposes. Serving one family took 4 minutes the package included rice, groats, diapers, sanitary pads, tea, face creams, bath sponges, and over-the-counter calming medications.



**Fig. 1.5.4. Community engagement in Ursynów district. Photo credit: Goretta Szymańska**

### Methods used to involve the community

The initiative relied on various sources of funding, including donations from companies and private individuals, as well as private donations and voluntary contributions. It's important to note that volunteers and organizers do not receive financial compensation. Information about volunteering was easily accessible through the district's website and social media platforms. Promotion of the initiative



was carried out by volunteers, as well as their friends and neighbors. The action saw active engagement from residents of Ursynów, alongside NGOs and companies.

### Results achieved

- While the idea is not innovative per se, the point in Ursynów was the largest and best-organized food distribution point in Warsaw, one operating continuously. This was largely due to the specific nature of the Ursynów district and its residents being well-educated, aware, and relatively well-off, ready to get engaged in proactive initiatives.
- The action involved individuals with charisma, capable of mobilizing others to help. As Goretta Szymańska, one of the organisers states: “The project was extraordinary because it was organized within 1-2 days, at our own expense, low-cost, without appanages, pro publico bono, with enthusiasm and vigor”.
- Around 10 volunteers, comprising individuals, companies, and NGOs, were actively involved in managing the operation.
- During the peak of the crisis, the facility operated five times a week, from 11 am to 3 pm, distributing products to 400-600 people daily.
- As a result, it became the largest and most efficiently operated food supply point in Warsaw.

### Challenges for maintenance

Language barriers were surmounted through the participation of Ukrainians and the expertise of selected volunteers in the Cyrillic alphabet. Despite the initiative running for 6 hours daily, organizers faced challenges juggling their regular jobs, while some volunteers lacked proficiency in their assigned tasks not all volunteers had an appropriate approach to the tasks being performed. Although rare, there were occasional attempts to exploit the situation for personal gain trying to obtain a larger quantity of goods through deception. No support was received from the national government. In areas with limited access to food and water, delivering essential supplies can be a challenge. Planning deliveries and storing food items is crucial (climatic conditions). Also, the acceptance of the local community towards refugees may vary.

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[https://ursynow.um.warszawa.pl/-/pomoc-i-zbiorki-darow-dla-uchodzcow-z-ukrainy?fbclid=IwAR3lw\\_QyN0qPPW3bpJGeZwZNbBU4xATOmYJGwDeW4K4aSVEakUS8grtKCF0;](https://ursynow.um.warszawa.pl/-/pomoc-i-zbiorki-darow-dla-uchodzcow-z-ukrainy?fbclid=IwAR3lw_QyN0qPPW3bpJGeZwZNbBU4xATOmYJGwDeW4K4aSVEakUS8grtKCF0;)

interview with one of the organizers, Goretta Szymańska (22.01.2024)

## 1.6. Supporting work of the Dunakanyar Family and Child Welfare Service during the Ukrainian war



**Fig. 1.7.1. Szentendre, Hungary, and the V4 countries**

Szentendre is a riverside town next to the capital city Budapest. The town is known for its museums, galleries, and artists and historic architecture.

The case study describes how social services and child care was improved for the Ukrainian refugees.

The invasion of Ukraine by Russia in 2022 shocked Europe. Across numerous Hungarian towns and cities, regardless of their political affiliations, spontaneous grassroots movements emerged to support Ukrainians and aid refugees. The residents of Szentendre and its surrounding areas joined this initiative, along with the city itself, its social institutions, and local civil associations. The Dunakanyar Family and Child Welfare Service is an organization dedicated to providing support and assistance to families and children in the Dunakanyar region servicing 10 settlements with the centre

of Szentendre. After the breakout of the war the Service was closely monitoring and continuously gathering information on the current refugee situation. March 2022, all employees of the institution have been working to ensure they are adequately prepared to handle the additional tasks associated with this situation. Contact persons were appointed from various professional units within the institution to keep in touch with all local civil, religious, municipal, and state-funded institutions and to provide assistance to families accommodated in the region.



**Fig. 1.7.2. Signs of help. Source: Facebook**

The institution plays a crucial role in collecting donations and distributing them after prior consultation, ensuring assistance is provided to those in need from the available inventory. Additionally, it facilitates access to assistance in administrative matters and specialized services such as psychologists, lawyers, mediators, family consultations, and educational specialists. The institution maps the situation of children at risk and takes immediate action in the case of unaccompanied children, prioritizing their safety and well-being. Maintaining ongoing communication with reporting

system members, including kindergartens, schools, police, midwives, doctors, civil organizations, and churches, allows for a coordinated approach to addressing the needs of refugees. Colleagues stationed



in educational institutions play a vital role in assisting children starting school or kindergarten, supporting their integration into the educational system and wider community.

The Service kept close contact with a very active local Facebook group “Szentendreiek egymásért” in translation People from Szentendre for each other, which accompanied with several local initiatives like the “Vasárnapi Merőkanál” “Sunday Spoonful” which is a food-supplying association, TeddyBeer, other sport organisations who started to donate and collect donations. "Buy one more for someone in need!" etc.



*Fig.1.7.3. Gift packages for war-affected families. Source: Facebook*

### Methods used to involve the community

The city administration expressed its recognition and gratitude to the organizations, religious and civil groups, as well as individuals in Szentendre who have taken proactive steps to assist refugees fleeing from the neighbouring war-torn country. Szentendre illuminated the Town Hall with blue and yellow lights, expressing solidarity with civilians affected by the war conflict, which highlighted the importance of help. The use of social media helped to inform locals and to invite them to cooperate.

The financing was pluralistic. Local funding emerged through the provision of

accommodation for 30 families, but the provision of services for free also incurred expenses for the local municipalities. Additionally, numerous donations and financial assistance were made possible through contributions from the civil sector and the public. Moreover, there were non-civil entities, but market players, who provided assistance through donations to those in need and refugees.

### Risk and threats for maintenance

At such initiatives, it's best to maintain enthusiasm and continuous presence to avoid burnout. Unfortunately, participants often tire out, leading to a decrease in assistance. When the war drags on and the refugee influx subsides, activities may become less intense, and the tasks minimal. Hence, it's essential to periodically reassess these solutions and ensure their long-term sustainability.

### Results reached

- The local association for Family and Child Welfare Service operated by the local governments of 10 communities accompanied with local voluntaries and used Facebook as a platform to help the operation of the Service.
- Donation drives have been organized by the institution and Szentendre became the centre to handle donation-related tasks. Successful coordination of donation efforts. The community, led by organizations like Szentendre people for each other, TeddyBeer and Sunday Spoonful, launched initiatives to collect donations and support those in need, resulting in a significant amount of donations gathered and distributed. Efforts included organizing donation collection points, encouraging people to buy extra items for those in need, and expanding donation drop-off locations. The establishment of additional drop-off locations provided donors with more opportunities to contribute. This increased accessibility made it easier for individuals to donate, leading to a greater quantity of donations collected.

- Streamlined donation process was created online in Facebook groups. By emphasizing the importance of donating specific types of items and reducing the variety of donations, the donation process was streamlined and made more efficient. This approach helped volunteers spend less time sorting and organizing donations, allowing them to focus on delivering aid to those in need more effectively.
- About problems regarding refugees individuals could contact the employees of the Dunakanyar Family and Child Welfare Institution with their questions, so people felt they are not oppressed and overwhelmed by the refugees.
- The institution provides access to assistance for individuals and families fleeing war just like for Hungarian citizens.

### **Adaptation possibilities for other settlements**

It is important to have an organization, centre that can be trusted and accepted by local residents beyond political affiliations, and that can collaborate and receive support from the locals to conduct such programmes and tasks. Limited funding and staffing may restrict the capacity to meet the needs of all individuals requiring assistance. Operating hours and service availability may be limited, leading to potential challenges for individuals seeking assistance outside of regular operating times. During periods of high demand, such as crises or emergencies, the center may experience capacity constraints, leading to delays or limitations in service provision. Lack of awareness about the services provided by the center may prevent individuals from seeking assistance when needed.

### **More info on the best practice**

URL: [www.dunakanyari.hu](http://www.dunakanyari.hu),

<https://www.facebook.com/groups/338333982854760/user/100064366102600/>

<https://www.facebook.com/groups/338333982854760/user/100057190971118>

Contact person: Dunakanyari Család- és Gyermekjóléti Intézmény

Phone number/E-mail/LinkedIn: info@dunakanyari.hu,

06-26-312-605, 06-20-278-3734



## 1.7. Energy independence at municipal level – the Újszilvás energy sovereignty model



**Fig. 1.8.1. Újszilvás, Hungary, and the V4 countries**

As a result of the war conflict taking place next door, former international energy supply chains have been disrupted, and previously balanced and predictable energy costs have multiplied, not only in Hungary, but throughout Europe. Different countries and municipalities tried to compensate the groups of residential consumers most at risk from increased utility costs in different ways and to different extents. Municipalities and cities did not receive immediate, direct compensation, so most municipalities reduced their services to mitigate their losses. (E.g. closure of institutions, museums, libraries, sports facilities for the winter months.)

This dramatic change has increased the value of energy independence at municipal level, which, as a result of the implementation of a forward-looking, decades-long strategy, allows a settlement of a few thousand inhabitants to be independent from changes in the price of energy carriers (and to some extent their physical availability).

### Results reached

- The country's first solar power plant: The solar power plant consisting of 1632 panels on 68 rotating systems (solar panels) was the largest ever built in Hungary. It is powered by solar tracking technology with a peak power of 400 kWp (kilowatt peak) Its annual electricity production exceeds 630,000 kWh. Its output is 30% higher than non-solar tracking power plants of similar size. Its total cost is almost HUF 620 million (EUR 1.63 million), of which the grant provided by the Hungarian state and the European Union amounts to approximately HUF 432 million. (EUR 1,14) The investment will reduce greenhouse gas emissions by 450 tonnes per year.
- Direct solar panels on public institutions: 60% of the solar panels installed directly on municipal institutions cover the electricity consumption of the institutions.
- Geothermal energy utilization: Today, 90 percent of the heating and hot water supply of public institutions is provided by the thermal well. The thermal well brings up thermal water with a temperature of 33 degrees Celsius from a depth of 440 meters. Its maximum yield is 375 l/min. The heating circuit runs along an insulated pipeline along the route of the mayor's office – village hall / cultural centre / library – kindergarten – primary school – sports hall – waterworks. With the help of a heat pump – by investing about 1/5 - 1/6 of electrical energy, by cooling the temperature of the extracted 25-29 °C water by 10-15 °C, water with a temperature suitable for heating (even radiator heating!) can be produced. At the end, it cools down to 16 degrees. After cooling, chemical neutralization and disinfection, it becomes drinking water. Only the amount of water that the municipal water network cannot absorb due to the lower drinking water demand than the heating water demand needs to be reinjected. (During the planning process, it was a priority to reinject as little water as possible, as its energy demand and possible operating difficulties reduce energy efficiency.)
- Energetically and economically nearly self-sustaining swimming pool: Own drilled well for water supply and thermal water heating of the swimming pool. Initially, three solar panels, and today with a total capacity of 4 X 50 kW, provide energy for the thermal well, heat pump, heat exchangers and electrical auxiliary equipment. With which the swimming pool could operate even in island mode, regardless of the network.
- The swimming pool with an area of 3000 m<sup>2</sup> is not only self-sufficient in terms of energy, but also economically due to the low operating costs, since it is able to cover the personnel costs of operation with the help of the revenue generated from ticket prices. The total cost of the

development was HUF 1,000,000,000 + VAT, which corresponds to HUF 3-4 billion at present value.

- **Ecocentric education:** In Újszilvás, both the kindergarten and the school are eco-certified. Children start to get to know the application of close-to-nature solutions in practice already at an early age, and in kindergarten they learn what solar panels are and what geothermal energy is, and then they specialize this further, into even more detailed knowledge in primary school, where, for example, they have their own small garden, which they take care of.
- **Self-produced food and juice:** They also supply the 450-portion kitchen with self-produced greenhouse food, locally produced agricultural raw materials and their own workers.
- **100% juice processing plant,** which is supplied with raw materials from its own 6-7 hectares of orchards with intensive irrigation technology.
- They grow sweet peppers, potatoes and onions as traditional raw materials for the kitchen, thus providing healthy raw materials for healthy meals for the population, children and the elderly, as there are two nursing homes in the settlement.
- **Solar-powered, intelligent street lighting:** From 2023, one of the streets will receive intelligent LED street lighting, where with independent sensors the poles are always able to measure and react to specific lighting conditions.

### **Adaptation possibilities for other settlements**

The Újszilvás model can be adapted to other settlements with a similar population with a forward-looking, decades-long conscious strategy formulation and its implementation.

Limitations to the use of best practice in different locations:

While the utilization of photovoltaic energy is possible everywhere in the Visegrad countries due to the number of hours of sunshine, geothermal energy can be utilized regionally, in areas with suitable and profitably exploitable conditions (well depth and water temperature). Újszilvás belongs to the settlements with moderately profitable conditions from this point of view.

### **More info on the best practice**

[www.ujszilvas.hu](http://www.ujszilvas.hu)

<https://www.szoljon.hu/helyi-kozelet/2022/09/jelesre-vizsgaznak-ujszilvas-kornyezettudatos-megoldasai>

<https://www.youtube.com/watch?app=desktop&v=9yrvHrK552I>

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### **Contacts**

Name: dr. Csaba Petrányi, Mayor

Address: H-2768 Újszilvás, Szent István u. 6.

Phone: +36306453032

Email: [ujszilvas@ujszilvas.hu](mailto:ujszilvas@ujszilvas.hu)



## 2. Migration and resilience



The local effects of more frequent globally occurring climate stress, wars, and economic crises, becoming more and more obvious. Over the past decade, a series of unprecedented migratory flows have been observed, requiring a multi-scale response at integrative, national, and local levels. This, in turn, requires social consensus, inclusiveness, acceptance, and collective action. By embracing diversity in all its forms and inclusion, we can harness the collective power of communities to achieve common goals. Inclusive resilience aims to build communities and societies that value and accept all marginalized groups, including older people, people with disabilities, women, refugees, and migrants. But this requires building and performing mental and emotional resilience to welcome and help those from disadvantaged backgrounds.



The mental capacity to deal with or adapt to uncertainty, difficulties, and catastrophic impacts is mental resilience. Through mental resilience in specific situations, individuals and communities develop coping strategies and skills that allow them to remain calm and focused, helping not only themselves but others as well.

Emotional resilience for migrants and refugees in a community refers to how we deal with feelings and negative emotions such as fear, vulnerability, or sadness. Even in a crisis situation, realistic optimism and proactivity, emotional awareness, or emotional intelligence are needed to make proper use of internal and external resources. This can be improved and is not the same for everyone and not all communities.

In the case of the good practices in this chapter, the reader can also get acquainted with the emotional and mental aspects of resilience, as well as social resilience. Using the power of culture and community, they demonstrate that social stress factors caused by migration crises can be managed, albeit temporarily, with sufficient inclusivity.





## 2.1. Multicultural Lessons in Warsaw



**Fig. 2.1.1. Warsaw, Poland, and the V4 countries**

Warsaw is the capital of Poland with a population of more than 1,8 million people is the 7th most-populous city in the European Union. The metropolis stands on the River Vistula in east-central Poland

The case study introduces the Polish model of integration through education for migrants with diverse origin.

There is no wise migration policy without a wise integration policy. This is one of the challenges that Poland, and especially its cities need to cope with, in particular when facing an almost overnight shift from an ethnically considerably homogeneous society to a binational one, as well as other processes of social diversification. The Multicultural Center (WMC) is a project co-financed by the City of Warsaw, and the concept was developed during the work on the Culture Development Program until 2020. The Center was planned as a headquarters for Warsaw organizations that bring together foreigners and work towards the integration of migrants and multiculturalism.

The center is operated by an organization or a consortium of organizations whose offer has been recognized as the best in a competition announced by the city authorities in a 2-year cycle. Since 2023, the hosts of the Multicultural Center are the Pro Humanum Association, the Open House Initiative Foundation, the Armenian Foundation, the Positive Attitude Development and Integration Center Foundation, and the Polish-Ukrainian Chamber of Commerce. The center serves as a hub for local activities (MAL) and offers a wide range of services to build an open society aware of cultural and social diversity and capable of functioning in this diversity.



**Fig.2.1.2. Poster showing diversity for multicultural lessons. Photo credit: © 2023 Centrum Wielokulturowe – OnePress motiv FameThemes**

The activities of the Multicultural Center are directed towards various target groups, which can be divided into two main categories: foreign individuals living in Warsaw and the local Warsaw community as the host society. From cultural events to assistance for migrants in daily matters, Polish language courses, and multicultural lessons, to name just a few.

The initiative's age target is the group of children and young people, which gives it a long-term perspective by developing skills to foster social integration in the future through strengthening community ties. Lessons are offered to schools at all levels (primary and secondary). Lesson recipients include students from Warsaw schools, also those with voluntary or forced migration experience. Various forms such as discussions, workshops, and lectures are used in educational work, always tailored to the age of the audience.



The educational team has diverse experiences and backgrounds but has been trained in workshop methods, also, voice training was provided for them. The number and topics of lessons also depend on the availability of educators. Introducing new lessons requires consultation with the team leader, presenting the lesson plan, and mutual lesson visits for learning and identifying shortcomings, which are often more visible from an external perspective. Discrimination or hate speech is not tolerated, both from facilitators and participants.

*Fig. 2.1.3. Children drawing during the lessons. Photo credit: Natalia Gebert*

### Methods used to involve the community

The primary recipients of the Center's educational activities are Warsaw schools. Current lesson offerings are regularly sent to schools, and upon choosing a lesson of interest, the school makes a reservation. As a rule, lessons take place at the Center, although there are exceptions to this rule. The lessons generate considerable interest both during the school year and in summer (during the "Summer in the City" campaign). The summer campaign allows for longer formats, such as outdoor games. The institution (including its educational activities) is funded by the city of Warsaw's budget, although this does not include all implementation. For instance, some lessons conducted in 2023 were funded by a project under the Active Citizens program (Norwegian Grant funds).

### Results reached

- The aim of the initiative is social inclusion through education. It supports the integration of migrants, as well as disseminates knowledge on aspects of ethnic and cultural diversity, building tolerance and acceptance of 'difference' in the society. In the period of Jan-Oct 2023 184 lessons were conducted with the participation of 4,377 students of Belarusian, Chechnyan, Russian, Vietnamese, Chinese, Nigerian and other nationalities from Warsaw schools.
- It is difficult to consider cultural education in the form of lessons as innovative. It is a widely used and well-established tool. Similar activities take place in many different institutions throughout Poland, but the program's success lies in persuading individuals to stop and think about multicultural issues, and to attempt to form their own opinions.
- According to the coordinator of the project Natalia Gebert the change occurring is challenging to measure, but teachers' opinions and suggestions are carefully listened to and attempts are made to implement proposed improvements. Most opinions are positively received. For instance, in an external project during which lessons were conducted at the Center, only 6% of teachers gave a negative evaluation, and the feedback provided was analyzed and mostly implemented by the team.

### Challenges for maintenance

The project's educators are professionals in integration and work with migrants, limiting their availability. The most significant limitation from an educational perspective is that building and changing attitudes are processes that should be monitored for longer than a single lesson. However,



classes, burdened by the curriculum, usually cannot afford to cut more school hours. The project aims to raise awareness among teachers that further work on this process is needed, in spite of their time constraints.

Financial constraints also limit the number of hours that can be conducted in the frame of the initiative. There are always more interested participants than available time slots. This is addressed by seeking external grants, but it is not a stable source of funding.

As stated by Natalia Gebert, "No obstacles are seen to implementing multicultural education throughout the project. However, it is possible that in the next competition phase, another organization or consortium with a different idea for such education might win. This is not considered a risk or threat in itself. The general risk associated with multicultural education is that the process may focus too much on easily observable manifestations of culture, without delving into the beliefs, values, and convictions behind them."

### **Adaptation possibilities for other settlements**

Conducting multicultural education is entirely possible in other cities and communities. Such activities can take place in external institutions or school spaces. There are many materials available for educators who want to enhance their workshop skills or develop lesson plans. The concept of multicultural education is broad, and when undertaking such activities, it is beneficial to consider what the participants should take away from the lessons. This helps to narrow down the topics of individual lessons.

There are no potential limitations to implementing such activities in other locations in Poland. Naturally, the larger the institution offering such lessons, the more likely schools are to trust it and allow students to participate. However, even an individual, if presenting a compelling offer, should have the opportunity to conduct lessons.

There are no cultural limitations in Poland. Cultural limitations may exist in other countries, but this is difficult to assess. An essential aspect of equality education, including multicultural education, is respect for all participants. The only limitation is the concern for the participants themselves – for example, one should not tell someone with refugee experience what it is like to be a refugee, as there is a risk of re-traumatizing the person, not to mention that migrants usually know much better than others what it is like to be a refugee.

Geographical location and climate do not affect the possibility of conducting lessons. However, considering that migration, integration, and multiculturalism are politically sensitive topics, it may turn out that some subjects are considered too risky by schools (for example, the issue of the humanitarian crisis on the Polish-Belarusian border).

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[https://www.facebook.com/wielokulturowe/?locale=pl\\_PL](https://www.facebook.com/wielokulturowe/?locale=pl_PL)

interview with educator and coordinator of the ML program Natalia Gebert (28.11.2023) and later email exchange

## 2.2. Integration of migrants through cultural activities (Festival Fjužn)



**Fig. 2.2.1. Slovakia, of the V4 countries**

**Places of the festival:** Bratislava, Piešťany, Trnava, Banská Štiavnica, Košice, Komárno, Trenčín, Nitra, Liptovský Mikuláš, Slovakia

The case study introduces a unique festival for integration through cultural activities, music, food and discussions.

The activities of the project support the idea of Slovakia once becoming an open and safe country for everyone and every citizen will be respected regardless of his country of birth. The project builds on the previous activities and field of expertise of the applicant – Nadácia Milana Šimečku – that aims to contribute to a multi-cultural society and raise the tolerance and mutual understanding between different groups of people. One of the tools to it is to build trust in Slovaks when

it comes to migrants, discuss the topic of their integration and help this integration via cultural activities. One of the activities included hosting a foreign artist in Slovakia who is persecuted in his home country. For them, Slovakia is an island of freedom where they can continue with their art. Other activities include creating a new format of multicultural festival „Fusion” in Slovakia that would be presented in 10 Slovak towns highlighting migrants living in Slovakia in the years 2021 and 2022. In the project also 5 cultural events were implemented that focused on education and awareness-raising.



**Fig. 2.2.2. Poster of the 2022 Fjužn Festival. Source: Fjužn Festival Webpage**

Fusion – „fjužn” is a unique festival type that is focused at the topic migration. It examines and shows migration to attendants from different points of view (How do we view migrants? Are Slovaks leaving Slovakia also migrants and how are they viewed in their new home country?). At the festival in Piešťany (one of the stops of the touring Festival), a spa town with a regularly high concentration of foreigners, for the festival’s discussion part, foreigners living in Slovakia were invited who could be viewed as „migrants”, while Slovakia is now a home of them. One of the guests, Alain Janovjak from Switzerland, a keen cyclist, love the places Piešťany displays and the fact there is always somewhere to go, there are a lot of cultural activities. The moderator then asked Jonas Amoah from Ghana and his Slovak wife



Adriana, why they left England and settled down in Slovakia instead (they started a farming enterprise in Slovakia). The third guest was Rafał Moskał from Poland, who shared the experiences from his life in Piešťany, Slovakia. The festival was combined by discussion panels and music performances by Slovaks and foreigners alike. The festival is unique because:

- it features the topic of migration (not very attractive for the public)
- it is regularly organized for years
- it has a concept
- it is interactive
- it is inclusive – the guests are partly migrants who share their views

The reason this project is listed as a best practice is that the migration needs to be viewed also positively and the „Fjužn” Festival can be a good means to support this view in an attractive form that can be multiplied. The festival was realised based on the Grants of EEC and Norway (181,130 e€), cofinancing by the Slovak Republic (27,320 €)

### **Methods used to involve the community**

The community is involved by attending the festival and has the chance of different level of interaction with the moderator and the invited guests. Migrants and non-migrants reached.

### **Results reached**

- The best practice showcases innovative elements, including transforming a non-conventional topic into an engaging festival format. Its regular implementation with a standardized format ensures consistency and familiarity. Moreover, the festival's tested format, featuring discussions, music, and "fjužn walks" offering insights into how foreigners perceive the city, enhances its appeal and effectiveness.
- 10 Fusion festivals implemented
- 5 awareness-raising cultural activities implemented
- 3 persecuted foreign artists hosted in Bratislava for a year
- Implemented in 2023 also (22-29 September 2023)

### **Adaptation possibilities for other settlements**

The festivals' viability may hinge on external resources, while an intolerant political atmosphere could impede its establishment due to the politically sensitive nature of the topic.

It is highly adaptable as the examples of 10 Slovak cities show (stops of the touring festival). However, the program is not the same but has different guests, different scopes – local issues can be well implemented in the framework of the festival.

The limitation can be the lack of founding and growing xenophobia, while repressive political regimes can halt the implementation of such projects.

### **More info on the best practice**

Nadácia Milana Šimečku, Svoradova 8, Bratislava 81103

URL: <https://www.youtube.com/watch?v=qPqTbClcrPI> (whole project)

[www.fjuzn.sk](http://www.fjuzn.sk) (Festival Fjužn)

<https://fjuzn.sk/zacina-sa-festival-fjuzn-najvacsie-multizanrove-podujatie-o-cudzincoch/>

<https://nadaciamilanasimecku.sk> (the organization)

Contact person: Nina Galanská +421 2 544 315 93

[nms@nadaciamsk.sk](mailto:nms@nadaciamsk.sk), [info@fjuzn.sk](mailto:info@fjuzn.sk)

## 2.3. Prague for all - Integration of refugees in the capital city of Prague



**Fig. 2.3.1. Prague, the Czech Republic, and the V4 countries**

Prague is the capital and largest city of the Czech Republic. Situated on the Vltava river, Prague is home to about 1.4 million people. Prague is a political, cultural, and economic hub of Central Europe, with a rich history.

The case study describes 4 different approaches to integration, incorporating elements such as education, employment, psychology, culture, sports to address the multifaceted needs of migrants and refugees

Each project chosen to compile this best practice aims to support migrants and refugees and to facilitate the integration of migrants and refugees into Czech society. By providing essential services, involve collaboration with various organizations, government bodies, and non-profit entities to maximize their impact and reach. The projects receive financial

support from multiple sources, including EU funds, national government ministries, and local municipalities, enabling them to offer free or subsidized services to migrants and refugees.

Metropolis of All is a comprehensive website offering crucial information and links to various organizations to migrants, not limited to those from Ukraine. Primarily focused on Prague's growing cultural diversity, the site is a valuable resource for professionals involved in foreigner integration. It highlights City of Prague-funded projects and exemplary practices, serving as a guide to essential information and contacts for organizations, offices, and departments. Educational opportunities, including Czech language courses, cultural events, and avenues for public participation, are also featured.

A key partner, Integration Centre Prague, plays a pivotal role, financing its activities through EU funds, the Ministry of the Interior of the Czech Republic, and Prague City Hall, enabling them to provide free services. The center offers counselling, Czech language courses, interpreting, accompaniment, integration courses, and workshops.

Collaborating with schools and non-profit organizations, the Municipality of Prague 13 implements the "Common Address - Prague 13" project, funded by the Ministry of the Interior, with a focus on activities for citizens of third countries.

The Youth Included project adopts a progressive approach to migrant and refugee integration, encompassing education, employment, psychology, culture, sports, and children's activities. Emphasizing youth education, the project empowers young individuals to develop and organize projects, engage in volunteering, and foster cross-cultural understanding.

### **Innovative and excellent elements of the best practice**

Projects adopt progressive approaches to integration, incorporating elements such as education, employment, psychology, culture, sports, and children's activities to address the multifaceted needs of migrants and refugees.

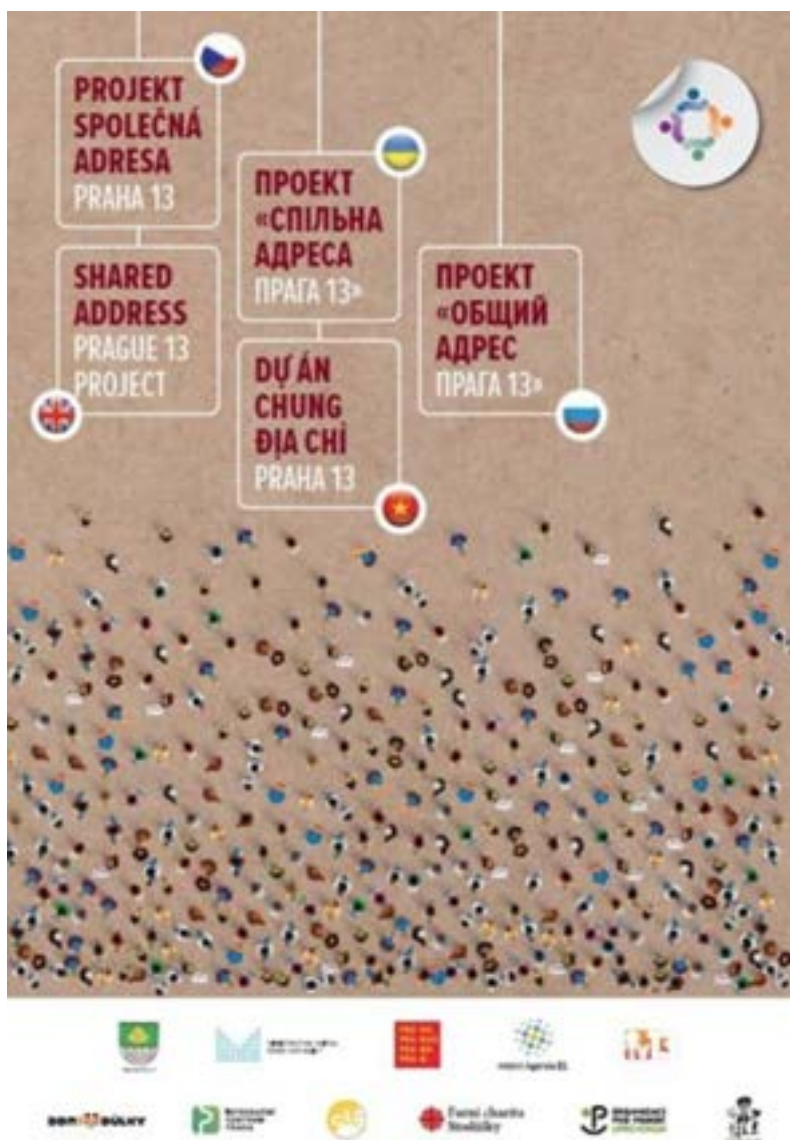
The innovative and excellent elements of the best practice at Metropolis of All and the associated Integration Centre Prague include a proactive response to the Ukrainian war. Before the conflict, the need for such centers and websites was non-existent, highlighting the project's adaptability to emerging challenges. The establishment of a comprehensive online platform, Metropolis of All, is a key feature. Serving as a centralized hub, it simplifies access to crucial information for migrants and integration professionals, demonstrating efficiency and user-friendliness.

A notable aspect is the public-private partnership, where the Integration Centre Prague collaborates with various funding sources, including EU funds, the Ministry of the Interior of the Czech Republic,

and Prague City Hall. This financial backing enables the provision of free services, showcasing a sustainable model for supporting migrant integration.

The project's ability to address the influx of refugees by implementing the "Common Address - Prague 13" project reflects its adaptability to changing demographics. The emphasis on activities for citizens of third countries within this framework demonstrates a tailored response to specific integration needs.

The Youth Included project adopts a holistic approach to migrant and refugee integration, encompassing education, employment, psychology, culture, sports, and activities for children. Empowering young individuals to organize projects, engage in volunteering, and foster cross-cultural understanding showcases a forward-thinking strategy to integration challenges.



**Fig. 2.3.2. Poster for shared address project. Source: project webpage**

### Methods used to involve the community

The Metropolis of All initiative and Integration Centre Prague have successfully integrated the community into their efforts through various strategies. Volunteers, essential from the onset of the conflict, continue to play a pivotal role, showcasing the sustained commitment of community members. Beyond mere participation, community fundraising actively involves residents, fostering a collective financial contribution to initiatives supporting refugees. Collaboration with local schools and non-profit organizations cements community involvement. The Youth Included program empowers community youth, enabling them to initiate and organize projects, ensuring a community-driven approach to integration.

Public awareness campaigns further engage the community by

shedding light on the challenges faced by migrants and refugees. Encouraging participation in support activities like language courses and cultural events, these campaigns reinforce a sense of shared responsibility within the community.

In essence, the multifaceted involvement of the community, spanning volunteers, fundraising, collaboration with local entities, community-driven projects, and public awareness campaigns, creates a holistic and sustainable approach to migrant and refugee integration.



## Results reached

- The Metropolis of All initiative and Integration Centre Prague have achieved significant results in their commitment to migrant and refugee integration. The initiatives have contributed to increased integration rates of migrants and refugees into the local community through services such as counselling, language courses, and community-driven projects, providing individuals with the tools to adapt to their new environment.
- Public awareness campaigns have played a crucial role in enhancing understanding within the community about the challenges faced by migrants and refugees, fostering empathy and encouraging active participation in support activities.
- The Youth Included project's progressive approach has resulted in the development of young individuals who actively contribute to projects, volunteer work, and cross-cultural understanding, promoting a more inclusive and diverse community.

## Adaptation possibilities for other settlements

The establishment of centralized online platforms, akin to Metropolis of All, can serve as information hubs for migrants, refugees, and integration professionals, enhancing accessibility and user-friendliness. Forming public-private partnerships is key. Collaborate with local government, non-profit organizations, and educational institutions to garner financial support, resources, and a more comprehensive approach to integration. Promoting volunteer engagement within the community is essential. Establish volunteer programs that provide opportunities for residents to contribute time, skills, and support to migrants and refugees.

Empowering youth through programs similar to the Youth Included project is crucial. Encourage young individuals to take an active role in organizing projects, volunteering, and fostering cross-cultural understanding. Implementing public awareness campaigns is essential. Raise awareness about the challenges faced by migrants and refugees, encouraging active participation and understanding within the community.

## More info on the best practice

<https://youthincluded.com/events>

<https://metropolevsech.eu/en/>

<https://www.migrace.com/en/>

[integrace@praha.eu](mailto:integrace@praha.eu)

+420 236 00 2599

## Websites and Projects

Praha – Metropole všech (Prague the Metropolis of all)

Integration Centre Prague

Project Shared Address

Youth Included

## 2.4 Green Space for Social Resilience and Mental Health



**Fig. 2.4.1. Poland, and the V4 countries**

The provision and maintenance of diverse parks and green spaces is a critical responsibility of municipalities. As urban heat increasingly becomes an issue, such provision becomes an urgent matter of public health. Diverse cities in Poland exemplify a best practice of prioritizing increased urban green spaces to mitigate urban heat and increase quality of life. Rafał Trzaskowski, president of the capital city of Warsaw, noted that greening Warsaw is the first priority to make the capital an even more liveable place. So actions are taken to increase green coverage, create new parks and modernize existing ones and replace unnecessary concrete in urban space with vegetation.

Due to restrictions on movement during the COVID pandemic, there was a boost of awareness in recognizing the importance and role of access to green space for mental health and movement.



**Fig. 2.4.2. Playground users in Poland.**

The provision of ample park and green space has another benefit. In early 2022, due to military aggression of Russia against Ukraine, hundreds of thousands of Ukrainians migrated into Poland, many temporarily or permanently

settling in urban areas. Life as a war migrant can be unpredictable, stressful and frightening. The ability to find safe shelter, lodging, food and other basic necessities takes precedence. The role of urban green public space in the migratory experience can be significant, offering spaces for resilience during a transient, disruptive experience, social refuge and potential for the restorative benefits of nature for mental, physical and emotional health. Green public spaces play a significant role as mediators in the adaptation of forced migrants to the host city's community, offering a sense of security while maintaining ties to their country of origin.

Across Polish cities the phenomenon of migrants utilizing green spaces as vital areas for social connectivity can be observed. When visiting Łódź in August 2023, a noticeable increase in the presence of the Ukrainian language was observed, particularly in the vicinity of the White Factory, notably in the green public space known as Raymont's Park. What was intriguing was the diverse representation of age groups. Elderly individuals leisurely strolled around the lake or engaged in conversations with relatives in Ukraine via smartphones while seated on benches. Mothers accompanied their children, while groups of youngsters played on playgrounds, and young adults engaged in discussions. Although it was unlikely that everyone knew each other, there was a palpable sense that the park had transformed into a central gathering point—a familiar and intimate space where one could feel at ease

and find commonality with others. " - Kostyantyn Mezentsev, Head of the Department of Economic and Social Geography, University of Kyiv

Development and maintenance of parks of respective Polish cities is managed by respective 'green authority' municipal agencies in each city. The provision of diverse and ample public green space is itself a core feature of urban resilience in the central European context. The purpose of inclusion of this best practice is to highlight how such provision can serve as a positive force for mitigating negative effects of the war migrant experience.



*Fig. 2.4.3. Accessibility in polish parks and greens spaces.*

### Results reached

- A beneficial and functional urban green space can serve as a venue for community events and facilitate the establishment of social connections among those in need, particularly individuals grappling with mental health issues stemming from the effects of war.
- The recent development of urban green spaces in Poland has proven instrumental in addressing these needs and their future development and constant maintenance is pivotal in a livable city.
- There are many broad benefits of an urban governance policy that prioritizes a 'green city' and diverse public green spaces. With regard to war migrants in particular, innovative aspects of urban public green space include:
  - Providing an outlet for physical, emotional and mental health
  - Providing a space for social connectivity
  - Allowing for a cultivation of community - connection with local inhabitants as well as fellow war migrants



### **Risk and threats for maintenance**

In Summer 2022, media reports began to emerge of how young teen Ukrainian war migrants used parks and highlighted the social connectivity within peer groups that these public spaces can provide while also highlighting the rootless of the teen war migrant experience and the potential detrimental effects of certain demographics experiencing such space in a rootless and unmonitored way.

The excessive utilization and instances of vandalism, coupled with apprehensions surrounding minority populations and xenophobia, have the potential to precipitate conflicts within urban green spaces. Increased usage also escalates maintenance costs, which are the responsibility of local municipalities and incur associated expenses. Urban green spaces of Polish cities are under the management of municipal 'green authority' agencies who are responsible for ongoing maintenance of such spaces.

### **Adaptation possibilities for other settlements**

The provision of quality public green space is highly possible as well as critical throughout the Visegrad region. There are myriad and diverse contemporary challenges to the development, maintenance and provision of quality urban green spaces, yet throughout the Visegrad region, such spaces are possible in urban areas. Political and social will to commit funds to such spatial developments may serve as the primary limitation.

# 3. Pandemic and health resilience







Despite decades of warnings from researchers about the threat of a global pandemic, the emergence and global spread of the COVID-19 pandemic came as an unprepared and unexpected surprise to the world. Today, the number of COVID victims is in the millions, but with the help of science, a fast and effective solution has been found both in the long and the short term in the form of vaccination. However,

the pandemic demanded immediate response, not only globally but also locally. And the answer was often not given by official institutions, governments or local governments, but by spontaneously organized citizens. Just as the resilience of municipalities can be understood from a climate perspective, social resilience is also essential in such situations. Thanks to solidarity and the will to act together, various responses to the pandemic have been received at local level, which can be applied as good practice in the future, as it has been possible to gather a lot of experience.

The studies describing best practices in this chapter summarize the initiatives that helped overcome the negative effects of the pandemic such as social distancing, closed institutions and community spaces, fear or loss of loved ones, and limited access to jobs or income by exploiting settlement opportunities from the side of social cooperation. Based on Harvard University research, it is necessary to highlight or mitigate negative aspects, in which not only the state and local governments but also individuals and communities play a major role. In addition, it is important to strengthen the existing positive side, to make it visible, and to feel that we are one community, and that we support each other. Among other things, it becomes necessary:

- To help families meet their basic needs, such as food, health care
- To support those who lose their jobs morally and financially
- To provide social aspects of a balanced everyday life (offline or online).
- To maintain and encourage relationships with family and friends, and if someone lacks it, provide it through community power to protect our emotional well-being and manage the stress of the pandemic.



The chapter sheds light on key bases, so called fulcrums, for both society and individuals that can help to deal with a similar situation more easily and effectively. It does this in such a way that for each individual and for every community, those bases, and fulcrums are different in life, in different situations. But this is precisely why good practices are useful and applicable since the practice that is needed is available and adaptable for everyone.



### 3.1. Piroska kommandó - food and medicine delivery for elderly people during the COVID pandemic



**Fig. 3.1.1. Budapest, Hungary, and the V4 countries**

Budapest is the capital city of Hungary, with the population of 1,7 million it is the ninth-largest city in the European Union and the second largest city on the Danube river. Budapest is a global city with strengths in commerce, finance, media, art, fashion, research, technology, education, and entertainment.

This case study introduces the Piroska Kommandó, the Commando for the Little Red Riding Hood, which offered food delivery and help during the pandemic.

The name "Piroska Kommandó" draws its inspiration from the beloved children's story of Little Red Riding Hood. This initiative emerged during the initial phase of the COVID-19 pandemic in March 2020, a time marked by a significant decrease in consumption as the first wave swept through communities. With many delivery person forced to halt their operations and companies facing financial losses, the streets

were still populated by delivery workers, since they were allowed to move and stay on the streets without restrictions. It was during this challenging period that the idea arose: why not channel their efforts towards helping people in need? Charity activities were cancelled due to the pandemic, but a different kind of support emerged: spreading health equipment instead of the virus. Initially centred in Budapest, the initiative later expanded to specific districts. The local government of the 9th district reached out to those already registered as disadvantaged individuals, while the 6th district distributed "crisis packages."

With no central coordination nationwide, sick individuals or their contacts found themselves unable to manage seemingly simple tasks like going to the pharmacy or walking the dog. During the first wave, the government office provided daily data on those in quarantine, but in the second wave, no such information was communicated. In the absence of this crucial information, the Piroska Kommandó had to depend on contacts and data collection efforts initiated by local governments. They targeted individuals who found themselves in challenging situations due to quarantine, striving to provide assistance where it was most needed.

The "Piroska Kommandó" group initially faced challenges due to a lack of volunteers. To address this, multiple ad hoc and existing groups stepped in to contribute. Originating from the HajtásPajtás delivery service, the voluntary group Bike Maffia began collecting and delivering donations to those facing disadvantages. Another group, Vészfutár (Delivery in Need), also volunteered to assist those in need.

The initiative did not receive any financial support, it was totally grass root movement and self-financed by the participants.

#### **Possible side effects, risk and threats for maintenance**

Throughout their efforts, the team encountered several challenges that required careful navigation. One significant issue was the lack of central coordination. Communication faltered during the second wave, leaving them without essential information. Their focus was on reaching individuals facing difficult situations due to quarantine and providing assistance where it was most needed. However, another obstacle they faced was the need for accurate RSVPs from participants. It was crucial for planning purposes that only those genuinely intending to attend events indicated their presence on the online Facebook events, which were the platform for the coordination of the delivery program for the actual tasks. Clear communication within the group, effective coordination with residents, and

financial support were also essential components of their strategy, but it was very hard without a well-structured and official organisational background or any experience.

After the pandemic, the need for maintaining such activities may diminish as people return to their normal routines. Additionally, there may be a decrease in the level of dedication and engagement towards helping others, as the urgency of the crisis subsides.

While the core group of volunteers may remain, there could be a significant reduction in their numbers. For example, a once 500+ member strong volunteer force may dwindle as individuals transition back to full-time work or other commitments. In some cases, volunteers who were previously heavily involved in charitable activities may now be fully occupied with work in the delivery market or other industries that experienced growth during the pandemic. This shift in priorities and availability could impact the sustainability and effectiveness of community initiatives aimed at supporting those in need.



**Fig. 3.1.2. The Logo of the Piroska Kommandó. Source: Facebook**

### **Innovative and excellent elements of the best practice**

The most defining innovation is that the Piroska Kommandó spontaneously and voluntarily formed, without any funds, taking advantage of the difficult situation. Their goal was to make a positive impact and do something useful, even though they were not being paid. Another advantage is that they organized using social media, giving the platform a genuine community role. Additionally, they had print appearances, primarily displayed in local stores for the elderly to ensure accessibility to everyone.

### **Methods used to involve the community**

The Piroska Kommandó employed various methods to involve the community in their activities. They utilized existing local networks and relationships, collaborating with organizations and volunteers already active in the area. Social media platforms were leveraged for engagement, with regular updates and event promotions shared to encourage participation. To address challenges of trust and communication, the group conducted information campaigns, educating the community about their initiatives and clarifying objectives. Partnerships with local authorities were established to access resources and gain official support.

### **Results reached**

- The Piroska Kommandó fostered a strong sense of community and solidarity, uniting volunteers in the common goal of assisting those facing challenges during difficult times.
- Practically, the Kommandó provided valuable assistance to vulnerable individuals, ranging from grocery deliveries to walking dogs and running errands. This aid was crucial for those unable to perform these tasks themselves.
- Utilizing social media platforms effectively, they successfully organized volunteers and engaged with the community, reaching a wider audience and maximizing its impact.
- What sets this initiative apart is its adaptability and innovation; the Piroska Kommandó organized spontaneously, without funds, fighting the challenging situation to make a positive impact.





*Fig. 3.1.3. Delivering food. Source: Facebook*

#### **Adaptation possibilities for other settlements:**

Implementing this best practice in various locations faces several limitations. Firstly, not all local governments in settlements are receptive to such collaborations, which can impede efforts to establish effective partnerships. Additionally, successful initiatives typically require a minimum of approximately 10-50 volunteers and a dedicated coordinator to ensure smooth operation and coordination of activities. Moreover, building trust within the local community is essential for project success. Without trust, it becomes challenging to garner support and participation from residents. Furthermore, a lack of funding presents a significant obstacle, limiting resources available for initiatives and hindering their scalability and impact. Lastly, in some cases, delivery people may be viewed as adversaries rather than allies, complicating efforts to engage them in cooperative efforts or partnerships.

#### **More info on the best practice**

URL: <https://www.facebook.com/profile.php?id=100064912921364>

Contact person: Attila Gaal

Phone number/E-mail/LinkedIn: <https://www.facebook.com/Rettentheto/about>

### 3.2. Digitalisation of in kind social services in Budapest 13th district



**Fig. 3.2.1. Budapest, Hungary, and the V4 countries**

The 13<sup>th</sup> District of Budapest is one of the most central located workers district. Until the end of the 19<sup>th</sup> century, it was rural-like and rapid development of the 20<sup>th</sup> century turned it into centre of mechanical engineering. After the regime change, with the decline of industry, trade and services took over the leading role relatively quickly.

This case study introduces the digitalisation process of social services, which helped during the pandemic.

The local social care system is characterised by its flexible and rapid response to citizens' needs. The traditional tool of social work is personal contact, which during the epidemiological emergency came into conflict with safety, which has become an all-important value. The XIII. district municipality responded to the challenge by transforming the existing procedure, digitalizing it and moving it to the virtual space.

In-kind support was provided in the form of vouchers to people in need for school enrolment, neonatal care and the purchase of basic food, medicines and products.

As a new service, an electronic route has been introduced:

requesting citizen -> municipality -> customer with assessed application -> place of redemption (shop) -> municipality (settlement with an accepting partner)

The municipality's existing mobile application has been adapted for the epidemiological emergency. The digital platform was used to reach and help people living in the district as soon as possible and to stay in constant contact with them. In-kind support was provided in the form of digital vouchers for school enrolment and newborn care instead of paper vouchers.

The application submitted by the citizen is assessed and confirmed by the Department of Social Affairs and Public Education. If eligibility was confirmed, the voucher was sent to the contracted shops via the app and at the same time notify the customer who can visit offline or online the store for purchase. The redemption partner settles with the municipality electronically with the vouchers. This new service meant that, unlike the previous procedure, those entitled did not have to appear at the mayor's office to collect the voucher, but it became available to them at all redemption partners (shops, local market).



**Fig.3.2.2. The Label used for shops accepting the vouchers.**



### Innovative and excellent elements of the best practice

District XIII made a virtue out of necessity by moving social services in kind, which are not only benefits in kind in their name, but also provided by the local government in the framework of personal meetings and customer relationships, to the online space in such a way that it not only preserved but also increased the internal efficiency and effectiveness of the service. It was a previously stated strategic goal to make public services available on an online municipal platform according to the previously created Smart13 strategy. Municipal decrees revised on the basis of it made it possible to flexibly adapt the processes of social care to the current force majeure situation without amending the decree.

The mobile application available under the name "Budapest13 Smart City" already had several functions, which were expanded with a social partner card registration module after the outbreak of the epidemic, so the development did not require significant additional resources. After registration, users could apply for vouchers worth HUF 6,000. This voucher could be purchased from the merchants of Lehel Hall (local market). The Municipality also settled with traders through the mobile application.

### Results reached

- Those in need had easy access to the municipal voucher delivered directly to the store, they could simply use it; A total of 13,452 people were affected in 2020.
- The method was customer-friendly and at the same time safe, as those in need immediately received support by visiting the store of their choice or requesting delivery of the ordered product by phone;
- The voucher could only be used by the holder, misuse – selling the voucher or using its value for other purposes – was no longer possible
- The shops receiving vouchers could operate more predictably, vouchers delivered directly to them helped the store to prosper, and employees could keep their jobs safe. During the state of emergency, based on feedback, the turnover of cooperating stores did not decrease, moreover, there was an increase in the social store network. In 2020, contracts were concluded with 78 voucher acceptance partners.



**Fig. 3.2.3. Overview of a market hall in Budapest. Source: webpage**

### **Adaptation and limitation for other settlements**

The good practice can be adapted to other settlements at national / international level, where the local government provides social services in kind and enables the use of municipal services through an online platform, reducing and shortening the number of customer journeys. An essential element of human services is personal contact, which enables social work to recognize critical social life situations preventively and proactively, therefore personal customer contact cannot be completely eliminated from the care process.

### **More info on the best practice**

<https://www.budapest13.hu/2020/07/07/smart13-akcioterv-2020-2024/>

<https://www.budapest13.hu/partner-kartya/>

### **Contact:**

Name: Kornélia Holopné Schramek, Deputy Mayor

Phone: +36 30 950-6784



### 3.3 Transforming hotels into Alzheimer centres



**Fig. 3.3.1. Sychrov, Lázně Bohdaneč and Jihlava, the Czech Republic, and the V4 countries**

**Alzheimer Home Lázně Bohdaneč:** The former Technik Hotel in Lázně Bohdaneč, which has not been used since 2013 and was falling into disrepair, was rebuilt and renovated into an accommodation facility for people with Alzheimer’s disease. The abandoned building will become a centre for a hundred people. This will also add another 30-50 work opportunities in the small town. The operator of the home is the company Penta Hospitals CZ, which operates other hospitals and medical facilities across the country.

**Alzheimer Home Jihlava:** A luxury hotel in Jihlava has become an Alzheimer's centre for people affected by the disease. It will also be operated by Penta Hospitals CZ. Unlike the previous home for the elderly, no major modifications will be needed in Jihlava, as the hotel has been in operation until now. Only the fence and garden will be added. The city will thus gain up to 100 new jobs.

**Chateau Hotel Sychrov:** In 2020 the Sychrov Chateau hotel was converted into a home for the elderly suffering from Alzheimer's disease or dementia. Although the hotel was only 12 years old, the bathrooms in the rooms had to be renovated to meet the needs of clients with reduced mobility.



**Fig. 3.3.2. Remodelled hotel – visual design.**

Recognizing the escalating demand for Alzheimer's care, former hotels are being revamped into specialized centres, blending comfort with tailored support. People with dementia have specific needs, need more personal attention, more hours of care, more supervision, and all this is associated with the need for more carers and therefore higher costs. Costs will rise not only because of the greater number of patients, but also because an increasing proportion of them will be dependent on institutional care. There will not be enough institutions and homes for such disadvantaged people.

Funded through a mix of private and public sources, these projects by companies like Penta Hospitals CZ address the shortage of facilities. These centres adopt an interdisciplinary approach, integrating medical professionals, caregivers, and specialists. Renovations, such as those at the Technik Hotel and a luxury hotel in Jihlava, vary based on the existing infrastructure, creating spaces for therapeutic activities and ensuring holistic care. Projects like the Chateau Hotel Sychrov showcase adaptive reuse, using existing layouts for physiotherapeutic rooms and new homes for elderly. Regional investments, like the one in Ždírec u Jihlavy, emphasize the commitment to providing dementia care options and meeting the growing demand for specialized facilities.

In conclusion, repurposing old hotels for Alzheimer's care not only addresses shortages but also reflects a commitment to compassionate, comprehensive care for those living with dementia, showcasing the positive impact of adaptive reuse projects.



*Fig. 3.3.3. Renovated and repurposed hotel in Czechia.*

### **Methods used to involve the community**

The transformation of hotels not only provides specialized care but also generates employment opportunities within the community. Job fairs, workshops, and training programs are organized to involve locals in various capacities, from caregiving to administrative roles. This not only addresses unemployment concerns but also strengthens the local economy. These projects actively collaborate with local businesses, contributing to a sense of shared responsibility. Whether sourcing materials locally for renovations or partnering with nearby enterprises for additional services, the aim is to boost the economic vitality of the community. This collaboration extends beyond the care centre, creating a network of support to foster a sense of inclusion, the care centres participate in and contribute to local events and activities. This involvement helps break down barriers and dispel any stigma associated with Alzheimer's care. The centres often host open houses, inviting the community to tour the facilities, meet the staff, and gain a better understanding of the services offered.

## Results reached

- Renovating old hotels into new Alzheimer centres, abandoned building became a centre for a hundred people
- The physical transformation has optimized living spaces, making them accessible and safe for residents, contributing to overall infrastructure improvement.
- Provided solution of the rising amount of people with Alzheimer's disease and their wellbeing
- Created new job opportunities
- The success of these projects has prompted the expansion of services, creating a network of care options to meet the evolving needs of those affected by Alzheimer's disease.
- Active engagement with communities has led to increased awareness, reduced stigma, and integration into local events, fostering supportive environments.
- The transformation has stimulated local economies, creating jobs, fostering collaborations with businesses, and contributing to economic growth.

## Adaptation possibilities for other settlements

The success of transforming old hotels into Alzheimer's care centres offers a compelling model for other settlements to utilize existing structures for healthcare facilities. This adaptive approach can be extended to various unused buildings in cities, presenting opportunities for the creation of Alzheimer's centres or other medical facilities. Repurposing existing buildings presents a cost-effective alternative to new construction. The financial resources saved can be redirected towards enhancing healthcare services, creating a sustainable and efficient model for healthcare facilities.

## More info on the best practice

<https://www.alzheimerhome.cz/alzheimer-home-lazne-bohdanec/>  
<https://www.alzheimerhome.cz/alzheimer-home-jihlava/>

jihlava@alzheimerhome.cz  
+420 724 383 772

info@alzheimerhome.cz  
+420 737 810 315



### 3.4. TelefonPogadania.pl (Talk Phone)



**Fig. 3.4.1. Łódź, Poland, and the V4 countries**

The April of 2020 brought to life an initiation to help people through the times of social distancing. The direct stimulus for creating TelefonPogadania.pl was the outbreak of the COVID-19 pandemic and the initial restrictions – lockdown, quarantine, mobility limitations, and fear of direct physical contact with others. It was specifically designed for seniors who were among the most socially excluded at that time and affected by the consequences of the pandemic. The creator and the organizer of the program is Association for Combating Loneliness among Grown-up Persons - “Telefon Pogadania” in the City Office of Łódź, initially in collaboration with the 'Otwarte Idee' foundation.

TelefonPogadania.pl connects lonely and digitally excluded individuals with volunteers through telephone conversations. The initiative primarily serves those who lack other options and, due to age, are not proficient in using

social media, the internet, and other modern communication tools. The project targets lonely, sad, abandoned individuals in need of warm and uplifting conversations, focusing on a group vulnerable to isolation and exclusion. “Older people usually don't use technology like we do, so we want to provide them with a simple, human, warm conversation. (...) These are often individuals with disabilities who, even without the quarantine, are somewhat excluded from any form of social support.” Gabriela Kunert, one of the project initiators.



**Fig. 3.4.2. Poster advertisement of the TalkPhone project. Source: Facebook**

Calls are made through an online platform, and technical training is provided. The cost of calling the landline number is charged according to the operators' rates. There is also a second toll-free number to choose from both a landline and a mobile phone on any network can be called. The initiative is free of charge and directed at those unable to use modern communication tools. The hotline operates daily from 11:00 to 20:00, extended from 7 March 2022.

The initiative is led by a group of activists united by concern for lonely and excluded individuals. The team consists of conversationalist volunteers and specialist

volunteers. The first group is with diverse professional backgrounds: therapists, editors, marketing professionals, hoteliers, coaches, and psychology students. The team of specialist volunteers consists of individuals with professional competencies like therapists, trainers, people working with the elderly, or employees of helplines. They select and train volunteer conversationalists. Not every person who applies to the association can become a volunteer.

In addition to providing emotional support, the initiative encompasses various other tasks. Coordinators play a crucial role in organizing duty schedules, while teams are responsible for promoting the initiative and reaching out to individuals in need. The necessary tools for handling calls include a computer with internet access, connected through a program specifically designed for helpline support. Volunteers are required to have a computer and a headset/microphone set. Technical training is provided to volunteers to ensure they have practical knowledge of the system before engaging in conversations with callers.

**Fig. 3.4.3. Poster advertisement of the TalkPhone project. Source: Facebook**

### Methods used to involve the community

The initiatives rely on partnerships with various organizations such as TMobile, FixMyPage, Click Meeting, Cex Voice Contact Center, Kosma, Kliks, and the 'Otwarte Idee' Foundation, alongside private donations and voluntary contributions. Notably, volunteers and organizers do not receive financial compensation. While being an anti-pandemic measure, the project focuses on mental well-being and the combating of social exclusion. Information about volunteering is accessible on the website and social media platforms, and the initiative has garnered exposure through television promotion, including the "Dzień Dobry TVN" program. Additionally, well-known journalist Filip Chajzer participated as a volunteer for a day, further enhancing the initiative's visibility.



### Results reached

- Within the initial month, over 1000 volunteers enlisted, and the group continues to expand steadily. The initiative benefits from a diverse team comprising both professionals and volunteers who contribute their expertise and efforts.
- TelefonPogadania.pl excels in providing comfort to those most affected by the pandemic without any physical contact. The excellence lies in the simplicity of the idea, its practical implementation, and the engagement of numerous volunteers.
- Similar initiatives can be implemented globally.

### Possible side effects, risk and threats for maintenance

The initiative has limitations in language, Volunteer availabilities, and misunderstandings. The initiative is currently limited to conversations conducted exclusively in Polish, posing language barriers for non-Polish speakers. Some challenges have been encountered in reaching volunteers due to availability constraints. It's important to note that the initiative does not offer professional advice or crisis intervention, potentially leading to misunderstandings among participants. However, the initiative primarily focuses on providing low-risk emotional support to individuals in need. Potential cultural limitations may be encountered during the implementation.

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<https://telefonpogadania.pl/pytania-i-odpowiedzi/>  
<https://www.facebook.com/telefonpogadaniapl/>  
<https://www.instagram.com/p/Cri-ebiKi33/>

### 3.5. Reunion: A New Office Reality. A project by the company Nowy Styl



**Fig. 3.5.1. Krosno, Poland, and the V4 countries**

Nowy Styl is one of the leaders in Europe’s furniture industry and focuses on objectives in line with the UN Global Compact’s Sustainable Development Goals (SDGs). It was founded in 1992 by two brothers – Adam and Jerzy Krzanowski, who set up their company in a makeshift assembly plant in Krosno, a small town in south-eastern Poland with 7 employees, selling 3 chair models. At present more than 4089 people work at the company’s factories and offices in 12 countries, exported worldwide to over 100 countries. Its sales revenue totaled € 336 million in 2022 and has a leading position in the field of comprehensive arrangement of offices and public spaces – stadiums, halls, cinemas, theatres, passenger terminals, and hotels. For its Corporate Social Responsibility and sustainability approach, the company was recognized by EcoVadis, by the Responsible Companies Ranking, and by ‘Responsible Business in Poland. Good practices’ – a publication of the Responsible Business Forum.

**Fig. 3.5.2. Reunion project in practice. Photo credit: © Copyright 2022 NSG TM sp. z o.o.**



With the pandemic restrictions and hybrid work, the traditional five-day working week in the office is slowly becoming a thing of the past. The post-pandemic reality forces employers to find their feet on a broad spectrum between fully remote work and traditional work in the office. There are also several other challenges,

such as building relations in dispersed teams, or collaboration and information exchange among employees in the new reality. Based on studies, qualitative and quantitative surveys, and analyses the company created “The Reunion office concept” which rebuilds relationships after the period of the pandemic by providing places for interaction, meetings, and exchange of thoughts and information. Reunion is an office with a unique workstation arrangement, fostering teamwork and group effort. The benefits of working in an office are manifold, it is more effective in helping onboarding and has greater support at the beginning of a career, it provides a regular daily schedule and keeps the work-life balance. It is proven that an office environment can secure better focus and motivation to work among coworkers and bring networking opportunities. Speedy consultations and spontaneous meetings enhance work efficiency, complemented by a professional, ergonomic workstation and easy access to documents and tools. Commuting and moving around the office provide exercise benefits compared to remote work.





**Fig. 3.5.3. Reunion combined space. The meeting of different zones. Photo credit: © Copyright 2022 NSG TM sp. z o.o.**

In the Reunion Model, three areas are proposed: integration, inspiration, and concentration. These areas are located in specific parts of the office – the deeper you enter into the office space, the more silent areas you encounter. You move from the areas focused on integration towards the zones of increased focus and silence.

The Reunion model was created for employees who follow a hybrid work mode. That's why the unique design relies on a reduced number of standard, stationary workstations and replaces them with solutions that support group- and teamwork, as well as integration. Each employee can choose a place or workstation for themselves, with special consideration given to noise intensity. Although in the office you can find zones where the users can complete their tasks in silence, the Reunion model prioritizes areas designed for collaboration and integration. Without being limited to a single assigned workstation, an employee can choose from among a variety of places in an open space to work together with other team members. The concept was financed by the company, to be implemented by other companies.

The concept is designed by an interdisciplinary team of workplace specialists and enthusiasts. The team included go psychologists, architects, interior designers, and acoustic consultants, who work with Nowy Styl clients on a regular daily basis. The survey study engaged employees at various stages of their career.

### **Results reached**

- The aim of the idea combines economic performance and social cohesion. It pertains to the challenges and needs related to a hybrid work system but can be applied for 100% office work.
- The concept and design were elaborated as a ready-to-apply system that allows an easier and safer return to the office.
- Innovative concept; the excellence lies in its simplicity, minimalism, and individualism – the employees are given the right to choose a place or workstation for themselves .
- Possibilities for offices in every type of settlement.



*Fig.3.5.4. A relaxing meeting-room by the Reunion.  
Photo credit: © Copyright 2022 NSG TM sp. z o.o.*

### **Possible side effects, risk and threats for maintenance**

Applicable in office spaces with suitable conditions, and there is a need for possible architectural pre-conditions related to buildings' construction. Financial and spatial limitations of companies can limit the adaptation, possible but rather improbable are cultural or religious restrictions might hinder the adaptation.

### **Sources and References**

Make your Space Responsible 2021-2022 (Sustainability report)  
[https://www.nowystyl.com/files/interactive/csr-raport-2020-2021pl/?\\_ga=2.102189252.430445399.1673877727-2037300842.1669214145&\\_gl=1\\*uh7yp6\\*\\_ga\\*NjA2ODAA0OTMzLjE3MDQ3MjAyOTA.\\*\\_ga\\_QDE0E7Y8C0\\*MTcwNTkyNTk3MS4zLjAuMTcwNTkyNTk3MS42MC4wLjA.\\*\\_ga\\_EV4FKTY3MM\\*MTcwNTkyNTk3Mi4yLjAuMTcwNTkyNTk3Mi42MC4wLjA](https://www.nowystyl.com/files/interactive/csr-raport-2020-2021pl/?_ga=2.102189252.430445399.1673877727-2037300842.1669214145&_gl=1*uh7yp6*_ga*NjA2ODAA0OTMzLjE3MDQ3MjAyOTA.*_ga_QDE0E7Y8C0*MTcwNTkyNTk3MS4zLjAuMTcwNTkyNTk3MS42MC4wLjA.*_ga_EV4FKTY3MM*MTcwNTkyNTk3Mi4yLjAuMTcwNTkyNTk3Mi42MC4wLjA)

Nowy Styl website: <https://www.nowystyl.com/pl/>

The REUNION report: <https://www.nowystyl.com/en/knowledge/the-reunion-report-explore-our-solutions-for-hybrid-offices/>

Information and images obtained via email exchange with Nowy Styl Senior Workplace Consultant Aleksandra Szelaĝ

### 3.6. Public Bathrooms in the Warsaw Metro System



**Fig. 3.6.1. Warsaw, Poland, and the V4 countries**

The provision of safe, clean, accessible, and free public toilets is a critical public health issue and often highly neglected topic and amenity. In cities across Europe (and broadly, the world), there is a crisis in the provision of this amenity throughout communities. In times of health crises and pandemics, clean, accessible public toilets are also crucial. The public bathrooms in the Warsaw metro offer an excellent, common sense example of well-maintained, clean, accessible, free, and safe public toilets.

The Warsaw metro station is composed of two lines- the M1 and the M2. There are 21 stations on the M1 line and 18 on the M2 line (with three more under construction). Toilets at all stations are adapted for people with disabilities and are located outside the ticketing area. Every station has a bathroom for men and one for women, with a permanently staffed ‘toilet office’ in between the two bathrooms.



**Fig. 3.6.2. Public toilet entrance in Warsaw. Photo credit: Metro Warszawskie**

Signs throughout the station clearly indicate where the public toilets are. The bathrooms are open every day from 6 am to 10 pm, seven days a week. Ensuring clean, safe, and free public bathrooms is done by Warsaw Metro via a long-term agreement with a cleaning company whose responsibility it is to keep them clean. During the COVID pandemic, none of the bathrooms in the Warsaw metro system were closed. Outside of the pandemic time as well, the importance of these amenities cannot be overstated, as access to clean, safe, and free public bathrooms is an essential service for the community.



### Funding methods and community involvement

External companies are responsible for servicing toilets and maintaining cleanliness in the metro. Direct supervision over the work of people employed by the subcontractor is exercised by station managers who, during regular visits, check the condition of the entire facility. During opening hours, toilet staff respond to possible contamination on an ongoing basis. Toilets are free for all users. Operating costs, including the costs of maintaining cleanliness and operation of toilets in the metro, are borne by Metro Warszawskie.

Clear signage for toilets is placed throughout all metro systems, and the toilets are free for all in the community to use.



*Fig. 3.6.3. Renovated lavatories in Warsaw metro. Photo Credit: Metro Warszawskie*

### Results reached

- This best practice is achieved via urban governance and municipal decision-making, prioritizing free, well-maintained public toilets as an essential service to the community.
- Clean public toilets available in public transportation facilitate daily commuting as well as general public use for everyone.
- The continuous cleanliness of restroom facilities accessible at busy locations throughout the city enhances the city's usability, particularly for disadvantaged groups dealing with illness or disabilities.
- From the perspective of Warsaw Metro, the benefits of free, safe, clean public bathrooms are that it is ...” just a better service to the passengers.” Many cities across Europe and the world do not provide such consistently well-maintained, safe, and free access to public bathrooms in their metro systems. Such an example in the Warsaw metro system serves as an international best practice for public health and urban mobility systems.



**Fig. 3.6.4. Accessible and available toilet facilities in Warsaw metro. Color- and useful. Photo Credit: Metro Warszawskie**

#### **Possible side effects, risk and threats for maintenance**

Some cities might not see it as cost-efficient to hire a service that keeps a permanent staff person, yet this would be a short-sighted decision also denying what should be emphasized as an essential community amenity.

All settlements with a metropolitan subway system have the possibility to implement such an approach. By prioritizing sustainability, the initiative can become even more environmentally friendly. Utilizing recycled paper towels, water-saving faucets, and toilet tanks can further enhance its sustainability efforts.

This best practice can be prioritized in all urban environments with metro systems. It is not sufficient that public toilets are simply available, they must also be regularly maintained (restocking toilet paper, soap, paper towels) and cleaned throughout the day so that the user experiences a hygienically safe and clean environment.

### 3.7. Pandemic corporate grant program in Hurbanovo in 2020 and 2021



**Fig. 3.7.1. Hurbanovo, Slovakia, and the V4 countries**

Hurbanovo is a small town in the Komárno District in the Nitra Region of south-west Slovakia. According to the 2021 census, the municipality had 7,467 inhabitants. 3,780 (50,62 %) of inhabitants were Slovaks, 3,038 (40,69 %) Hungarians, 179 (2,4 %) Roma, 28 (0,37 %) Czechs creating a multiethnic environment.

In the town, one of the biggest local employers is the beer factory Zlatý Bažant/Heineken. From 2010 on, Heineken Slovakia supports different types of local public benefit initiatives in the cooperation with a community foundation of Nitra (Nitrianska komunitná nadácia). In May 2020 and again in February 2021 they jointly launched a microgrant programme in addition (as extra call) aiming at helping disadvantaged target groups during the pandemic and spread health-safe practices during the pandemic. Heineken Slovakia decided to

grant an amount of 20000 €/year for local NGOs and initiatives for this purpose. The foundation prepared the grant support system for the calls, from promotion, submission to contracting, controlling and monitoring. The objectives the grant program aimed to support were:

- Education of children from marginalized communities during the lockdown to preserve school-like behavior patterns and hygienic habits
- Health-related services for seniors
- Measures to prevent the further spreading of the disease

The grant commission in 2021 finally decided to support 14 projects in an overall value of 21 390,52 €. In 2020, altogether 12 projects were supported in the value of 19 719 €.

#### Results reached

- For seniors and disadvantaged people using social services healthcare tools were bought – blood pressure monitors, glucose monitors, pulse oximeters, vitamins, face masks, gloves, respirators, disinfection as well as food packages and sanitary goods
- For hundreds of children from marginalized communities, tools were bought for home education
- A safer environment was created for about 300 people using the facilities of the Leisure time centre by equipping the place by disinfection, airwashers, respirators, safety handkerchiefs etc.
- For the local basic school, no-touch soap dispensers were bought, significantly speeding up the process for handwashing
- For the local construction secondary school germicide emitters and UV-lamps were bought for disinfection of surfaces (also the dormitory house and canteen).
- Social service providers for vulnerable patients at their homes received protection and safety equipment
- Social taxi that is used also for transport to covid vaccination centres was equipped by air disinfection ionizer, hygienic step, wheelchair, the employees received protective suits, gloves, respirators and disinfection
- Further tools such as emergency packages, re-usable protective suits, sprinklers for disinfection etc. were bought for the local firemen brigade to help sanitize public buildings.
- The initiative leverages a combination of assets, including financial support from Heineken, expertise from the foundation, and problem-solving capacity from applicants. Through long-term cooperation, local institutions are strengthened. Despite modest funding, significant



impact is achieved within small communities. Decisions are made swiftly, with minimal bureaucracy, allowing for rapid implementation.

- The interdisciplinary approach of the grant program is seen on the projects – organizations of different field and scope applied (education/healthcare/emergency rescue/social services – elderly) that all have their respective target groups.



**Fig. 3.7.2. Providing assistance with the help of local entrepreneurs. Source: Facebook**

#### **Risk and threats for maintenance**

Some of the activities rely on further funding and proved not to be sustainable (in the longterm ). Impact for school-supporting activities seen only in longer term (later nationwide tests proved insufficiency in general).

#### **Adaptation possibilities for other settlements**

Creating the granting structure requires institutional support, ensuring the necessary framework, policies, and resources are in place for effective grant administration. This requires a

dedicated department or team responsible for managing the grant process, as well as clear policies and procedures.

#### **More info on the best practice**

<https://www.hurbanovo.sk/tu-sme-doma-aj-v-case-pandemie/>

Contact person: Ľubica Lachká (Nitrianska komunitná nadácia)

Phone number/E-mail/LinkedIn: lubica.lachka@gmail.com, + 421 911 247 945

### 3.8. Town-level initiative to raise the safety in local schools amid the pandemic by installing ozone generators



**Fig. 3.8.1. Šamorín, Slovakia, and the V4 countries**

In winter 2020 the first two waves of the pandemic shortened the school year. Schools in Šamorín closed down among the first ones in Slovakia in March 2020. While the first lockdown lasted short, the second was longer, resulting in a long absence of children from the school – missing knowledge and social contacts. The town acknowledged that the next flu season can bring another „wave” of the COVID-19 disease but wished to leave schools open. To ensure a safer environment for the children, the municipality decided to buy ozone generators for air disinfection to all of the schools (4 pieces). As a community cooperation, the local media enterprise Samorincan.sk decided to boost this initiative and bought 2 more ozone generators from own resources and an additional 4 from crowdfunding. As a media company, it made a campaign around this initiative. Adding to it, the local co-workers of company Partners Group SK decided to

dedicate 2 more ozone generators into schools from the company’s „Giving back” fund in March 2021. The price of one ozone generator was 160 €. They were distributed to local schools in accordance to the number of children returning to school. It is believed that they helped maintain safety in the post-lockdown return to schools. The solution was applicable to any other building, not only schools. In solving the situation, all 3 sectors cooperated – municipality, companies and local citizens. The founding scheme was co-funding, the Municipality, corporates and Crowdfunding (each 640 €) resulted 12 ozone generators.

#### Methods used to involve the community

Public call to participate in crowdfunding and a media campaign by Samorincan.sk, which resulted in people participating and sending various small amounts that made up for 4 additional ozone generators.



**Fig. 3.8.2. News and thank you note about the ozone disinfecter.**

## Results reached

- 12 ozone generators purchased and distributed among the 4 local schools – by rotating the appliances most of the classrooms and common rooms could be disinfected. Thanks also to this initiative, in the coming weeks hundreds of children returned to schools (classes 1-4 in the first round).
- Innovative in the context of Šamorín – a common goal that was funded by municipality, enterprises and their eager collaborators as well as local citizens. Innovative is also the use of this machine.

## Risk and threats for maintenance

It needs to be reminded that the ozone generator is not a general solution to disinfect public buildings and it is best to combine its use with other, traditional ways of disinfection.

Risks include the schools stop using it when situation returns to normal. The ozone generator can only be used in empty classroom because of possible health risk while operating – it needs a good management to prepare all the rooms while the pupils are absent.



*Fig. 3.8.3. School representative receiving the disinfection tool.*

## More info on the best practice

[www.samorincan.sk](http://www.samorincan.sk)

Archive pages on the case study:

<https://www.samorincan.sk/dakujeme-vsetkym-za-podporu>

<https://www.samorincan.sk/samorincan-sa-snazi-pomahat-zapojit-sa-mozete-aj-vy>

Contact person: Peter Gábor, [info@samorincan.sk](mailto:info@samorincan.sk), Valéria Kličková, [szomolai@foruminst.sk](mailto:szomolai@foruminst.sk)

Phone number/E-mail/LinkedIn

+421 948 032 506



### 3.9. Pandemic grant program of Novartis to support non-COVID healthcare for patients



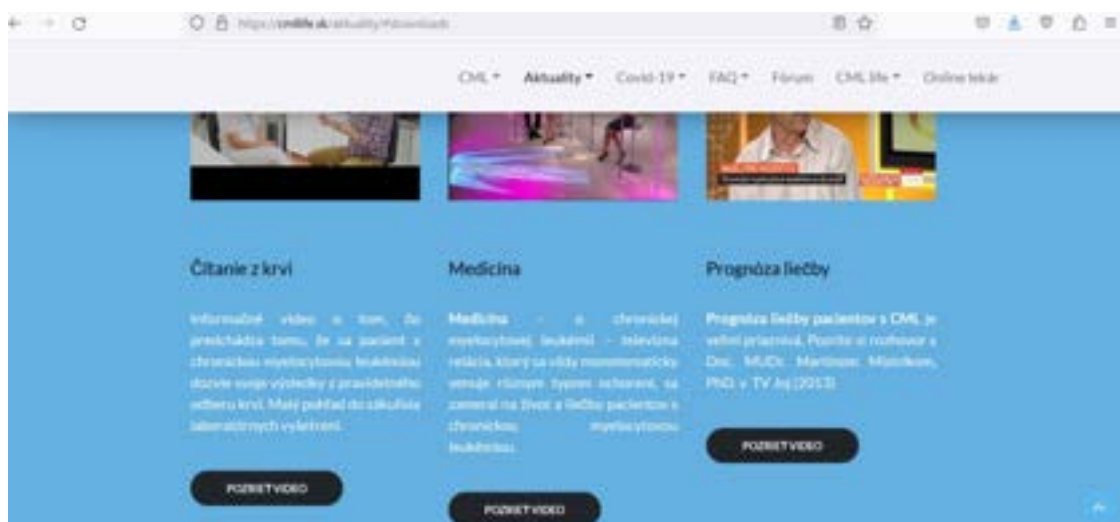
**Fig. 3.9.1.** Piešťany, Bratislava, Žilina, Trenčín, Nitra, Košice, Banská Bystrica, Trnava, Slovakia

The government response to the pandemic situation resulted in reducing physical and personal contact of different groups of population. Most affected were children in primary/secondary education and patients suffering from various health problems neglected in the light of the sudden pandemic. In line with this, many NGOs lost their funding, being unable to work with their target audience. The pharmaceutical company Novartis in Slovakia decided to support 4 projects of NGOs with full respect to the hygienic regulations set by the government. The projects needed to change their „mode” from physical to online or technical assistance while still reaching the aim of supporting patients in need.



**Fig. 3.9.2.** Excerpt from arRheumatism-related video.

Two projects of Piešťany-based NGO League against rheumatism Slovakia were supported for rheumatic patients. In the first project, as the physical trainers could not meet the patients in person, the league decided to record 5 connecting videos showing the elements and a tutorial of a special yoga therapy for patients with rheumatism, led by recognized expert Silvia Bobocká. By these videos, more patients had online access to these physical trainings that helped to maintain their physical as well as mental condition. The videos are still, years on, freely available on the web (including written instructions) and greatly helped patients in dismantling the stress originating from the pandemic situation. Funded by 3000 € by Novartis. The project of yoga videos has grown further since 2020. Along the online videos, in-person exercises returned in the coming years. Currently, in 2023, the League is training new instructors of yoga exercises (from among rheumatic patients) that can provide the service in the 15 local branches + 5 associated clubs throughout the country. The organization works with around 1500 patients with rheumatism.



**Fig. 3.9.3. Offered services for people in need. Webpage excerpt.**

In the second project, patients could meet online with a psychologist and could learned about practices maintaining their mental health in a closing-in atmosphere of the pandemic. Funded by 5000 € by Novartis, this project grew into including more doctors with special fields of gastroenterology and neurology. The meetings are preferably in-person.

The third project was implemented by Patient organization of CML (short for chronic myelocytic leukaemia) in Bratislava. For the past 20 years, this disease is now curable, the outcome depending on many other factors (average life expectancy with uncured CML is about 5 years). One of them is the information and support the patients receive (not only from the physician).

From the financial support the organization set up a webpage with comprehensive and positive information about this disease, with many information materials, guidance, consulting opportunity with an online doctor oncologist. The project included printed materials as well. One section of the webpage was dedicated to Covid-19, which was very necessary at the time of setting up the webpage. The page also contains education materials. This way the patients had almost a full care in handling their disease without a physical contact. Years on, the webpage still operates. CLM in the education materials also emphasis a slogan “Cesta mojej liečby” (the way of my healing). Funds were provided by Novartis: 4650 €.



**Fig. 3.9.4. Patients with weak eyesight can learn computer skills using shortcuts or varying screen brightness.**

The fourth project supported the umbrella-organization of people with weak eyesight (Únia nevidiacich a slabozrakých Slovenska). Their project was aimed at the purchase of information technology for 3 instructors of social rehabilitation, who communicate and provide services to average 100 clients yearly, from 12 districts of Slovakia. By the help of the purchased technology, they can implement their services in a contact-free manner. Throughout 2020, it was almost the only way the organization was able to continue its activities. The project was funded by 2200 € by Novartis.

According to the Yearly report, in 2021, the overall number of clients receiving social rehabilitation was 1744. The service online was provided by cca. for 300 clients in this year. However, some types of services cannot be done online – i.e. self-management (physical orientation in own surroundings) and spatial orientation (using the white cane outside). Other services are possible to run online (learning the Braille font, computer literacy through key shortcuts, voice messages, computer brightness settings by special programs, etc.).

### **Methods used to involve the community**

The community was involved not directly by Novartis, the grant-giving entity but rather the beneficiaries – the NGOs. All work with their target audience, community they operate in. Their activities are aimed at awareness-raising, often in the form of campaigns (Únia nevidiacich a slabozrakých – regular yearly campaign White pencil – Biela pastelka) or media articles. All of them also have a financial campaign in which the community members can contribute.

### **Risk and threats for maintenance**

During online health consultations, empathy may decrease compared to in-person interactions because non-verbal cues and physical presence are absent. This can make the interaction feel more impersonal and hinder the healthcare provider's ability to fully understand and empathize with the patient's concerns. It's important for online platforms to find ways to foster empathy and human connection, like active listening and using empathetic language.

Another risk is if the cooperation lacks a common, urgent objective, which typically drives such initiatives forward. Cross-sectoral collaboration often faces challenges when proposed activities fail to yield immediate results, lack innovation, or involve complex legal procedures. Data deficiency and inaccuracy are also issues, as obtaining precise numbers on clients or users of supported services can be difficult due to overlapping programs within NGOs. Additionally, the absence of technological resources and computer literacy among clients poses a risk to the sustainability of the initiative.

The main innovative element of this practice was the switch to online as the services of these NGOs have always been provided in person, which was not feasible throughout 2021 because of the pandemic.

### **Results reached**

- The interdisciplinary approach is evident from this cooperation – in a strictly set government regulation concerning health a profitable company decided to support NGOs that were cut off from their funding opportunities because of the pandemic. All three sectors worked together for one objective: reduce health risk and save lives. The government gave the health-safe framework, the company gave money and the NGOs, as traditionally, reach out to the final beneficiaries (in this case the patients).
- Online assistance to rheumatic patients (5 video tutorials, online psychologic education program),
- Social rehabilitation services given to 1744 people with weak eyesight supported in 2021 (not solely by the Novartis grant), many of them received it online throughout Slovakia
- Awareness-raising website and online medical assistance for CLM patients
- Generally extending previous services to online/contact-free forms



- All outcomes created can be used limitless in the coming years, further raising the number of potential clients benefiting from the mentioned health services.

### **Adaptation possibilities for other settlements**

The project was a regional-level activity, as the different NGOs being supported from the grant are working in different regions of Slovakia.

Good possibilities for adaptation. There are some preconditions: the grant-giving company should be a significant entity and ideally its field of operation should relate to health. Local NGOs existence with continuous activities in the field of medical assistance (or other topics) with good contact to the local community. The current best practice is a model example for cross-sectoral cooperation for public good. Such a model can be created for various other public topics (ideally though not controversial topics). There are limitations in scale because smaller companies are not eager to fund external organizations – as they are often fighting for survival themselves.

### **More info on the best practice**

Contact person: Janka Dobšovičová Černáková, chairman, [predseda@mojareuma.sk](mailto:predseda@mojareuma.sk)

URL: [www.unss.sk](http://www.unss.sk)

Contact person: Tatiana Winterová, [unss@unss.sk](mailto:unss@unss.sk)

Contact person on behalf CLM: Maroš Havran, chairman, [info@cmlife.sk](mailto:info@cmlife.sk)

URL: <https://cmlife.sk/>

# 4. Climate change and urban resilience



**CEURES**  
Central European Urban RESiliency



Settlements are increasingly confronted with the unpleasant effects of climate change, and increasing risks and dangers make everyday life more difficult for citizens. According to some forecasts, the effects of climate change will be felt more acutely in the Central and Eastern European region, as extreme weather events will become more frequent in countries located at the junction of various climate zones. From desertification to flash floods to extreme heat shocks, new challenges and to an unexperienced extent are being presented to citizens and decision-makers in unprecedented ways and frequency. The climate resilience of settlements means adaptation, i.e. adequate and conscious adaptation to changed environmental and climatic conditions, and mitigation, i.e. the reduction of existing and future impacts. We know several ways to do this, and in this chapter, we present several effective adaptation and mitigation interventions that could help in the V4 countries.



The climate resilience of urban areas can perhaps be approached in the simplest way from the side of urban green space management. It has long been known that urban green spaces have beneficial effects, decreasing the heat stress caused by the urban heat island phenomenon from a microclimatic point of view, and providing additional ecosystem services in addition to their recreational and aesthetic value. They can serve as a haven for cultural diversity, a meeting point in a multicultural society, or a temporary refuge for populations isolated during the pandemic and looking for green space. The development of green spaces is not only possible in parks in the traditional sense. In many cases, urban developers and planners have put aside horizontal green spaces and are increasing urban green spaces with the help of green walls or intensive and extensive vertical forests. But not only green spaces but also urban water retention can help settlements adapt to changing climatic conditions, one of the most frequently used examples of which is the application of the sponge city concept, the planting of new urban oases and rain gardens. But similar positive interventions are strengthening energy sustainability and autonomy, such as the use of green energy and support for investments. From a holistic perspective, the good practices of urban climate resilience help the population to increase mitigation and adaptation capacity, even within the framework of complex investments. In this case, it is perhaps clear that the well-known principle in architecture: "less is more" does not apply in the fight against climate change. The more, the better! This chapter draws attention to this idea through the good practices presented.





#### 4.1. Narew River Clean-up as a Local Ecological Civic Initiative



**Fig. 4.1.1. Poland, of the V4 countries**

The Narew is one of the longest rivers in Poland with 448 km length in Poland and originates in Belarus in the Orłowo wilderness in the eastern part of the Białowieża Forest. It is a lowland river forming extensive valleys, peat bogs, and marshes. It belongs to anastomosing rivers, meaning it flows through numerous branching and connecting channels. The most beautiful stretches of the valley from Suraż to Rzędzian are protected in the Narew National Park. Due to its intertwined channels and extensive reed beds, this park is sometimes referred to as the "Polish Amazon." In the Wizna region, it merges with the Biebrza (Biebrza National Park) and further flows

through the Narew Valley in the Łomża Landscape Park. Almost along its entire length, the Narew has retained its natural character, creating numerous backwaters, meanders, and frequently changing direction. Its waters are classified as the second and third water purity classes, and significant sections are protected in national parks, landscape parks, and Natura 2000 areas. It serves as a sanctuary for fauna and flora associated with aquatic and marsh environments. Major towns along the Narew include Suraż, Choroszcz, Tykocin, Łomża, Ostrołęka, Pułtusk, Serock, and Nowy Dwór Mazowiecki. Despite its charm and beautiful location, the Narew River is exposed to various pollutants. It is necessary to restore its natural beauty and clean it from debris that accumulates on the bottom.



**Fig. 4.1.2. Narew river view. Source: <https://www.fdpa.org.pl/sprzatanie-narwi>**

Since 2006 cleaning the urban beach and the riverbed along its entire length before the start of the summer season has become a tradition. Initiated annually by Łomża divers from the "Underwater Deer" club, in 2016, the action also attracted colleagues from several other clubs. Importantly, the Łomża club managed to establish cooperation with the Foundation for the Development of Polish Agriculture, a Foundation to support sustainable rural development, providing educational and fostering activities for adaptation to climate change. The 2016 Narew River Clean-up co-organized by FDPA was one of its 'Local ecological civic initiatives - together for the environment'.

The program also aimed at social purposes, addressing Łomża residents, visitors, tourists, and the environment per se. The main objective was twofold: first, to raise awareness among residents about the pollution problem of the Narew, which is used by the local community for recreational purposes. Secondly, to sensitize especially those residents who contaminate the waters with solid objects, knowingly contributing to the degradation of the natural environment and the destruction of the natural habitats of river fauna and flora.

The following actions have been implemented: purchasing necessary equipment for locating and efficiently collecting debris. The urban beach and nearby areas have been cleaned, while debris in the riverbed, posing risks to swimmers, has been removed. Additionally, preparations have been made to ensure the beach and bathing area are safe for residents during the summer season, with cleanup conducted at the end of the season after the beach is closed.



Fig. 4.1.3. Divers clean the Narew River. Source: <https://www.fdpa.org.pl/sprzatanie-narwi>

### Methods used to involve the community

The local community was informed about the organized action via local media: radio, press, the club's website, and the social media platform Facebook (over 1000 views). Participants and club members cleaned up debris on the urban beach, under the "Hubala" bridge, and the parking lot.

After the action, participants could enjoy warm grilled sausages, cake, and other treats. They also participated in a raffle for small gadgets provided by sponsors and the main prize – a diving computer. Small gifts were also prepared for children. Thanks to the generosity of sponsors, each participant received a T-shirt with the club's logo "Podwodny Jeleń," (Underwater Deer), the sponsor's logo SONAROL, FDPA, and the inscription "Local ecological civic initiatives - together for the environment." The "Narew Cleaning" initiative by the Łomża Diving Club "Underwater Deer" is carried out as part of the project "Local Ecological Civic Initiatives - together for the Environment" of the Foundation for the Development of Polish Agriculture and financed by the National Fund for Environmental Protection and Water Management and own funds. They secured funds to purchase equipment that helped execute the task more precisely and will be used in subsequent similar actions. This equipment includes



a pontoon with an engine and batteries, 10 diving lanterns, and a depth sounder. The equipment was funded by the National Fund for Environmental Protection and Water Management.

The initiative received public subsidies in the framework of the yearly program of cooperation between the City of Łomża and local non-governmental organizations for the realization of public tasks related to ecology and the protection of animals.

## Results reached

- The aim of the initiative combines environmental protection and education. Its objective is to raise awareness among residents about the pollution problem of the Narew River, which is used by the local community for recreational purposes.
- The excellence of the action lies in its consequently cyclical character – it has been taken yearly since 2006. Additionally, in 2016 it engaged an organization of a nationwide scale and a record number of scuba divers.
- All "underwater treasures" were brought to the shore and photographed. The most significant find turned out to be a metal plate, which probably was part of a bridge railing several years ago. Other items retrieved from the water included glass bottles, rusty cans, various metal elements, and tree branches.
- The collected debris was placed in one location and taken to the landfill by municipal services. Thanks to this action, the beach can be safely used.
- Reports from the "Narew Clean-up" are published on the club's website, showcasing the underwater "treasures."



*Fig. 4.1.4. Cleaning in progress. Source: <https://www.fdpa.org.pl/sprzatanie-narwi>*



### **Risk and threats for maintenance**

The action requires know-how and shouldn't be taken by inexperienced persons or groups. Also, legal issues are to be respected. The choice of the water body is very important. Cleaning rivers and channels with flowing water is approached differently than cleaning lakes. Before taking action, the owner or user of the water body must be contacted. All rivers and channels with flowing water and the vast majority of lakes are "public waters" over which, according to the law (Water Law Act), we have the right to move freely, but only in a 1.5-meter strip of the adjacent bank. Access to the water, transport of collected debris, and parking of vehicles require contact with the landowner (bank) and their consent to the action. The organizer is obliged to notify the Regional Directorate for Environmental Protection about the activities if the water body is located in a protected area. It is especially relevant in Landscape Parks or National Parks, where conducting the action requires joint organization and cooperation of these units with the organizers in cleaning the bottoms of reservoirs.

### **Adaptation possibilities for other settlements**

Technical adjustments may be needed or special precautions taken in the case of waters in other climatic zones. The initiative concerns flowing water and a city beach, thus a specific natural context. The initiative is fitted for implementation in other Visegrad Group (V4) countries or locations with a different climate. Organizational challenges may be related to the presence of different fauna and flora, weather conditions, hydrological conditions, or other physical-geographical factors. The latter might require, perhaps, only technical adjustments.

### **Sources and References**

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; <http://lomzynskie24.pl/2016/06/sprzatanie-narwi-2016/>  
; <https://www.facebook.com/profile.php?id=100057295066372>  
interview with Karolina Witeska-Chmielewska (FDPA) - 15.01.2024

## 4.2. Urban Meadows



**Fig. 4.2.1. Lublin, Wrocław and Warsaw, Poland, and the V4 countries**

Urban meadows refer to diverse areas where municipalities have shifted to reduced mowing. Diverse Greenery authorities in Polish cities who are responsible for the maintenance of parks, squares, plants, trees, and more have implemented urban meadow policies and practices. Urban meadows serve multiple crucial functions. They help mitigate the biodiversity crisis by providing habitats for various plant and animal species, creating and protecting habitats for wild pollinators, and supporting essential ecosystem functions. Additionally, these areas also serve as feeding spaces for birds. By reducing the need for frequent mowing, urban meadows help cut maintenance costs while still maintaining ecological balance, they enhance the aesthetics of urban environments, providing visually appealing natural landscapes. Urban meadows contribute to climate health by retaining water, they help reduce the urban heat island effect by reflecting sunlight, thus

mitigating surface heat accumulation and creating more comfortable urban environments.

Two main techniques are used for urban meadow developments. The first is the cultivation of flower beds in which plants are established. The second technique involves abandoning intensive mowing and allowing the natural process to take over. For example the Capital of Warsaw around 2018 started a shift from intense to moderate mowing, from 7 times a year to once or three times. It is noted that the second solution, also referred to as ‘a habitat for natural solutions,’ is much cheaper as the flower beds and areas manicured with plants are higher maintenance and more expensive to maintain. Representatives from the City of Lublin noted that “Natural flower meadows are places where bees and other pollinators find a safe place to feed, small animals find shelter, and city residents can enjoy the beauty of wildflowers and lush greenery.” As part of their principles of maintaining green areas, ZM Wrocław includes the approach prioritizing biodiversity with a focus on minimizing mowing and raking activities. Composting is encouraged, along with promoting the second life of trees as ongoing habitats for insects and small animals. Organic matter is utilized, and tree-friendly solutions are implemented to further support environmental sustainability. Additionally, collaboration with local communities plays a key role in achieving these goals. The cost savings aspect of this initiative cannot be overstated. In Warsaw, ZZW directors made the decision for reduction based on terrain experience, with some inspectors also deciding that it was not wise to spend so much money on mowing and was also very destructive for the environment.

### Methods used to involve the community

ZZM Warsaw notes that “Public response to the new practice was good.” Employees observed the activity on social media pages for the agency and comments such as ‘At last, authorities decided to stop mowing during the drought.’ Utilization of municipal social media platforms can help convey crucial information to inform and shape public awareness.

**Fig. 4.2.2. Lush greenery around the tramways.**

**Results reached**

- The approach is led by municipal agencies responsible for parks, green areas and related spaces and relates mainly to issues of urban governance and environmental protection. Urban Meadows are part of a broader ethos to caring for urban green spaces.
- Not mowing specific areas designated for urban meadows in Spring and Summer in order to provide the best possible conditions for animals living in the city
- Over 70 hectares of our land are excluded from the city’s first mowing - these are largely urban meadow areas that are mowed just once a year.
- For the first mowing, areas where bulbous plants are currently blooming are avoided.
- In areas of newly established perennials and beds of shrubs, the area of biodiversity increase.



**Fig. 4.2.3. Seeding in progress.**



**Risk and threats for maintenance**

Some cities experience controversy when the initiative is rolled out. For example, when the urban meadows initiative was introduced in Wrocław, there was criticism from citizens and the media. However, there were also allies, for example, the director of the Botanical Garden in the city was featured prominently in an article expressing that it was a very good idea. Various ecological organizations and scientists also came to the forefront, expressing that the initiative should remain.

To mitigate the potentially serious side effects of local controversy and criticism, it is crucial to communicate the policy to the public.



Diverse Polish municipal agencies in charge of the maintenance of the green spaces of the city use social media to communicate about and explain:

- Where they mow
- Where they don't mow (and why)
- The importance of mowing street greenery for the safety of pedestrians and drivers
- The necessity of mowing for sanitation in certain areas
- The environmentally friendly practice of reduced mowing tailored to different context

Some areas are excluded from reduced mowing practices, such as areas by roads where high grass could reduce the visibility of both drivers and pedestrians. Thus, there are selective places where mowing is more frequent, such as pedestrian crossings for visibility and some recreation areas. Maintenance is adjusted to particular site characteristics.

Diverse agencies across Polish cities remarked that maintenance is adjusted to particular site characteristics. The vegetation in the road, considering its growth throughout the entire growing season, should not be allowed to threaten the safety of road users, restrict the required field of visibility, narrow the road gauge, or hinder road maintenance. Consequently, due to the aforementioned reasons, the specificity of the road lane necessitates that work related to mowing urban lawns in the road lanes be carried out by the local Department to prevent grass from overgrowing. Such overgrowth could potentially diminish visibility and impede the drainage of rainwater on the road and sidewalks.



*Fig. 4.2.4. Unmowed grass areas.*

### **Adaptation possibilities for other settlements**

The potential is high for adaptation in contexts across V4 countries, due to similar urban contexts, climates and geographies. Culture can pose a limiting effect when and where this is a lack of climate awareness or lack of interest in environmental health, solutions, and urban heat mitigation.

### **Sources and References**

<https://zsm.wroc.pl/standardy-utrzymania/>

Lublin: Photo Credit: City of Lublin; Warsaw Photo Credit: Annika Lundkvist; Warsaw Photo Credit: Krzysztof Babicki, ZZW; Wrocław: Aleksandra Zienkiewicz, ZSM

### 4.3. EcoMart: A sustainable Supermarket Solution Using Wood



**Fig. 4.3.1. Skuteč and Hustopeče, the Czech Republic, and the V4 countries**

Skuteč is a town in the Pardubice Region with approximately 5000 inhabitants. The village is famous for its hilly landscape of the Iron Mountains and Nature Reserve around the Anenský Brook.

Hustopeče is a town near Brno with 6000 inhabitants, it lies in the warmest part of the country exposed to the climate change.

A remarkable example that illustrates the transformative potential of wood in the construction industry is the Penny Market Skuteč built by A2 Timber s.r.o., completed in November 2022 and awarded the Foundation for Life - Wooden Building of the Year 2023, funded by the Ministry of Trade. This project demonstrates the environmental and economic benefits of wood construction.

Addressing potential side effects and risks is paramount to sustaining the success of wood building projects. Timber construction can be susceptible to destruction and

therefore must be prevented by proper protection of the material.

The construction of this store will have a major impact on future trends in sustainable architecture, as it is the first all-wood building in the Czech Republic. A number of new jobs or electric vehicle charging stations will also have a positive impact on the residents of Skuteč.

In conclusion, the Penny Market Skuteč project, recognised by the Ministry of Industry and Trade, serves as a beacon of best practice in the field of timber buildings. From strategic financing methods to proactive risk management, this project exemplifies how integrating wood as a sustainable building material can lead to both innovative structures and lasting industry impact.



**Fig. 4.3.2. The Eco-friendly Penny Market. Source: webpage**





**Fig. 4.3.3. Interior of the Eco-Mart.**  
Source: webpage

**Innovative and excellent elements of the best practice:**

The building boasts an all-wooden construction, reflecting a commitment to sustainability. It incorporates ESyCool Green Cooling and Air Conditioning systems for efficient climate control, along with LED lighting to minimize energy consumption. Electronic display price tags

enhance pricing transparency and environmental consciousness. Additionally, an electric vehicle charging station promotes eco-friendly transportation options. A photovoltaic power plant harnesses solar energy for sustainable electricity generation. Utilizing 400 m<sup>3</sup> of wood from responsibly managed forests underscores the project's dedication to environmental stewardship. Moreover, for every tree harvested, one to three new trees are planted, ensuring the preservation and regeneration of the original forest ecosystem.

**Methods used to involve the community**

The Penny Market Skuteč project actively involves the community by creating awareness, providing opportunities for exploration, and integrating residents into the sustainable aspects of the project, fostering community pride and ownership in sustainable development.

**Results reached**

- As the first all-wood shop in the Czech Republic, won the supermarket prize of the Wood for Life Foundation, funded by the Ministry of Industry and Trade.
- Wood as a renewable resource stores CO<sub>2</sub> from environment, for the production of a cubic metre of reinforced concrete 500 kilograms of CO<sub>2</sub> are, which can be saved by using wood only.
- Thanks to ESyCool Green Cooling refrigerant costs are by 95% lower than conventional cooling system.
- Energy savings compared to CO<sub>2</sub> are lower by more than 20%.

To replicate the success of the Penny Market Skuteč project in other communities, share project details as a blueprint, tailor community engagement models, forge local partnerships, adapt to each community's needs, provide job opportunities, collaborate with local authorities, share best practices through a knowledge exchange, and promote sustainable practices.

**More info on the best practice**

Link: <https://konstrukce.cz/realizace-staveb/devet-pohledu-na-soucasnou-drevenou-architekturu-1280>

Contact person: Martin Povala



#### 4.4. Towns' pathways to urban resilience and self-sufficiency



**Fig. 4.4.1. Říčany, the Czech Republic, and the V4 countries**

More and more municipalities are striving for energy self-sufficiency. A quarter of town halls in the Czech Republic are already interested in their own resources. For example, they are expanding gas stations, but most are using photovoltaics. But these improvements and endeavours are not equally distributed throughout the Czech Republic. For example, there are 114 villages and eight towns in the Prague-East district. Only three of them, Říčany, Šestajovice and Úvaly, use alternative energy sources.

Through a comprehensive investment program focused on sustainability, Říčany aims to improve the city and make everyday operations more affordable and efficient through a variety of implemented sustainability projects. In recent years, Říčany has developed an investment portfolio that can be considered unique in the Czech Republic, as it encompasses various aspects of sustainability. This includes energy production, waste management, promoting car-free

transportation modes, and fostering knowledge expansion initiatives.

Říčany, a town committed to sustainability, employs solar energy, with 150 panels on the municipal office and plans for more on the elderly home. These panels cover 80% of the office's summer energy needs. Green roofs adorn the Residential Centre, kindergarten Větrník, and primary school buildings. The botanical center showcases a rain biotope (extensive raingarden) for responsible rainwater management.



**Fig. 4.4.2. Eco-friendly heating material in a storage.**

Environmental initiatives include distributing 648 composters, reducing waste production by 350 tons/year. The town plants orchards, promotes electric cars, and fosters outdoor classrooms and forest gyms. Efforts extend to reducing energy consumption in the sports hall and cultural center. Funding for these initiatives involves a mix of public and private sources, with costs varying based on the project scale. An interdisciplinary approach

integrates various fields, ensuring comprehensive sustainability. However, possible side effects, such as the impact on local ecosystems, are carefully considered.

While the town prioritizes maintenance, potential risks and threats, such as technological malfunctions or increased costs, are acknowledged. The funding method and costs are essential considerations for the town's continued commitment to environmental excellence.



**Fig. 4.4.3. Insulated, eco-friendly housing.**

**Innovative and excellent elements of the best practice**

The municipality of Říčany has implemented a range of environmentally conscious initiatives to promote sustainability. These include the installation of 150 solar panels at the municipal office, the implementation of green roofs, and the establishment of a rain biotope and botanical center at the primary school. Additionally, a waste prevention system has been implemented with 648 composters provided to citizens. Efforts to enhance greenery include the planting of orchards, avenues, and landscape greenery. The city has also introduced electric cars for municipal use and created outdoor classrooms and a forest gym. Furthermore, measures have been taken to reduce energy consumption at the sports hall and cultural center.

**Fig. 4.4.4. Sign labelling the eco-friendly Veronica centre**



**Methods used to involve the community**

Engaging the community is vital for the success of Říčany's sustainability initiatives. Encouraging participation in eco-friendly projects, like tree planting or clean-up campaigns, fosters a sense of community.

Educational programs in schools and community centers can raise awareness about sustainable practices, creating a knowledgeable and environmentally conscious citizenry. Additionally, involving local businesses through partnerships or sponsorships strengthens the communal commitment to green initiatives.

Volunteer opportunities, such as maintaining green spaces or participating in recycling programs, empower residents to actively contribute to the town's sustainability goals. By fostering a collaborative



spirit, Říčany ensures that its community not only benefits from but actively shapes its environmentally friendly future.

### **Results reached**

- In summer, the panels located on the roof of the municipal office cover up to 80% of the energy consumption.
- The rain biotope is intended to show the benefits of careful management of rainwater. The atrium of the school will be transformed into a green oasis, the concrete pavement will disappear and be replaced by vegetation. Rainwater will be channelled into the wetland habitat.
- The implementation of the composters will reduce waste production by about 350 t/year.

### **Adaptation possibilities for other settlements**

The success of Říčany's sustainable initiatives offers valuable insights for other settlements seeking adaptation possibilities. One key possibility lies in the scalability of projects, allowing communities to tailor solutions based on their size and needs. However, limitations may arise due to variations in cultural practices, geographical features, and the scale of implementation. The success of these investments relies on local public and private engagement, as well as open-mindedness. This necessitates a deliberate effort to build both investment and social engagement within the community.

Considering local contexts is crucial to overcoming these limitations. Flexibility in adopting best practices ensures that adaptations align with a settlement's unique characteristics. By identifying shared principles and customizing approaches, other communities can draw inspiration from Říčany's achievements while tailoring strategies to suit their specific circumstances.

### **More info on the best practice**

<https://www.ricany.cz/mesto/>

<https://ekoricany.org/>

Phone number: +420 323 618 111

Email: [podatelna@ricany.cz](mailto:podatelna@ricany.cz)



#### 4.5. Ecological village Hostětín



Nestled in the landscapes of the Zlín Region within the White Carpathians, Hostětín Village is home to 217 inhabitants. Since 1995, this community has been a beacon of sustainability, earning accolades for its commitment to environmental initiatives, local resource utilization, and renewable energy practices. Hostětín's dedication to eco-friendly living has not gone unnoticed. In 2009, the village was honored with the Czech Solar Award (Česká solární cena) and also celebrated as the Village of the Year (Vesnice roku). The year 2012 brought international recognition with the Climate Star, an award bestowed upon 19 EU municipalities.

**Fig. 4.5.1. Hostětín, the Czech Republic, and the V4 countries**



**Fig. 4.5.2. Green roof in Hostětín.**

Fast forward to 2023, and Hostětín proudly wears the title of Green Municipality of the Year (Zelená obec roku). Adding to its impressive list of achievements is the Energy Globe Award, an annual international competition for sustainable projects. Hostětín Municipality claimed the national title in both 2007 and 2020, highlighting its consistent efforts in conserving natural resources and championing renewable energy. With over 800 global projects in the running each year, Hostětín continues to set an inspiring example for communities worldwide.

Hostětín Village is showcasing a variety of best practices that have earned accolades and recognition. Together, these initiatives demonstrate the village's commitment to sustainability and serve as a model for creating greener and more resilient communities in all over the Czech Republic. Each investment is a building block of a larger sustainable direction representing different aspect of sustainability, ranging from renewable energy generation and energy efficiency to environmental conservation and community engagement.

In Hostětín Village, a shining example of sustainable living, several best practices have been implemented, earning the community accolades and recognition. The Biomass Heating Plant, established in 2000, utilizes locally sourced wooden chips from surrounding forests, providing heat to 80% of households and saving 1,100 tonnes of CO<sub>2</sub> emissions annually.

The village boasts environmentally friendly public lighting, renovated in 2006 with fully shielded lamps donated by Philips Lighting. This initiative reduces electricity consumption by at least a quarter and minimizes light pollution.



**Fig. 4.5.3. Green roof and inner garden in Hostětín.**

The groundbreaking Passive House Veronica, erected in 2006, is the pioneering model of its kind in the Czech Republic. Distinguished by its thick thermal insulation, airtightness, and heat recovery ventilation system, it achieves energy consumption levels 7-10 times lower than conventional buildings. The house incorporates mineral wool and straw insulation, windows with low heat transfer, and ventilation with heat recovery. It also features solar water heating, heating from the municipal biomass heating plant, rainwater harvesting, a green roof, and the use of ecological building materials such as clay plaster and natural bricks.

Since 1997, Photovoltaic Power Stations have been a continuous endeavour, featuring solar collectors on houses, a large-scale collector at the Veronica Centre, and an Organic Cider House power plant. This initiative saves approximately 100 tonnes of CO<sub>2</sub> per year.

The Root Water-Cleaning Plant, an artificial wetland, employs common wetland plants to purify water through natural biological processes, contributing to the village's commitment to sustainability.

The Educational Natural Garden and Orchard, certified in 2013, actively involves the public in natural gardening, biodiversity support, and beekeeping. This initiative preserves old fruit varieties, restores



original orchards, and promotes ecological building practices using clay plaster and natural bricks. Hostětín Village stands as a beacon of sustainability, showcasing how these diverse initiatives collectively contribute to a greener and more resilient community.

### **Innovative and excellent elements of the best practice**

This Village is excellent in the sense of reaching urban resilience, because it represents a complex portfolio of investments, characterized by a deliberate intervention strategy and the maximization of existing resources through smart, interrelated utilization. These investments are seamlessly integrated into daily life and also stimulate the economy. Remarkably, these initiatives began as early as 1995. The investment consists of:

- Biomass Heating Plant - burns wooden waste from the surrounding forests,
- Environmentally friendly public lighting,
- The first passive building in the Czech Republic - Ventilation with heat recovery from outgoing air, Solar water heating, Heating from the municipal biomass heating plant, Green roof,
- Photovoltaic power stations,
- Root water-cleaning plant,
- Educational Natural Garden and Orchard.



*Fig. 4.5.3. Example of a green wall in Hostětín.*

### **Methods used to involve the community**

In Hostětín Village, community involvement extends beyond environmental projects, creating a vibrant tapestry of shared responsibility and mutual support. Residents actively participate in various facets of community life, fostering a strong sense of connection and collaboration.

The Veronica Center, beyond its role in sustainable projects, serves as a hub for community engagement. Here, opportunities for additional working roles are created, providing residents with employment avenues that contribute to the village's economic sustainability.



Education takes center stage in the community's values. The Educational Natural Garden and Orchard isn't just a green space; it's a dynamic learning environment. It involves the public in the process of natural gardening, saving old fruit varieties and restoring original orchards in the countryside. Children in Hostětín benefit from educational programs in the garden, cultivating a sense of environmental stewardship from a young age.

Community events and gatherings further solidify the bonds among residents. These events, whether centered around cultural celebrations or communal projects, provide platforms for residents to connect, share ideas, and actively contribute to the village's social fabric.

### Results reached

- Several prizes won - Energy Globe Award, Czech Solar Award, Village of the Year, Climate Star, Green Municipality of the Year
- Biomass heating plant - Heat distribution used by 80% of households in Hostětín. Saves approximately 1,100 tonnes of CO<sub>2</sub> emissions every year. Produces about 3500 GJ of heat per season. Payments for fuel do not leave the region but stay in the municipality
- Environmentally friendly public lighting - reduces electricity consumption by at least a quarter
- Photovoltaic power stations - saves about 100 tonnes of CO<sub>2</sub> per year
- Passive House Veronica - annual energy consumption less than 15 kWh/m<sup>2</sup>, 7-10 times less than in conventional buildings

### Adaptation possibilities for other settlements

Replicating Hostětín's success involves recognizing adaptable practices and understanding potential limitations. The community engagement model, sustainable economic practices, and educational initiatives offer possibilities but require cultural sensitivity and consideration of local dynamics.

Renewable energy integration is viable but needs geographical and scalability assessments. Fostering social cohesion through cultural events is universal, with adjustments for local nuances.

Utilizing local resources is universally applicable but depends on their availability. In essence, customization is key, considering each settlement's unique context and characteristics.

### More info on the best practice

<https://hostetin.veronica.cz/ekologicka-vesnice>

+420 572 641 855, +420 608 426 029

[hostetin@veronica.cz](mailto:hostetin@veronica.cz)

#### 4.6. Urban Farming compilation in Czechia



**Fig. 4.6.1. Prague and Ostrava, the Czech Republic, of the V4 countries**

Best Practice in Urban Farming compilation consist of the practices of Herba Fabrica, Greenbox, Micro Zelda and St. Prokop's Orchards. These urban farming pioneers are strategically located in diverse settings, contributing to the global shift towards sustainable agriculture. Herba Fabrica utilizes innovative hydroponic containers, fostering green spaces in the heart of urban environments. GreenBox thrives in the bustling Anděl district of Prague, Czech Republic, symbolizing the city's commitment to fresh and sustainable produce. Micro Zelda flourishes as an urban farm in the center of Ostrava, Czech Republic, specializing in hydroponic cultivation of nutrient-rich microgreens. St. Prokop's Orchards, situated in Prague, Czech Republic, not only champions organic farming but also serves as a demonstration farm, embodying a holistic approach to sustainability. Together, these locations showcase the versatility and impact of urban farming practices worldwide.



**Fig. 4.6.2. Growing microgreen in stimulating light.**

Urban farming, the practice of cultivating and producing food within city limits, has emerged as a transformative solution to enhance food self-sufficiency, promote sustainability, and foster community engagement with various techniques and through different practical approach. Exemplifying this trend are notable initiatives such as Herba Fabrica, GreenBox,

Micro Zelda, and St. Prokop's Orchards, each contributing to the narrative of successful urban farming. In the urban landscape, Herba Fabrica pioneers the use of hydroponic containers, providing an efficient and space-conscious means of cultivating fresh produce. Located in the vibrant Anděl district of Prague, GreenBox represents a commitment to sustainable urban living through vertical farming, demonstrating the integration of technology and agriculture. Their innovative approach to sustainable urban agriculture promotes sustainable urban living while addressing space constraints and environmental concerns.

Micro Zelda, situated in the heart of Ostrava, specializes in hydroponic cultivation of nutrient-rich microgreens, showcasing how urban farming can cater to the rising demand for health-focused, locally sourced superfoods. Meanwhile, St. Prokop's Orchards in Temelín sets an exemplary model by combining organic farming with social responsibility, with individuals facing disabilities or social disadvantages playing a pivotal role in orchard maintenance. St. Prokop's orchards is an eco farm of Mr. Netík's family, mainly engaged in growing organic fruit and employing socially disadvantaged and disabled people.

In conclusion, urban farms represent a promising avenue for sustainable food production in urban environments. By examining the innovative practices of Herba Fabrica, GreenBox, Micro Zelda, and St. Prokop's Orchards, we gain valuable insights into the diverse approaches, challenges, and successes that define the landscape of urban farming.

**Innovative and excellent elements of the best practice**

These sustainable practices include using local, eco-friendly, fresh, and seasonal products, as well as creating or incorporating urban green spaces in cities. Implementing rainwater absorption methods helps protect against erosion and mitigates heat, dust, and noise pollution. Additionally, these initiatives serve as centers of biodiversity and encourage community involvement. Avoiding the use of chemical sprays and promoting local production with recycled and compostable packaging further reduce transportation emissions and support environmental sustainability.

**Fig. 4.6.3. Growing microgreen in stimulating light.**



**Methods used to involve the community**

Urban farming initiatives employ diverse methods to actively engage and involve the community in the cultivation and promotion of locally sourced produce. Community gardens serve as shared spaces where residents can collectively participate in planting and harvesting crops, fostering a sense of communal ownership.

Community-supported agriculture programs establish a direct link between farmers and consumers, as residents invest in the farm by purchasing shares and receive regular supplies of fresh produce. Collaborations with local schools integrate urban farming into the curriculum, providing educational opportunities for students and encouraging family involvement. Events, farmers' markets, and online platforms create interactive spaces for direct engagement, enabling farmers to connect with a wider audience.

At St. Prokop's Orchards, the inclusion of social farming adds another layer of community engagement. This model involves individuals facing disabilities or social disadvantages in the care of the orchard and trees. This innovative approach not only promotes social inclusion but also enriches the community's connection to the farm by emphasizing shared responsibility and mutual support.





*Fig. 4.6.4. End product ready to deliver.*

#### **Results reached**

- A new way of eco-friendly farming was developed.
- Up to 95% water saving compared to conventional farming was reached.
- Local production - no transport and reduced carbon footprint is provided to the neighbourhood.
- Growing in a controlled environment where each plant is adapted to the climatic conditions and has exactly the nutrients it needs.

#### **Adaptation possibilities for other settlements**

The adaptability of green containers makes them viable in various climates, including icy regions or deserts. Their portability and controlled environment technology allow for the cultivation of fresh produce regardless of the external conditions. This versatility opens the possibility of spreading such green container initiatives globally, ensuring fresh, local produce can be cultivated and enjoyed in diverse environments worldwide.

#### **More info on the best practice**

<https://www.herbafabrica.com/>  
[info@herbafabrica.com](mailto:info@herbafabrica.com)

#### 4.7. Green roofs – living roofs



The ZeS (Zelené střechy), which is part of the Association for the Establishment and Maintenance of Greenery, brings together organizations who are active in the field of gardening and landscaping and are professionally involved in the issue of greenery on structures, especially vegetated roofs.

In Tábor a twelve-storey residential building by GreenVille featuring an exemplary green roof was built. In Brno the Mendel University Halls of Residence with a successful green roof project by GreenTop was implemented. Also in Brno the Ombudsman's residence extension showcases a vertical green facade by CarlStahl. And in Jedovnice a secondary school with a green roof project implemented by GreenTop is representing excellent investment.

**Fig. 4.7.1. Tábor, Brno and Jedovnice, the Czech Republic, and the V4 countries**



**Fig. 4.7.2. Green roofed urban environment.**

Green roofs and vertical green facades are gaining momentum as sustainable and environmentally friendly practices in urban development. The exemplary project in Tábor, a twelve-storey residential building by GreenVille, showcases the successful implementation of a green roof. GreenVille's commitment to environmental responsibility has transformed the building into a green oasis, providing numerous benefits such as improved insulation, reduced storm water runoff, and enhanced biodiversity.

Similarly, Mendel University Halls of Residence in Brno, executed by GreenTop, exemplifies the positive impact of green roofs. By incorporating lush vegetation atop the building, GreenTop not only contributes to energy efficiency but also creates a pleasant and aesthetically pleasing environment for the residents. This project serves as a model for integrating sustainable practices into residential architecture.



Furthermore, GreenTop's green roof on the secondary school in Jedovnice showcases the versatility of this environmentally conscious design. By incorporating greenery into educational institutions, GreenTop promotes eco-awareness among students while mitigating the urban heat island effect. These projects align with the "Nová zelená úsporám" subsidy program, aimed at reducing energy consumption in family and apartment buildings. The initiative encourages the renovation and construction of low-energy residential structures. The substantial funding from various sources, including the EU Recovery and Resilience Facility, the Modernisation Fund, and the proceeds from EU emission allowance auctions, demonstrates a concerted effort to support sustainable initiatives. Under this program, the green roof subsidy, fixed at 800 CZK/m<sup>2</sup>, incentivizes the widespread adoption of green roofs and vertical green facades. The financial support provided by the subsidy program empowers individuals and organizations to contribute to energy savings and environmental conservation.



**Fig. 4.7.3. Extensive green roof.**

### **Innovative and excellent elements of the best practice**

These initiatives are geared towards promoting environmental sustainability and energy efficiency in urban areas. They include the promotion of green roofs and the reintroduction of greenery to settlements to enhance environmental protection and biodiversity. Additionally, photovoltaic panels cooled by plants are being implemented to increase their output by approximately 10%. The "nová zelená úsporám" subsidy program for energy savings encourages the adoption of environmentally friendly practices in buildings. Efforts are also underway to make buildings more environmentally friendly, thereby contributing to energy efficiency and sustainability. Furthermore, initiatives aimed at enhancing biodiversity and effectively managing storm water seek to mitigate environmental impacts and promote ecological balance.

### **Methods used to involve the community**

To involve the community in green roof projects, organizers use methods like community workshops, education programs, interactive design sessions, surveys, partnerships with local organizations, information campaigns, demonstration projects, advisory boards, and celebration events. These approaches ensure residents are engaged, informed, and contribute to the success of the initiatives.



## Results reached

- These initiatives are aimed at enhancing sustainability and improving living conditions in settlements. They include restoring greenery to settlements to promote environmental balance, implementing rainwater harvesting to conserve water resources, and installing active thermal insulation for houses to enhance energy efficiency.
- Measures are also being taken to absorb heat energy and protect roofs from adverse weather conditions, reducing air conditioning requirements by up to 75% to minimize energy consumption.
- Additionally, efforts to reduce noise and dust pollution aim to create a healthier environment, while promoting biodiversity enriches ecosystems and positive impacts human well-being. Increasing humidity and creating a favourable microclimate for improved comfort, establishing community gardens to foster a sense of community and promote local food production, and installing photovoltaic power plants to generate renewable energy and reduce reliance on fossil fuels are also part of these initiatives.

## Adaptation possibilities for other settlements

Green roofs are versatile solutions suitable for family houses, urban areas, schools, and shopping centers. Integrating them in these diverse settings serves to raise awareness about environmental sustainability. In family houses, they enhance aesthetics and reduce energy consumption. In urban areas, green roofs combat the urban heat island effect, improving air quality and biodiversity. Schools benefit by providing an educational example of environmental stewardship, and green roofs in shopping centers amplify visibility, encouraging eco-friendly practices. Essential to their success is the careful selection of local weather-appropriate plants, ensuring resilience and sustainability.

## More info on the best practice

<https://www.zelenestrechy.info/>

[zelenestrechy@szuz.cz](mailto:zelenestrechy@szuz.cz)

<https://www.greenville.cz/>

[cechy@greenville.cz](mailto:cechy@greenville.cz)

<https://novazelenausporam.cz/>

#### 4.8. Planting trees in cities as a path to sustainability



The initiatives "Zastromuj Prahu" and "Sázíme budoucnost" stand as exemplary models for urban forestry in the Czech Republic. "Zastromuj Prahu," committed to planting a million trees in Prague within eight years, has already planted over 500,000 trees in just four years. Meanwhile, "Sázíme budoucnost" aims to plant 10 million trees across the country, promoting a strategic approach by engaging various stakeholders, innovating in financing, and emphasizing long-term care and education. These initiatives showcase a collective effort to enhance urban greenery, mitigate climate challenges, and foster sustainable, resilient cities.

**Fig. 4.8.1. the Czech Republic, of the V4 countries**



**Fig. 4.8.2. Promo poster for "Zastromuj Prahu" – the greening of Prague by trees.**

"Sázíme budoucnost" and "Zastromuj Prahu" stand as commendable best practices in urban forestry in the Czech Republic, each offering unique insights into sustainable tree planting.

"Sázíme budoucnost," with its ambitious goal of planting 10 million trees outside forests, showcases an innovative funding model. By blending public, private, and non-profit sources, the initiative ensures financial accessibility and transparency. This approach democratizes participation and allows for a strategic allocation of resources. This project has been financed for a long time by initiatives of the City of Pilsen, the VIA Foundation, Škoda stromky and foundations of large companies such as ČEZ, O2 or Tipsport. The interdisciplinary engagement of communities, businesses, and governmental bodies underscores a comprehensive strategy for sustainable urban forestry. However, the initiative also recognizes potential challenges, particularly in the long-term maintenance of the planted trees, emphasizing the need for ongoing care to ensure their resilience.



On the other hand, "Zastromuj Prazu" focuses on planting a million trees in Prague this initiative exemplifies an impactful and expedited approach. Its success lies in the strategic selection of tree species, an interdisciplinary strategy involving various stakeholders, and a commitment to continuous care. Notably, "Zastromuj Prazu" acknowledges the importance of monitoring potential side effects, such as the risk of insufficient post-planting care, which could compromise the health and longevity of the urban forest.

### **Innovative and excellent elements of the best practice**

The significance of tree planting initiatives like "Sázíme budoucnost" and "Zastromuj Prazu" extends beyond their immediate goals, highlighting the vital role that trees play in urban environments. Trees in cities are essential for several reasons.

Firstly, they serve as natural climate regulators, providing shade and cooling urban areas. This is particularly crucial as cities experience rising temperatures due to climate change. The strategic placement of trees in initiatives like "Zastromuj Prazu" helps mitigate the urban heat island effect, making cities more habitable.

Secondly, urban trees contribute to improved air quality by absorbing pollutants and releasing oxygen. In densely populated areas, such as Prague, initiatives focusing on tree planting become crucial for combating air pollution and promoting healthier living conditions.

Moreover, trees enhance the aesthetic appeal of cities, contributing to a sense of well-being and quality of life. The visual and psychological impact of green spaces, as exemplified by the tree-lined streets in initiatives like "Sázíme budoucnost," fosters a more pleasant urban environment.

Biodiversity conservation is another critical aspect. Trees provide habitats for various species, supporting urban ecosystems. Initiatives recognizing the importance of diverse species, such as "Sázíme budoucnost," contribute to the overall resilience and ecological balance of urban areas.



**Fig. 4.8.3. Participants are planting trees to reach a more green and liveable environment.**

### **Methods used to involve the community**

The success of "Sázíme budoucnost" and "Zastromuj Prazu" lies in their effective community involvement strategies. These initiatives prioritize public awareness campaigns, utilizing social media, traditional media, and community events to inform

and educate residents about the importance of tree planting. Workshops and seminars provide platforms for direct interaction, allowing community members to voice concerns and ideas, fostering a sense of shared responsibility.

Interactive mapping and reporting systems empower residents to identify planting locations and report on tree conditions, contributing to ongoing monitoring. Volunteer programs, including community tree planting events, create a tangible connection between individuals and the project, fostering ownership and pride. Partnerships with local organizations and collaboration with schools enhance outreach by leveraging existing community networks.

Educational programs targeted at schools play a vital role, instilling a sense of environmental stewardship in the younger generation. These multifaceted community involvement methods not only

raise awareness but also actively engage residents in the tree planting process, ensuring the success and sustainability of these urban forestry initiatives.

**Fig. 4.8.4. Planting trees along an agricultural field.**



### Results reached

- "Sázíme budoucnost" and "Zastromuj Prahu" have achieved significant milestones in their efforts to enhance urban greenery. "Zastromuj Prahu" stands out with over 500,000 trees successfully planted in Prague within four years, marking substantial progress toward its goal. Meanwhile, "Sázíme budoucnost" ambitiously aspires to plant 10 million trees across the Czech Republic.
- The impact of these initiatives is evident in the increased green cover across city centres and suburban areas, contributing to improved aesthetics, biodiversity, and a more pleasant urban environment. Both projects have successfully engaged communities through awareness campaigns, workshops, and volunteer programs, fostering a sense of community ownership and environmental stewardship.
- The positive environmental impact is notable, with the initiatives mitigating the urban heat island effect, improving air quality, and contributing to overall ecological resilience. Trees, acting as natural climate regulators, play a crucial role in creating healthier and more sustainable urban ecosystems.
- Additionally, the educational programs implemented by these initiatives have raised awareness about the importance of trees and environmental conservation, particularly among the younger generation. The success of their innovative funding models, combining public, private, and non-profit sources, not only ensures financial sustainability for the projects but also sets an example for future urban forestry endeavours. A good example would be Prague's Ústavní Primary School and Kindergarten, which organised a project to plant 1,200 trees for its pupils in 2022.

### Adaptation possibilities for other settlements

The success of initiatives like "Sázíme budoucnost" and "Zastromuj Prahu" underscores the increasing need for tree planting in large cities. Beyond enhancing aesthetics, urban greenery plays a pivotal role in mitigating the urban heat island effect, improving air quality, and fostering biodiversity. The adaptability of these initiatives lies in recognizing the unique challenges of urban environments and tailoring strategies to address them. As large cities grapple with climate change and population growth, replicating such tree planting efforts becomes crucial for creating healthier, more sustainable, and liveable urban spaces.

### More info on the best practice

<https://zastromujprahu.cz/index.html#features11-n>

<https://www.sazimebudoucnost.cz/cs/o-nas>

[sazimebudoucnost@nap.cz](mailto:sazimebudoucnost@nap.cz)

[info@zastromujprahu.cz](mailto:info@zastromujprahu.cz)



## 4.9. Straw passive buildings



**Fig. 4.9.1. Dobřejšovice, the Czech Republic, and the V4 countries**

In the town Dobřejšovice near Prague, a pioneering example of sustainable living has taken root. It lies about 18 km southeast of the centre of Prague and 6 km west of the town of Říčany. Approximately 1,300 inhabitants live in the village. The city has a massive population growth due to the closeness to Prague. In the period of 2001-2021 the settlement doubled its population. An expansive urban area growth yet is accompanied with good and sustainable solutions which integrates modern comfort with environmentally conscious technologies.

In the heart of Dobřejšovice, an award-winning eco-home has become a beacon of sustainable living. The recipient of the prestigious Energy Globe Award, this residence is a meticulous showcase of green innovation. Constructed over 2.5 years by a single individual, the house stands out not only for its architectural brilliance but also for its commitment to environmentally friendly technologies.

The dwelling, primarily built with 80 large-format straw bales, clay, and wood, boasts a 5 kWp photovoltaic power plant, providing both electricity and heat. Rainwater harvesting is a key feature, minimizing water consumption and contributing to the house's self-sufficiency.



The implementation of a wood-burning insert as an additional heat source underlines the commitment to renewable energy.

**Fig. 4.9.2. Straw house as a passive building**

The house's passive design, combined with unique features like a sedum-covered vegetative roof and a glazed southern wall, contributes to its energy efficiency. The use of sustainable materials extends to the interior, with clay plaster, and handcrafted furniture creating a warm, inviting atmosphere. This residence not only represents a feat in green construction but also serves as a valuable educational resource. Dobřejšovice's eco-home stands as a shining example of how numbers, awards, and cutting-edge technologies can converge to create a sustainable dwelling for the future.

### **Innovative and excellent elements of the best practice**

This house incorporates innovative features to enhance energy efficiency and minimize environmental impact. These include the use of 80 large-format straw bales for wall construction, maximizing insulation and reducing the environmental footprint. Designed to passive house standards, the house harnesses natural elements like sunlight and wind for energy efficiency. A glazed southern wall proactively enhances passive solar heating and natural light. Additionally, a sedum-covered vegetative



roof improves insulation and manages storm water runoff. The house also features a 5 kWp photovoltaic power plant for sustainable electricity generation, as well as rainwater harvesting systems to collect and utilize rainwater. A wood-burning insert provides supplementary heating, supporting renewable energy efforts. Natural materials like clay plaster and handcrafted furniture create a healthy and aesthetically pleasing indoor environment.



*Fig. 4.9.3. Traditional design but innovative and green building method.*

### **Methods used to involve the community**

Jan Chvátal's solo construction of an award-winning eco-home in Dobřejovice over 2.5 years is not just a personal achievement; it's deeply connected to the community. Through events, workshops, and online platforms, he actively involved and educated community members about sustainability. Seeking feedback and collaboration, he made the community integral to decision-making. Collaborating with local schools engaged students, fostering community pride. Jan's self-built eco-home is a communal endeavor, inspiring the community towards environmentally conscious living. His story showcases the impact of an individual's commitment, influencing and empowering others in sustainable practices.

## Results reached

- Jan Chvátal's dedication and hands-on effort culminated in the creation of an outstanding eco-home in Dobřejovice. This sustainable residence, constructed primarily from 80 straw bales, clay, and wood, has achieved remarkable recognition, winning the prestigious Energy Globe Award. Notably, it stands as one of the first passive houses in the Czech Republic, showcasing a pioneering approach to energy efficiency.
- The materials used in the construction are a testament to Jan's commitment to sustainability. The incorporation of straw, clay, and wood not only provides exceptional insulation and structural integrity but also minimizes the ecological footprint of the dwelling. This eco-home has become a shining example of how innovative construction methods and environmentally conscious materials can be seamlessly integrated to create a sustainable living space.
- Beyond being an award-winning architectural achievement, Jan Chvátal's eco-home serves as an inspiration for the community and beyond, illustrating the transformative impact that sustainable choices can have on the built environment. It is a pioneering step towards a greener future, demonstrating that even in the construction of one's home, choices matter and can contribute to a more environmentally conscious and sustainable world.



*Fig. 4.9.4. Passive house ready for living*

### **Adaptation possibilities for other settlements**

The successful integration of passive design principles in this residence, earning it the Energy Globe Award, highlights the adaptability of such approaches for other settlements. The community, influenced by Jan's story, may explore the incorporation of these materials and energy-efficient techniques in

their own homes, contributing to a more sustainable living environment.

As one of the first passive houses in the Czech Republic, Jan's eco-home sets a precedent for the future. Its success suggests that sustainable construction practices can be practical, efficient, and aesthetically pleasing. By promoting the use of eco-friendly materials and passive design, the hope is that such initiatives will become more common, fostering a shift towards environmentally conscious building practices. The eco-home's story serves as a catalyst for change, encouraging a vision where passive houses are not only common but integral to the future of sustainable living.

### **More info on the best practice**

[chvataljan@seznam.cz](mailto:chvataljan@seznam.cz)

<http://www.slamacek.cz>



#### 4.10. MIWA - Zero Waste shops in the Czech republic



**Fig. 4.10.1. The Czech republic, of the V4 countries**

Established in 2014, MIWA is a Czech company at the forefront of transforming bulk sales through its innovative approach. With a focus on reusable smart capsules, MIWA is dedicated to making packaging-free shopping the norm. The company, rooted in the Czech republic, also extends its impact internationally with stores in Switzerland and Paris. Committed to environmental responsibility, MIWA carefully selects materials for safety and recyclability. Noteworthy projects, like the Bulk Management System, have resulted in a remarkable 71% reduction in environmental impact. Beyond retail, MIWA serves as a dynamic space that combines a store with an educational center, encouraging individuals to explore sustainable solutions and minimize waste in their daily lives.

Zero waste is an eco-conscious lifestyle that aims to minimize waste generation by following the principles of refusing, reducing, reusing, recycling, and composting. It encourages individuals to say no to unnecessary items, choose products with minimal packaging, and prioritize reusables. Composting organic waste is also a key component. Beyond personal choices, the zero waste movement is gaining traction in businesses, urging them to rethink production processes and adopt sustainable practices. While achieving absolute zero waste may be challenging, the focus is on continuous improvement and a shift towards a more sustainable and circular economy.



**Fig. 4.10.2. MIVA shop interior for a package-free shop.**



MIWA, a zero waste Czech company, has become a symbol of excellence in sustainable retail practices. At its core, MIWA has successfully modernized bulk sales by introducing a ground-breaking system of reusable smart capsules. This innovative approach, developed since 2014, not only aligns with the company's vision of making packaging-free shopping commonplace but also sets a benchmark for best practices in environmental responsibility.

One of MIWA's standout initiatives is the development and implementation of the Bulk Management System (BMS). This system, leveraging smart technology, addresses both logistical and hygienic requirements of modern retail chains, ensuring a seamless and efficient process for both consumers and businesses. The BMS not only facilitates packaging-free sales but also encompasses information technology to manage the transport, storage, and sale of goods.

MIWA's commitment to responsible material choices underscores its dedication to safety, durability, and recyclability. All components, from the innovative smart capsules to the supporting stands, are designed for prolonged reuse, with a focus on hygiene and safety. At the end of their lifecycle, these materials are meticulously recycled, contributing to a sustainable and circular approach.

Moreover, MIWA has expanded its impact beyond the borders of the Czech Republic. With operational stores in Switzerland and Paris, the company has demonstrated the scalability and global relevance of its best practices in sustainable retail. This international presence not only showcases MIWA's success on a broader stage but also emphasizes its commitment to influencing positive change in the retail landscape worldwide.



**Fig. 4.10.3.** The signs labelling the shop isles „free from package”.

MIWA's projects, funded in part by the European Union through various programs, have achieved remarkable results. A life cycle analysis conducted in 2018 by experts from the University of Chemistry and Technology revealed a staggering 71% reduction in environmental impact compared to conventional food distribution in disposable packaging.

Beyond its role as a retailer, MIWA serves as a dynamic space that combines a store with an educational centre. Through workshops, lectures, and discussions, MIWA actively engages with the community, promoting a deeper understanding of sustainable practices and encouraging individuals to adopt eco-friendly habits in their daily lives

In essence, MIWA's best practices encapsulate a holistic and forward-thinking approach to sustainable retail, from innovative product design to international expansion and community engagement. The company stands as a shining example of how environmental responsibility can be seamlessly integrated into modern business models, setting a high standard for the industry.

### Methods used to involve the community

MIWA actively involves the community through educational events, partnerships with local organizations, customer engagement programs, social media campaigns, interactive displays at MIWA stores, inclusive communication, local sponsorships, community feedback forums, and demonstration projects. These efforts create a shared sense of responsibility and encourage community members to embrace sustainable practices in their daily lives.



*Fig. 4.10.3. Customer purchases selected product.*

### Innovative and excellent elements of the best practice

MIWA employs a range of strategies to promote sustainability and reduce environmental impact in retail. These include the use of Reusable Smart Capsules for packaging-free shopping, minimizing waste and encouraging environmental awareness. The Bulk Management System (BMS) integrates with modern retail chains, ensuring efficiency and hygiene while reducing packaging waste. MIWA's successful expansion into international markets like Switzerland and Paris highlights the scalability and global relevance of its sustainable retail model. The company is committed to choosing materials based on safety, durability, and recyclability, prioritizing responsible materials. Life Cycle Analysis (LCA) conducted in partnership with experts from the University of Chemistry and Technology in 2018 revealed a significant 71% reduction in environmental impact. MIWA also collaborates with the EU for funding and support, fostering innovation and sustainability in retail practices.



## Results reached

- MIWA Technologies is gaining recognition for its innovative approach to sustainable retail. The company's commitment to packaging-free shopping positions it as a potential leader in eco-innovation.
- As the zero-waste movement grows, MIWA has the opportunity to become a popular solution for waste reduction, contributing to a more sustainable future. Additionally, MIWA's focus on minimizing packaging aligns with addressing broader issues like food waste, making it a promising choice for environmentally conscious consumers.

## Adaptation possibilities for other settlements

MIWA Technologies, a leader in packaging-free retail, has successfully expanded internationally, showcasing the adaptability of its model. Other settlements can leverage MIWA's success by prioritizing educational initiatives, mirroring diverse product offerings, embracing online services, and emphasizing local adaptation.

Educationally, hosting workshops and informative sessions aligns with MIWA's approach, fostering community engagement and raising awareness about sustainable living. Diversifying product ranges, as seen with Nebaleno, enhances customer experiences, extending beyond food items to include natural cosmetics and eco-friendly goods.

Online services, exemplified by Nebaleno's e-shop, add customer convenience, and initiatives like container lending during delivery reinforce sustainable cycles. Emphasizing local products, as demonstrated by Neobaleno, resonates with community preferences and supports regional producers. Transparency, inspired by Bezobalový obchod Brno, is vital, ensuring customers are well-informed about their choices. Continuous expansion, seen with Nasyp.si, keeps packaging-free shops dynamic, regularly updating product ranges and providing price lists.

In essence, MIWA's success, along with existing packaging-free shops in Prague and Brno, signals the potential for these models to become widespread solutions for waste reduction and sustainable living in various settlements.

## More info on the best practice

miwa@miwa.eu +420 778 771 716



#### 4.11. Budakeszi Fairy gardens - genebanks of indigenous fruit trees



**Fig. 4.11.1. Budakeszi, Hungary, and the V4 countries**

Budakeszi (German: Wudigess or Wudigeß) is a town in Pest County, in the Budapest metropolitan area, Hungary. A popular recreational area, [citation needed] the landscape is characterized by forests, predominantly oaks, by vineyards and by orchards.

The so called „Fairy gardens” despite its name, are not a place for magical creatures, but unique and valuable, native vegetation, cultivated plants, mainly trees. The fairy garden is an orchard with a collection of different species of fruit trees. The fairy gardens are modern approached gene banks, which help preserve the genetic diversity of a given area. The idea came from a farmer from Zala county, Hungary, Gyula Kovács, who started to collect nowadays rare, but formerly relatively common, locally used fruiting trees and plants in the 1980’s. During the last 40 years he increased his collection up to 2000 different species, until in 2013 the initiative found followers in more than 30

communities, which counts over 100 as today.

The turning point for his movement was when the Pilis Forestry Ltd. joined the movement and established, primarily, 1 hectare of orchard, later extended to 3 hectares in the Budakeszi area of the Pilis Forestry situated in the vicinity of Budapest. Professionals planted apples, pears, cherries and plums, and quinces and hawthorns were scattered at the end of some rows and fenced off with game nets. The Pilis Forestry Ltd. is in close cooperation with the original fairy garden of Pórszombat.

The program was founded by the European Union's gene conservation tender, thanks to which it received support for the maintenance of 193 tree varieties over the period of 5 years. In 2016 another founding was provided from the same gene conservation funds. Still, the maintenance of an orchard can be very costly and demands professional care, which is also time- and money consuming.



**Fig. 4.11.2. Collecting fruit varieties. Source: Budakeszi Tündéerkert webpage**

### Interdisciplinary approach

Creating a fairy garden definitely results in increased biodiversity, and the different species attract various beneficial insects, birds, and other organisms, contributing to a more diverse ecosystem within the orchard. Pollination can be boosted in the area with having diverse species. The timing of flowering differs significantly among species; it could potentially extend the pollinator activity. Planting various species can confuse pests and reduce the likelihood of large-scale infestations.

### Risk and threats for maintenance

The increased availability of fruits will attract pollinators but also wild fauna can result in many breaks which might damage the different species. Also human vandalism should evolve if the remote fairy areas are not well observed, which also might end up in damage of the trees and fruiting plants.

Managing an orchard with multiple species may require more careful planning and attention compared to a monoculture. Different species may have different pruning, fertilisation, and harvesting requirements, adding to the complexity of orchard management. Certain pests may target multiple species within the orchard, but large-scale infestation may not occur due to the diverse culture.

Due to the climate change in some cases the species may need extensive water intake in periods, which can threaten the fruiting process or decrease the production, or even lead to drying out. But not only drought, but excess water and the irregular precipitation might damage the species through rotting and fungal infections. Due to the changing weather conditions, unfortunately cold or icy nights and dawns can damage flowers and hinder flowering and the later fruiting.

Despite the collection of propagating materials, not all of the branches collected will successfully sprout. It is estimated that about two-thirds of the collected branches can successfully thrive in the fairy gardens, but this rate can be lower depending on the type of the variety, the weather and many circumstances. It is very hard to predict what is going to be the “success rate”.



*Fig. 4.11.3. Newly planted orchard. Source: Budakeszi Tündérvkert webpage*



## Methods used to involve the community

In 2013, in the Zsámbék Basin - where ethnic Swabians cultivated gardens - a call was made to revive old varieties, in the first year, 259 different branches were collected, and ever since the call is alive, in 2014, 2015, and 2016 propagating material was collected. The varieties of these trees are often unknown because they were mostly planted by the old Swabian residents, who were deported after the WWII. or died already.

Pilis Forestry has a cooperation agreement with the ÖkoForrás Foundation, and together they organise joint lectures, practical demonstrations, and educational sessions. These events take place at locations such as the Budakeszi Wildlife Park and the Budakeszi Fairy Garden, where regular pruning demonstrations are also held. Several members of the ÖkoForrás Foundation are also involved in collecting information on the characteristics of varieties and recording data. Pilis Forestry and the ÖkoForrás Foundation annually welcomes enthusiasts of the art of tree pruning to the Fairy Garden of Budakeszi Forestry where specialists showcase practical pruning exercises and the programme is open to the public free of charge. The forestry is regularly visited by students from the MATE University for practical training sessions. They aim to transform their Fairy Garden into an educational and scientific hub in the future.

## Results reached

- The initiative of the fairy gardens are fighting against the harmful trend of simplification of consumption and the biodegradation of traditional fruiting species. This caused 75% of previously available fruit types have disappear from the market during the twentieth century, and in the case of domestic Hungarian and Carpathian-basin originated traditional fruit varieties it can reach up to 90%.
- The collection itself holds value, but the usability of the fruits is also interesting. The forestry is planning to establish a drying facility and intends to produce natural juice as well. Fairy Garden turned into an educational and scientific hub in the recent decade with constant data collection and educational training.
- The program aimed at conserving agricultural and food industry genetic resources concerning the preservation of native fruit varieties in the Carpathian Basin. Since then, various civil organisations, as well as professional and religious institutions, have supported this endeavour.
- So far, 27 parishes, churches, kindergartens, schools, and local governments have joined the agreement. More than 220 species were collected.
- Currently, there are over a hundred Fairy Gardens flourishing across the country, and even more throughout the entire Carpathian Basin.

## Adaptation possibilities for other settlements

Fruit trees can be planted in orchards, or not in a closed garden, but in the city centre. Practically all of the trees can have a caretaker or adopter, a caregiver; most of them are locals or residents from the surrounding areas, this helps the maintenance.

## More info on the best practice

URL: <https://www.xn--tndrkertek-d7a9t.hu/>

<https://parkerdo.hu/termeszetvedelem/termeszetvedelem-a-parkerdoben/tunderkertek-az-oshonos-gyumolcsfak-genbankjai/>

Contact person: Kovács Gyula

Phone number/Email /LinkedIn: 06 30 235 1063, [tunderkertek@gmail.com](mailto:tunderkertek@gmail.com)

## 4.12. Szeged Citizen Assembly



**Fig. 4.12.1. Szeged, Hungary, and the V4 countries**

Szeged is the third largest city of Hungary, the largest city and regional centre of the Southern Great Plain. Szeged is situated near the southern border of Hungary, just to the south of the mouth of the Maros River, on both banks of the Tisza River, nearly in the centre of the Carpathian Basin.

The event titled "The First Citizen Assembly in Szeged within the Framework of the SZTE Phoenix H2020 Project" took place on January 12-13, 2024, at the Szegedi Szent-Györgyi Agóra Informatórium. The event was organized in partnership with the Szeged Municipality (Szeged MJV) and Enrawell Consulting Ltd., as part of the SZTE Phoenix H2020 project.

The goal of the project is to bring public opinions closer to decision-making processes across Europe and involve citizens in local decision-making affecting cities and regions. The first citizen assembly in Szeged, among the consortium partners, addressed three policy areas – transportation,

waste management, and the management of urban heat islands through green spaces – along with a comprehensive, horizontal theme public awareness. The Szeged citizens or university citizens spending their everyday lives in Szeged participated in the citizen assembly and collectively deliberated on the main issues within these topics and their potential solutions. The selection of these topics was influenced by a foundational event series held in the summer and fall of 2023, known as the Territorial Planning Platform Szeged (TCCD), where knowledgeable civilians familiar with everyday life in Szeged, delegates from urban companies, and representatives from associations participated. They were the ones who, out of more than 30 problem areas, ultimately chose the four relevant ones for discussion.

**Fig. 4.12.2. Work in progress. Source: Szeged Citizen Assmebly**

During the citizen assembly, participants worked in three rounds, using deliberative, negotiation-based methods. They identified problems, ranked the most significant ones, and then developed proposals for solutions. The results were presented, discussed, and collectively reviewed. The event concluded with online voting, allowing participants to cast their votes in real-time. During the citizen



assembly, participants worked in 3x3 stages, always following the same schedule but employing different deliberative, negotiation-based, and discussion-based methods. In four groups, participants initially identified the problems, then ranked the most important ones to select those worth addressing. Subsequently, the elaboration of the topics for solving the problems took place, and finally, precise investment and intervention proposals were formulated. The results of the four groups were presented sequentially, and they were collectively reviewed and opposed. The ultimate closing vote took place based on the ranking established by the participants for the work of the four teams.



The project was financed with the support of the European Union through the Phoenix project, with a total cost of nearly 10 million Forints (26.000 EUR). The entire cost was covered by the H2020 project through SZTE. The financing played an important role in providing participants with daily allowances, accommodations, as well as necessary tools for discussions, and some travel gifts.

### Innovative and excellent elements of the best practice

Citizen assembly have not been held in Szeged before, and the implementation of community ideas has not yet been channelled into urban decision-making. The deputy mayor for urban development, was closely monitoring the event and its outcomes. The project's experts will provide continuous updates on the results during the spring. The utilization of the results depends on the openness of the city, but communication is ongoing, ensuring that the developed programs or certain elements of them will be utilized in some way.



**Fig. 4.12.3. Tools ready for consultation. Source: Szeged Citizen Assembly**

### Methods used to involve the community

Participants were selected using a selection method that adheres to statistical and sociological criteria; a total of 1040 households were invited to participate in the first round by the organizers. In the second round, university citizens and all active residents of Szeged who wish to contribute to the city were invited through the power of social media. The event, run with a total of 50 participants, is only the first step. Participants can join the work of the Territorial Planning Platform Szeged (TCCD) created by the project and represent their interests during presentation sessions.

The organizers of the event emphasized that although participants dedicate their Friday afternoon and Saturday not to leisure but to "work," they are doing it for the community's benefit. They highlighted that this is not really work but rather a collective creative

process, a joint thinking endeavour. The program was voluntary, and the results and the outcome of the event depend solely on the participants. Therefore, mutual respect is essential in the collaborative planning process.

### Results reached

- The transportation topic employed a future-oriented approach, asking participants to identify major issues and envision a positive future for Szeged ten years from now. In the case of transportation, the applied method was the „**Future Scenarios Tool**“. Participants were asked to identify the main problems and create a positive vision for Szeged, as it would exist ten years from now, eliminating these issues. The four teams took different approaches. Some emphasized the Tisza River's connecting role and aimed for its better utilization. However, there were groups suggesting territorial traffic restrictions or car-free zones in certain areas of the city under the "Quiet Downtown" program. There was a team which proposed the establishment of a new and free P+R system along with a city traffic reporting application.
- For the development of urban green spaces, a card game was used to engage participants in the planning process. The four designated areas received conceptual plans, and innovative ideas were proposed, such as creating rain gardens, green facades, or roof gardens. The participants used the so called „**Ecosystem Toolkit**“ adapted to the Szeged region and its specific features. The

development of urban green areas was approached from four different perspectives by the four working groups, aided by a card game jointly developed at the location by the team specializing in urban development from the Department of Economic and Social Geography of the Institute of Geosciences at the University of Szeged, in collaboration with colleagues from the architectural department of the University of Florence. Within the framework of the game, participants had to select so-called green functions and ecosystem services for an underutilized public area in Szeged that they defined. Subsequently, they had to play "action cards" for these areas, representing various green investments such as small-scale rain gardens, green facades or roofs, or even compost points. A total of four areas were delineated, for which participants, with the assistance of facilitators at the tables, developed conceptual plans during the ongoing work. This resulted in the development concept for green transportation tools, community functions through collaborative planning involving the community.

- The final stage focused on waste management, with participants agreeing that while there are manageable local issues, the city is overall clean and organized. Therefore, unique solutions for identified problematic areas on the map and related public awareness campaigns were developed. Among the proposals, there was an emphasis on a campaign targeting burning waste, and its simple messages could be countered with artistic creations, such as comics. With the help of children, participants would reinforce recycling culture through art competitions. For instance, schoolchildren participating in the competition could design their own pictograms, and after manufacturing them, the selected pictograms would be placed on selective waste containers at their schools. The issue of dog excrement is an acute problem, but it rather brought moments of humour than frustration to the citizens of the community assembly. Alongside several innovative and almost provocative campaign elements, agreement was reached on increasing the authority of public space supervision and placing more waste containers.



*Fig. 4.12.4. Citizen presentation in progress. Source: Szeged Citizen Assembly*

### **Adaptation possibilities for other settlements**

It is important to have an organization that can be trusted and accepted by local residents beyond political affiliations, and that can collaborate with the locals to conduct such programme. Challenges can occur in ensuring diverse representation, potential bias or manipulation of opinions, and the need for specialized expertise. Organizing and sustaining assemblies can be resource-intensive, limited funding and staffing may restrict the capacity to meet the needs of all individuals. Political interference may undermine the integrity of an assembly. Implementation hurdles and resistance to change further complicate matters.

### **More info on the best practice**

URL: [www.kozossegygyules.eu](http://www.kozossegygyules.eu)

Contact person: Gyula NAGY

Phone number/E-mail/LinkedIn [geo.nagy.gyula@gmail.com](mailto:geo.nagy.gyula@gmail.com)



#### 4.13. Upland village flash flood risk management – Püspökszilágy



**Fig. 4.13.1. Püspökszilágy, Hungary, and the V4 countries**

Püspökszilágy is a village nearby the capital, Budapest. It is situated in a hilly area and the greater part of its territory is still occupied by continuous forests – mostly oak and shrubs. The settlement of Püspökszilágy in Cserhát is at increased risk from flash floods, but droughts are frequent in summer. Both cause significant damage to the settlement. The aim of the project is to address both problems through nature-based solutions. In Püspökszilágy, on the Szilágyi creek, which often causes flash floods, instead of faster drainage, emphasis was placed on slowing down runoff and conserving water. In the catchment area above the village, using international experience, seven leaking logs were built on intermittent gullies feeding the stream. The small dams were built of locally harvested timber with the aim of capturing sudden water and soil washed off the fields during a rainstorm and letting it go only slowly. In addition, four natural stone sediment traps were renovated. If such barriers are made in enough places, they will flatten the flood peak and prevent flooding. In addition, a side reservoir has been created next to the stream, in a wetland grove forest, which acts as a rain reservoir to absorb flood water and also acts as a wetland during the drier summer months.



**Fig. 4.13.2. Artificial waterfall by the dam of Püspökszilágy**

The development in Püspökszilágy was implemented within the framework of the LIFE MICACC project entitled "Strengthening the integrating and coordinating role of local governments for adaptation to climate change" (LIFE16 CCA/HU/000115) supported by the LIFE programme. The intervention in Püspökszilágy took two years. The design of the water retention solution took HUF 1.9 million, the permits cost HUF 585,000 and the construction cost HUF 42.7 million, of which 55% was financed by the EU, 40% by the Hungarian budget through the gesture of the Ministry of Interior and 5% by Püspökszilágy from its own resources.



**Fig. 4.13.3. Picturesque scenery by an artificial water collecting pond.**

Within the project, a side reservoir plays a crucial role in on-site water retention, covering a 3.7 km<sup>2</sup> catchment area. With a total usable volume of 5-5.4 thousand m<sup>3</sup> (averaging a 50 cm water column) at minimum expected groundwater levels, it effectively reduces flood peaks. Equipped with inlet and

drainage ditches, adjustable locks, and sediment trapping shafts, it prevents silting and ensures efficient operation. The reservoir, situated in meadow and pasture areas, integrates flood protection with ecological conservation. Ecological considerations include maintaining water flow, preserving biodiversity, protecting frog populations, and preventing algae growth. Continuous water change and refreshment maintain water quality, facilitated by control structures.

As an additional solution, leaking log dams were built above the settlement on erosion ditches flowing into the Szilágyi creek. The essence of these is that through the gap below them, small flows of water from the stream are allowed to flow unhindered. However, during flash floods, high water flows and the resulting sediment and drift are retained over the settlement, and the water is drained slowly in a controlled manner through the gap between the logs, thus flattening the flood peak. In addition, they have the advantage of being extremely cheap, especially since they were built using locally harvested timber. Their water retention capacity is a few per 100 m<sup>3</sup> dams, adding up to about 2000-3000 m<sup>3</sup>.

### **Innovative and excellent elements of the best practice**

The storage facility, operated by controlled locks, is able to provide habitat for a protected ecosystem at the same time, while ensuring rainwater retention. The log dams built on the erosion ditches of the Szilágyi Creek catchment area are built of natural, locally harvested timber and attenuate the flood peak of flash floods and their harmful consequences at low investment costs.

Results reached:

The small-scale water retention solutions implemented within the framework of the project (reservoir and log) contribute to stabilising groundwater levels, enable the utilisation of retained water, promote the conservation and development of biodiversity, result in a better microclimate, and at the same time create recreational opportunities.





**Fig. 4.13.4. Water retention system.**

#### Results reached

- **Climate change mitigation:** The most common problem in Püspökszilágy is the lack (drought) or excessive amount of water (flash floods, sediment). Finding and maintaining dynamic balance was most effectively achieved by integrating municipal and regional water management, as well as by keeping and utilising waters. A local water damage event caused by flash flooding has not occurred since the establishment of the system, and thanks to the reservoir, the effect of drought can be mitigated even in drought periods, and the microclimate develops favourably.
- **Biodiversity and ecosystem services:** Creating water retention adapted to local conditions also creates wetlands, helping to preserve biodiversity. The lake was created on the site of fresh, water-intensive, medium-natural habitats of the valley foothill, striving for the preservation of protected

plants and animals. According to the results of the monitoring carried out in Püspökszilágy, the area around the created lake has been landscaped, its slopes are steep, so the naturalness of the habitats decreased, and the number of certain species showed a temporary decrease. At the same time, constant water and beneficial changes in the microclimate constantly increase biodiversity. It can be seen from the post-intervention survey that a belt of reeds has slowly begun to form in the area of the new lake, mainly in the northern part of the lake, where there are two small green lakes, as well as in the coastal zone. The two smaller upper green lakes fantastically reduce nitrate content in the water and all impurities. The naturalness of the area is likely to improve further if properly managed, increasing biodiversity in the area in the long term (e.g. marsh turtle, egret, grey heron).

- **Social impacts:** Among the social impacts, the results of the project's awareness-raising among local stakeholders are important. The response from stakeholders was mixed at first, but eventually the people living here got to know it, loved it and accepted it. Residents of the surrounding settlements, hikers and groups arriving at the Leisure Centre located next to the reservoir also widely use the reservoir for rest.

#### Adaptation possibilities for other settlements

The solutions can be used anywhere mainly in hilly and mountainous areas. The more interventions are carried out, the more water retention can be increased and further positive effects will prevail.

#### More info on the best practice

Project website

Project website on the LIFE programme page

Official website of the Municipality of Püspökszilágy

#### Contact:

Mayor Sándor Tordai,

Krisztián Mészáros, river basin coordinator,

Zoltán Budai Climate Change Officer

#### 4.14. Rain gardens as examples of community building and sustainable urban development in Kecskemét, Hungary



**Fig. 4.14.1. Kecskemét, Hungary, and the V4 countries**

A rain garden is a depressed area in the landscape that collects rainwater, allowing it to soak into the ground and reducing runoff from surfaces such as roofs, driveways, or streets. By filtering out pollutants in runoff, rain gardens also contribute to improving water quality. Additionally, rain gardens provide food and shelter for butterflies, songbirds, and other wildlife, enhancing biodiversity in urban environments. Beyond their ecological benefits, rain gardens also improve the aesthetics of urban landscapes, adding visual appeal and contributing to a more pleasant environment for residents and visitors alike. A rain garden can either create a channel to an artificial depression or serve as an artificial depression itself. In this setup, water collects and enters the ground slowly, allowing for controlled absorption. The absorption process is facilitated by native plants with deep root systems or through soil amendments that enhance water infiltration. This controlled absorption helps prevent waterlogging and erosion while promoting groundwater recharge and supporting healthy plant growth within the rain garden.



**Fig. 4.14.2. Newly planted rain garden in Kecskemét. Source: Facebook**



**Fig. 4.14.3. Lush greenery by the condominium. Source: Facebook**

**Methods used to involve the community**

The process was co-financed. The costs associated with a do-it-yourself rain garden typically range from 1€ to 5€ per square meter. Therefore, for a rain garden spanning 100 to 400 square meters, the total cost would amount to approximately 100€ to 2,000€. These costs primarily cover materials needed for construction, such as soil, gravel, mulch, plants, and any necessary tools or equipment. It's worth noting that labour costs may vary depending on whether the project is completed independently or with professional assistance.

The necessity of cooperation and collective thinking for achieving results was emphasized, highlighting the importance of community involvement. The partnership between the local community and condominium residents was established, promoting collaboration and shared responsibility. Residents were actively encouraged to participate and contribute to the creation of the rain garden, fostering a sense of ownership and pride in the project. Additionally, locals were entrusted with the maintenance duties, designed to be low-effort, ensuring the project's sustainability and promoting long-term environmental stewardship within the community.



**Fig. 4.14.4. The new urban view with the rain garden. Source: Facebook**

**Risk and threats for maintenance**

While rain gardens offer various benefits, they may not be suitable for everyday use due to certain limitations. Over time, the soil in rain gardens can become compacted, particularly in areas with heavy foot traffic, which can hinder their effectiveness in managing storm water runoff.

Additionally, in hilly areas, erosion may eventually occur, compromising the structural integrity of the rain garden and potentially leading to soil loss. Furthermore, excessive rainfall can result in reduced soil oxygen levels within the rain garden, which can have detrimental effects on plant health. Root loss and rotting may occur, stifling the growth of plants and diminishing their overall vitality. Additionally, rain gardens may attract wildlife, including insects, which could potentially cause damage or frustration to people utilizing the area. Considering these factors, it's important to carefully assess

the suitability of rain gardens for specific locations and purposes, taking into account factors such as soil composition, drainage patterns, and anticipated usage. Proper maintenance and periodic assessment are essential for ensuring the long-term effectiveness and sustainability of rain garden installations.

Native plants are well-adapted to their local environments and typically do not require fertilization, as they are accustomed to the nutrient levels present in the soil. This characteristic reduces the need for ongoing fertilization efforts, contributing to the low-maintenance nature of rain gardens.

Maintenance of rain gardens planted with native species is generally considered minimal, thanks to the plants' resilience and ability to thrive without extensive human intervention. However, some upkeep tasks are still necessary. For example, periodic weeding may be required to control the growth of unwanted vegetation and ensure the health of native plants. Additionally, removing rubbish or debris that accumulates in the garden is necessary to maintain its aesthetic appeal and functionality. During dry periods, supplemental watering may be necessary to support the growth and survival of native plants in the rain garden. While native species are typically drought-tolerant once established, providing occasional irrigation during extended periods of drought can help ensure their continued health and vitality. Overall, while maintenance requirements for rain gardens planted with native species are relatively low compared to traditional gardens, some attention and care are still needed to ensure their long-term success.

### **Innovative excellent elements of the best practice**

In a post-socialist condominium environment or an underutilized public park, a 120 sqm rain garden could serve as an innovative solution to address various environmental challenges. In the condominium environment, where green spaces may be limited and their quality is very low, a rain garden could help manage storm water runoff from impermeable surfaces such as rooftops and parking lots. By collecting and filtering rainwater, it would mitigate flooding, improve water quality, and enhance the aesthetic appeal of the surroundings. It could contribute to creating more sustainable and resilient urban environments while fostering community engagement and appreciation for nature. Similarly, in an underutilized public park, a rain garden could transform an unused area into a vibrant and ecologically valuable space. It would provide habitat for local wildlife, promote biodiversity, and serve as an educational tool for residents and visitors about sustainable urban practices.

### **Results reached**

- The results were remarkably positive, significantly enhancing the previously dull and barren condominium environment.
- The abundance and vibrancy of the flora increased substantially within just one year, attracting further wildlife. The soil moisture content remained preserved in the long term, even during dry periods, while the issue of neighbouring basement flooding and water seepage from periodic heavy rainfall was resolved.
- The success of the initiative was so notable that rain garden implementations have since been initiated in several other cities, further increasing the number of green spaces and environmentally favourable surroundings.

### **Adaptation possibilities for other settlements**

Step-by-Step:

- Define the soil features (absorption, permeability)
- Define the shape of the rain garden according to:
  - Shape of the public space
  - Arrangement and distance of buildings
  - Position of gutters and channels
  - Type of building wall



- Choosing vegetation composition
- From inner to outer parts (wetland to arid / woody to herbaceous)
- Defining runoff directions
- Defining utility lines
- Constultation

There are several limitations to the implementation for rain gardens in different locations. Firstly, not all areas are suitable for a rain garden, as specific site characteristics must be met for optimal functionality. For instance, soil with too high a clay content may impede proper drainage and water infiltration, rendering the area unsuitable for a rain garden. Additionally, a minimum area of approximately 50-100 square meters is typically required to effectively capture and manage rainwater runoff. Areas with insufficient space may not be able to accommodate the necessary components of a rain garden, limiting their feasibility. Furthermore, if the area is situated on a steep slope, a rain garden may not be considered suitable. Steep slopes can pose challenges in terms of erosion control and water retention, potentially compromising the effectiveness of the rain garden in managing stormwater runoff.

### More info on the best practice

URL: <https://www.esokert.hu/>

Contact person: Farkas-Barta Kata

Phone number/E-mail/LinkedIn: esokert@gmail.com, +3620/361-7653



#### 4.15. Innovative water modelling and simulation planning for rainwater management concept and climate adaptation steps of Tát-Tokod settlements



**Fig. 4.15.1. Tát and Tokod, Hungary, and the V4 countries**

The results of climate observations and regional climate models suggest that the warming trend in Hungary will continue in the 21st century. The amount and distribution of precipitation changes. There is therefore a need for sound science-based knowledge to help develop adaptation strategies and support adaptation decisions. The aim of the Tát-Tokod pilot project was to increase resistance to the effects of climate change and to facilitate adaptation. In the settlements of Tát and Tokod, high groundwater levels, water bursts due to the cessation of mining and extreme, large amounts of precipitation are the main problems. The project managed these through investments based on innovative planning.

C3-8 The project received €776 074 from the EEA Funds. The project was funded by Iceland, Liechtenstein and Norway.

The pilot programme received funding within the framework of the European Economic Area Financial Mechanism 2009-2014 under call HU04-C3-2013 entitled "Adaptation to climate change". Project ID: EEA-



**Fig. 4.15.2. Solar panel fuelled public lighting.**

##### **Methods used to involve the community**

The project built both on the innovative 3D mathematical simulation software model and on the acknowledged practical experience of Hungarian water management experts for many decades, thus uniquely combining novel and traditional, practice-oriented approaches. The Norwegian project partner, Bioforsk, was the Norwegian Institute for Agricultural and Environmental Research. The institute conducts applied and targeted research in the fields of multipurpose agriculture and rural development, flora, environmental

protection and natural resource management.

From the beginning to the end of the project, the participating municipalities ensured the professional publicity of the work phases. In the case of Tát and Tokod, the most important platform for project publicity was the content update of municipal websites. This was complemented by the organisation of opening, mid-term and closing events open to the press.

##### **Innovative and excellent elements of the best practice**

The central innovative element of the project was the development and creation of a mathematical (simulation) model of the interacting processes in the urban river basin, sewerage network and receiver, incorporating the data generated by the data collection, survey and systematization activities. The model includes the effect of wastewater, rainwater and surface watercourses as well as



groundwater, therefore it greatly facilitates the fulfilment of water management tasks at municipal level. Accordingly, the licensing plans were developed on the basis of the mathematical model.

**Fig. 4.15.3. Groundwater well providing heat.**



### Results reached

- The project aimed to develop an integrated storm water management and infrastructure plan for the municipalities of Tát, Tokod, and Tokodaltaró. This involves creating a storm water concept plan and guide, conducting monitoring and model calibration, and simulating extreme precipitation scenarios. The objective was to offer comprehensive guidance for managing municipal rainwater, considering systemic effects and climate change. Collaborating with DHI Hungary Kft., the team formulated technical parameters for network reconstruction, protection measures, and adaptation strategies. Through foundational studies and data collection, they will inform future developments and ensure resilience against extreme weather events.
- Development of the monitoring plan and measurements, calibration of the model.
- Run different (extreme) precipitation event scenarios on a calibrated storm network model.
- Preparation of complex storm water management guide
- Foundational study in the area of Tát and Tokod (or the area of influence of its water system)
- Preparation of detailed data and network topology of the Tát-Tokod water system summarized in geographical, land-use and GIS systems
- Infrastructure elements implemented as a result of the innovative design process:
- Tát: Construction of the Village Bottom storm sewer. The drainage of rainwater was solved by the construction of the partly closed, partly open rainwater drainage system and by channelling the Unyi stream into the base gutter. Maintenance of the existing drainage system, ditch cleaning on a total of 12 km section, cleaning of closed storm water drainage systems, restoration of damaged trench paving slabs, which affected 31 streets of the settlement.
- Tokod: Renovation and maintenance works of storm water drainage infrastructure (renovation of drainage earth ditches) and construction of new drainage systems for glass factory condominiums

**Fig. 4.15.4. Solar panel farm in Újszilvás.**



### Adaptation possibilities for other settlements

The mathematical model developed in accordance with the objective of the project and the software modelling methodology can be a model for other settlements with similar topography and climate.

### More info on the best practice

#### Contacts

Parragi György, Tát City Municipality, +36-33-514-512, [www.tat.hu](http://www.tat.hu)

Pétervári József, Tokod Village Municipality, +36-33-505-110, [www.tokod.hu](http://www.tokod.hu)

#### 4.16. Groundwater-based automatic irrigation network in urban environment



**Fig. 4.16.1. Budapest, Hungary, and the V4 countries**

Since 2013, the XIII. District Municipality – first in Budapest – has built an automatic irrigation network for groundwater wells in public parks at 25 locations. With this, it has created and operates about 200 thousand m<sup>2</sup> of intensively maintained irrigated green space. The amount of groundwater used is about 140,000 m<sup>3</sup> per year. The "Angyalzöld 3.0" (Green Infrastructure Development Strategy of the District) sees green spaces as the solution to slow/hold back storm water runoff. One of the pillars of effective rainwater management is to increase the proportion of green areas with plant species that form a thin, ecological protective layer (Sedums and similar herbaceous plants). The choice of varieties of plants is in harmony with the irrigation network with soil wells. Other elements of water-retaining green areas: well-irrigation, flowered lawn, perennial bed with roadside desiccant ditch, geocellular tree planting. In the twenty-first century, the strategically most important and vital issue of mankind is the quantity, quality and availability of drinking water.

important and vital issue of mankind is the quantity, quality and availability of drinking water.



**Fig. 4.16.2. Watering system in action. Source: internet**

Future development plan is a development of a remote control and weather-appropriate programming of the irrigation network of parks. In addition to increasing biological diversity, reducing operating costs is also an important argument in increasing the proportion of perennial plant plantings on green areas and introducing the principles of ecological green

space management (flowering grasslands).

#### **Innovative and excellent elements of the best practice:**

The sustainable, efficient and cost-saving operating system of municipal climate resilience is the automatic irrigation network for groundwater wells. Instead of irrigation from the more expensive drinking water network, it exploits the potential of groundwater utilization and enables the increase of irrigated public green areas in an environmentally and cost-effective way.

#### **Results reached**

- The groundwater well irrigation system solves several environmental and economic challenges at once: The excavated groundwater is located above the uppermost aquifer, its level fluctuates, changing from season to season. It can only be used for irrigation due to leaching of surface dirt. A drilled well is a lined hole deepened into the ground using special drilling equipment, the depth of which is large relative to its diameter, ranging from a few meters to



120 meters. It is more suitable for watering vegetation than chlorinated tap water intended for human consumption, while replacing the use of drinking water for irrigation, thus saving a significant amount of drinking water. Even with pumps, its usage cost is a fraction of tap water. If the area supplied by 17 groundwater wells were irrigated with piped water, it would cost HUF 35 million per year.

- Most of the 17 groundwater wells in District XIII were established in the last 5 years. Their construction cost HUF 108 million, their annual maintenance (commissioning, maintenance, data provision) is HUF 25 million. Irrigation of the same area with live power (calculated 2 times a week during the growing season) would cost HUF 238 million, so the automatic groundwater well irrigation system is significantly more economically efficient due to the lower need for live labour.
- Another advantage of irrigation networks is that irrigation can be programmed, so it can take place during the night period that is most favourable for vegetation and least disturbs residential land use. For shrub and perennial surfaces, water-saving drip irrigation is used, which further reduces irrigation water requirements.
- With the help of groundwater-well irrigation networks, they can ensure the high-quality maintenance of the district's green areas even during summer and drought periods.



*Fig. 4.16.3. Vivid urban park watered by an innovative system. Source: internet*

#### **Adaptation possibilities for other settlements**

Groundwater well irrigation systems can be built in all settlements where significant groundwater can accumulate above the watertight layer of the soil as a result of the hydrological and soil mechanical conditions of the area. The efficiency of the solution can be further improved with the help of natural and built water retention structures, desiccants and cisterns by retaining rainwater, which is already a good example in other districts of Budapest.

#### **More info on the best practice:**

<https://www.budapest13.hu/2018/07/31/bevalt-talajvizes-automata-ontozohalozat/>

#### 4.17. Turning agricultural lot into a community orchard in Šamorín



**Fig. 4.17.1. Šamorín, Slovakia, and the V4 countries**

A local environmental organization DunaVit is active in nature preservation of the Rye Island region. For years, it has planted trees along dirt roads between agricultural lands to raise biodiversity and forested surface, implemented environmental education activities in classroom and in practice. In November 2023, whilst implementing one of their tree planting project in the agricultural landscape on the outskirts of the town, they decided to add up another element and extend the project by a community orchard. On a plot size 1000 m<sup>2</sup> belonging to Town Šamorín just nearby the newly planted windbreak they designated a lot belonging to the municipality to be a community orchard. A public call for involvement appeared on the website of Town Šamorín as well as on the organization’s social network channel at the end of October. From the citizens, 30 people responded to the call and „adopted” their tree. The trees were planted by the respondent citizens on November 4, 2023 (altogether 45

trees, some people „bought” more than 1 tree). The price of 1 tree was 20 EUR but they actually costed slightly more (the difference was covered by DunaVit). The orchard works as a community space because in reality no one has „his own tree” but by „buying” a tree they actually bought the right to enter the orchard and use it. The rules of use are laid down in an „ethical codex” set up by the organization. The orchard is in the open agricultural land and remained unfenced. Most of the costs were covered by the ongoing project of the organization (bought equipment in an overall value of 3500 EUR), additionally the organization added own contribution 436 EUR for the orchard trees (financing the real price of trees above 20 EUR) and the sum coming from the volunteers was 800 EUR. The project ended up with +45 trees above the planned and another patch of land was turned to tree-covered. The activity did require no further money from the donor.

**Fig. 4.17.2. New orchard in Šamorín.**

##### Risk and threats for maintenance

The site is in an open landscape for a longer walk from the city part Šámot. Potentially, theft and vandalism cannot be ruled but the project relies on the territory’s remoteness as well as the organization and volunteers presence and actual supervision.

The trees are bigger ones, though, they require regular watering in the first year or two after planting. According to the tree adoption call, the „adopting parents” have the obligation to water the trees but on a more regular basis the watering can partly be done by own resources and future grants.







*Fig. 4.17.3. Activists planting trees in Šamorín.*

#### Results reached:

- It was a first activity of the type „Buy your own” in a public call in Šamorín. Excellent element was by „selling” the trees, the organization created a community (for itself). Most of the people also chose to take part in the voluntary planting activity as well.
- A 1000 m<sup>2</sup> open community orchard was created
- 45 trees planted
- 30 volunteers contributed
- Deforested lot turned to orchard

#### More info on the best practice

<https://samorin.sk/hu/fogadj-orokbe-egy-gyomolcsfat-a-dunavit-polgari-tarsulas-felhivasa/> (HU)

<https://samorin.sk/adoptuj-si-ovocny-strom-vyzva-oz-dunavit/> (SK)

[www.dunavit.sk](http://www.dunavit.sk)

Contact person: Ing. László Tóth, +421 911 748 549

Phone number/E-mail/LinkedIn

[dunavitasamaria@gmail.com](mailto:dunavitasamaria@gmail.com), [dunavit@dunavit.sk](mailto:dunavit@dunavit.sk)

#### 4.18. 10000 trees for Bratislava



**Fig. 4.18.1. Bratislava, Slovakia, and the V4 countries**

The city of Bratislava launched a big initiative in 2019 – to create a greener city by planting at least 10.000 trees in Bratislava until 2022. The aim is to ensure the systematic replacement and sustainability of trees in this urban environment and help create a better micro-climate in the times of climate change.

The trees’ contribution to city environment is heat protection, raising the quality of air, help maintaining downpours, create shelter for different (animal) species and enhance the quality of urban environment. The priority is to plant bigger, older trees with trunk perimeter around 22-24 cm. Often, such trees can be very heavy, so in every case it is desirable to communicate the plan with the city council. Of course, the trees need professional care which the city is able to provide in terms of water as well as botany experts.



**4.18.2. The areas where trees were planted in Bratislava.**

The initiative calls on partners – individuals, companies, whoever – to take part. Anyone planting a tree on its own plot within Bratislava can become a partner and does not need to ask, just register. However, if someone wants to plant on city lands, planting is possible solely with the agreement of the city. In this case the volunteer gets all kinds of help to get involved.

There are several ways of getting involved in this initiative – as a partner, as a volunteer, as a sponsor. Volunteers do active planting in organized weekend workshops in autumn and spring. The city is regularly publishing the dates of these workshops on its webpage and social network channels. Sponsors can buy trees and donate them to the initiative. For such cooperation, the city has a form to be filled on its webpage.

The city consulted several landscape ecologists about which trees are the best to plant. As a result, the city published a list of cca. 40 different species that are native to the region or are very resistant in city environments. The final decision on which species to plant is dependent also on the specific city part and specific spot as physical conditions may differ throughout Bratislava. The decision on the species should be brought in cooperation with the environmental experts of the local municipal office.

The overall aim is to create a better micro-climate in the city. On the web, there is a „planting map” included with pinpointing the trees planted. The trees and spots are labelled by the name of the



sponsor on the temporary supporting structure made of natural materials. Many companies working in Bratislava helped cover larger spots by planted trees (dozens of them) and many others supported the planting of one or more trees. The costs of post-planting care for the first 3 years makes up an average of almost 1000 €/tree.

In 2020, the initiative was supported by 22 partners - as diverse as families, embassies, private schools, companies, public waterworks or paraolympic association, offering 212 trees. In 2021, trees were offered by 21 partners. Some of the partners donated trees in the previous years, too, others were new partners. One of the partners offered post-planting care for the trees. Planting funded partly by city resources, corporate sources, donation of partners, the post-planting care funded by the city – 700-1000€/tree for 3 years.



*Fig. 4.18.3. Activists planting trees.*

### Results reached

- City-level initiative appealing to locals and uniting them (we all for one Bratislava). The partners may have a say in decision-making about the place of planting but the final decision is made by officials.
- Cases presented in corporate websites and social media
- Participation of all kinds of companies and all kinds of subjects. Decision-making on trees was made by interdisciplinary experts (landscape ecology).
- From 2019 on, the overall number of trees planted was 3657 huge trees, 25263 bushes and 20600 little trees/seedlings

### Risk and threats for maintenance

The initiative seems to be working well and growing. If we count all trees and shrubs planted, the original objective (at least 10.000 trees) is already reached but this initiative still lives on. Risks include the occasional longer decision-making in planting regarding to some specific spots.

Each city – small or big – has „free” spots in the central parts or outskirts where tree planting can survive after receiving the initial care for the first 2-3 years and create their own guideline for favourable trees.

### More info on the best practice

<https://bratislava.sk/zivotne-prostredie-a-vystavba/zelen/10000-stromov>

Contact person: New City Hall

Phone number/E-mail/LinkedIn

info@bratislava.sk, hotline +421 904 099 004

#### 4.19. Resistant suburbs (LIFE DELIVER)



**Fig. 4.19.1. Bratislava, Slovakia, and the V4 countries**

In Slovakia, almost 1/3 of the inhabitants live in housing estates built in the 1950s. These places are densely inhabited, heavily built-in, lack green surfaces and have low-quality public places. Considering historical factors, this housing structure is very typical for the rest of V4 countries, too.

In cities and housing estates there is a high percentage of concrete surfaces which heat up and cool down quickly and extremely and influence the local air temperature in the city, adding up to the heat coming from transport and heating of buildings. Such housing structures create a heat-inland in the landscape, being 0,5-1,5°C, in extreme case also 10°C hotter than the surrounding lands. Due to concrete surfaces, water circulation is heavily disrupted. Thus, the most severe impacts of climate change will likely be experienced in cities.

In Slovakia, for easing the effects of climate change in cities, a comprehensive project was implemented in 2018-2023 under the name Resistant housing estate, funded from the LIFE

Program. The project commenced on June 15, 2018, and ended on December 15, 2023. Project partners include Bratislava – Karlova Ves, BROZ (Bratislava Regional Conservation Association), Karpatský rozvojový inštitút (Carpathian Development Institute), Inštitút pre pasívne domy (Institute for Passive Houses), and CI2 (Center for Innovative Initiatives), an organization dedicated to sustainable development.

The main objective was to raise the resistance of cities against the effects of climate change by implementing a series of adaptation and mitigation measures and create a tool for monitoring the progress. The model housing estate was situated in city district Karlova Ves – Dlhé diely, where most of the adaptation and mitigation measures were implemented. The project focused on 3 main objectives, firstly, to elaborate a Climatic action plan of city districts, secondly, design a tool to evaluate climatic resistance and monitor the progress, thirdly, create a catalogue of possible adaptation and mitigation measures and implementation.

To measure the progress reached, the project created an evaluation tool named Klimasken. The outcome of Klimasken evaluation is a “climate label” of the city/city district. The tool is free to use, requires registration only: <https://www.klimasken.sk/sk/> Klimasken was used in Bratislava (2019 and again in 2023), in Prešov, Košice and in Hlohovec (SK), in Holic, Prague and Opava (CZ). Total costs of the project was 2 446 523 EUR and the funding programme was the LIFE17 CCA/SK/000126 – LIFE DELIVER.

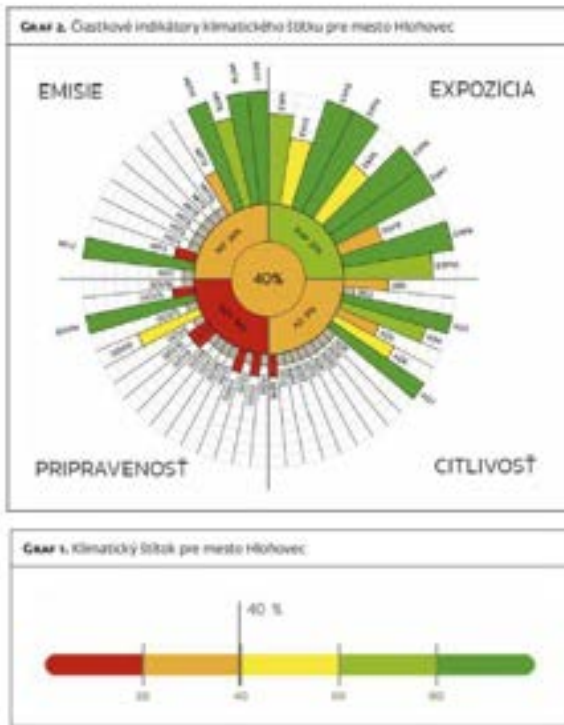
This complex tool considers four aspects of resistance:

- Exposition, namely how much is the city vulnerable to the effects of climate change due to natural factors. The risks include floods, potential damage to infrastructure and buildings from flooding, and impacts from extreme weather events such as temperature deviations from long-term norms.
- Preparedness, whether and to which extent is the city ready to use preventive measures. These measures involve implementing technical solutions within buildings to mitigate floods or excess rainfall, retaining rainwater around the building, harvesting rainwater within the building, and establishing security and preventive measures against natural disasters.
- Vulnerability of city infrastructure to climate change. These elements focus on improving building insulation, incorporating transparent constructions, utilizing shadow-casting structures, including vegetation and cobble roofs, considering building colour, implementing cooling and ventilation systems, and enhancing rainwater retention capacity.
- Emissions – energy consumption, waste production



In the label, 5 collars are used to indicate increasing quality (from red to orange, yellow, light green and dark green be the highest quality). The colour will be given according to the numeric value of the indicator(s).

As part of the overall adaptation and mitigation efforts, two selected public buildings within the participating city district underwent comprehensive reconstruction, incorporating various measures. Furthermore, a climatic information and education center was established, while small-scale adaptation and mitigation measures were implemented in public spaces.



**Fig. 4.19.2. The Klimasken label for town Hlohovec.**

Adaptation measures were of two kinds:

A) CONSTRUCTIONAL – building insulations (2 buildings), outdoor shadow-casting (2 buildings), solar (50) photovoltaic (86) panels (2 buildings), controlled ventilation (2 buildings), rainwater harvesting (2 buildings), rain gardens, permeable parking lots)

B) GREEN – green roofs (on 3 buildings), green façade (1 building – 3 outer walls), rainwater collection (blue-green infrastructure – 1 wetland spot, grey infrastructure – catching the rainwater)

#### Results reached

- These strategies involve a combination of construction and green measures, as well as the consideration and

evaluation of various effects influenced by human activities. Thorough monitoring is essential and requires a multidisciplinary network to address diverse impacts effectively.

- Bratislava applied Klimasken repeatedly (2019 first, then 2023)
- General: for 2023, the preparedness of Karlová Ves city district rose from 41% to 46% , vulnerability fell to 61% from 71%
- Partial: i.e. Energy consumption to heating, lighting etc. in the city district down by 20%
- Complex evaluation and monitoring tool was developed
- Implementation of a complex of measures on 2 buildings – thorough reconstruction
- Children participating in green activities
- Questionnaire survey among the city district’s inhabitants (397 responses) – 3x, November 2018, 2020 and 2023



**Fig. 4.19.3. The basin for the rain garden.**

**Risk and threats for maintenance**

Challenges include issues with data quality, slow decision-making processes within the municipality, policies that are not climate-focused, shifts in priorities due to elections, disagreements among citizens regarding certain measures, and limited financial resources.

**Fig. 4.19.4. Rain garden in operation.**

**Adaptation possibilities for other settlements**

The V4 countries, thanks to similarities in city architecture, can well use the Klimasken indicators and compare themselves to other cities as well as measure their own progress in climate action. The indicators can be used in other settlements, too, but they require a complex monitoring system involving many different institutions. Klimasken is especially suitable for the V4 countries, thanks to similar city design and architecture. Use of Klimasken outside V4 may require more detailed examination of some indicators and their correct interpretation.



**More info on the best practice**

URL: [www.odolnesidliska.sk](http://www.odolnesidliska.sk), [www.klimasken.sk](http://www.klimasken.sk)

Contact person: Zuzana Hudeková

Phone number/E-mail/LinkedIn: [hudekova@karlovaves.sk](mailto:hudekova@karlovaves.sk), [zunka.hudekova@gmail.com](mailto:zunka.hudekova@gmail.com)



#### 4.20. Addressing climate change on local level - Rain garden Šamorín



**Fig.4.20.1. Šamorín, Slovakia, and the V4 countries**

Parkova Street is one of the main roads in Šamorín leading from the country road to the city center and the frequented sports complex x-bionic sphere. In rainy weather or after heavy downpours, a big puddle remained on the road and roadside middle-street, often for days, causing inconvenience for pedestrians on the nearby sidewalk. During 2022, a proposal was made to the local municipality to deal with this problem by enabling water to soak into the roadside soil instead of evaporating. As a solution, the rain garden concept was used and introduced as the first of its kind in Šamorín.

The proposal was evaluated feasible and got financed during 2023 from municipality though the participative budgeting program and external grant resources. The project focused on physical terrain reconstruction on the roadside, by digging a ditch deep cca. 130 cm at some point, running parallel to the road.



**Fig. 4.20.2. The street before the rain garden.**

The ditch was then filled by permeable material - big stones undermost, covered by white geotextile permeable to water but not silt, then substrate with pebbles and again big river stones. Followingly, the plants were planted a few weeks later – corresponding to the different parts of the rain garden. Species typical for wet habitats were planted to the core part where the water was concentrated and slowly soaked in, while drought-tolerant plants were planted on the margins that were flooded only on occasions or short-term. According to the proposal, the rain garden will require minimal management in the future as the plants that tolerate the local conditions are to survive and thrive there (accepting a change in species composition). However, the established rain garden required a careful management in the first weeks after planting to ensure the survival of the first plants.



**Fig. 4.20.3. Creating the rain garden.**

The concept proved to be successful and was tested in the coming weeks of summer 2023. The water was directed from the roadside to the ditch and soaked in within 3 hours. The roadside got dry, safe and the water returned to the soil where it will be used up by the vegetation in the rain garden and trees in the nearby park. The project was funded by the participative budget of town Šamorín by 2615 EUR and by 1800 EUR additional grant resources (Nadácia ZSE).

**Interdisciplinary approach:** While solving the water infiltration into the soil, the implementing team considered the physical features of the terrain on spot and consulted the municipality's traffic department while preparing the project. The subcontractor company evaluated the biotope quality and proposed the plants species accordingly.

**Methods used to involve the community**

The project was submitted to the local government's participative budget for year 2023. After being evaluated by an expert committee, it entered a public sms-voting process lasting for 2 weeks. The project came out as one of the best rated projects in the public voting and thus received the municipality

funding.

**Publicity:** During the implementation, there was a continuous update on the ongoing works with warnings (traffic restriction), photos and videos documenting the stages of the project on the social media.





**Fig. 4.20.4. The completed rain garden and the builders.**

### Results reached

- The rain garden managed to divert puddle water from a nearby crossroad as well thanks to the spot's natural gradient.
- Water retention in the soil
- Higher humidity of spot, better micro-climate
- Higher endurance of trees and vegetation thanks to the higher humidity of soil
- Excellent element of the practice is water retention, higher safety for pedestrians and a more attractive spot instead of the former „brown ground“.
- Safer passageway due to water diversion from the road
- Dry and safe road as well as nearby drive-out
- The funding type – participative budget of town allows the potential inflow of many ideas from many people
- it is a living laboratory in examining how the physical environment (water, pollution, nutrient accessibility) will affect vegetation.
- High multiplication potential

### Risk and threats for maintenance

Thanks to the spot's altitude variations, the drive-out in a nearby crossroad was dried up earlier as the water could flow downwards into the rain garden. There are three major risks identified.

Trespassing: One of the threats of malfunctioning may be continuous trespassing of this spot in multiple places that result in compression of the loose, highly permeable material. Compression reduces the soaking ability of the structure. For safety reasons, the municipality refused to install a catwalk here (it was a part of the original proposal) as it is a spot often crossed by pedestrians shortening their way to the bus station. In the first months after implementation, there are only slight traces of trespassing, just in one place, in the marginal part of the rain garden.

Natural succession: Although the rain garden was projected to be self-maintained, it is expected that the plant composition may change over time. Potential risks, though, include growth of tree saplings (other trees nearby), intense growth of invasive plant species and too high vegetation that would be

an obstacle for the safety of vehicles and pedestrians. There may be an occasional management needed in the future.

Winter road maintenance: In winter, the municipality cares for the roads to prevent icing. It is most often done by salting the roads. It is probable that despite the pebble filtration, excess amount of salt may soak in the ground, further changing the plant composition of the rain garden.



*Fig. 4.20.5. The complete rain garden.*

### **Adaptation possibilities for other settlements**

While mapping potential spots for rain gardens, municipalities need to consider the conditions on spot, examine gradient variations and define the non-solid surface near spot to direct the water to. The rain garden solution is suitable for bigger and longer-lasting puddles because creating such a soaking structure needs some physical space, too. Turning concrete-covered surfaces in towns to rain gardens is desirable and reconsidering whole road stretches may be necessary.

There is a scale limitation in context of cost-effectiveness, the best is if the rain garden is solving a stretch of road instead of a single spot. And a geographic limitation: altitudes on spot and nearby have to be carefully considered as they can be a crucial factor in the success of diverting the water!

### **More info on the best practice**

<https://samorin.sk/prva-dazdova-zahrada-samorina-je-uz-hotova/>

<https://www.osvetads.sk/dazdova-zahrada-v-samorine>

<https://www.youtube.com/watch?v=xx7K9FWjbqQ&pp=ygUaZGF6ZG92Y5B6YWWhyYWRhIH9gc2Ftb3JpbmU%3D>

Contact person: Ing. Lea Fašangová (Town Hall Šamorín), [lea.fasangova@samorin.sk](mailto:lea.fasangova@samorin.sk)

Valéria Kličková (project owner), [szomolai@foruminst.sk](mailto:szomolai@foruminst.sk)



# 5. Concluding remarks





The selected best practices illustrate that the resilience of communities is highly multifaceted and depends on many factors. Whether it's a pandemic, a migration crisis, war pressures, or climatic dangers, immediate responses may be necessary for the survival of communities and their inhabitants. But how can we intervene successfully, quickly, efficiently, and wisely with solidarity? What can we learn from many seemingly isolated cases or practices presented?

Despite the cultural and linguistic differences of the four countries, in their successes, there are parallel points and commonalities worth noting in the long term. Although they may have been created to solve specific cases or mitigate locally occurring negative effects, they carry universal messages, attitudes, and approaches that can be useful to communities and their residents in any crisis situation. One of the major and unexpected challenges of the 21st century was perhaps the COVID pandemic, in which digitalization, faith in science, and solidarity provided support. The common point of the best practices presented in the chapters is that whether it was companies, municipalities, or civilians, they exploited the connecting and cohesive power of the internet and especially social media. Some municipalities digitized and made public services more accessible, while companies helped those in need of special education support with online practical lessons. A beautiful example of solidarity is the community-based organization of medicine and food delivery, the telephone service for those in emotional crisis, but the redesigning of offices to be "COVID-proof," which can be interpreted as a corporate attempt to rebuild communities, is also outstanding.

But just as the pandemic began to subside, the attention of Central and Eastern European countries was drawn to the war pressures and the ensuing economic consequences and migration waves. Countries along the Ukrainian border had to find immediate solutions for the care, transportation, and temporary accommodation of several million refugees. However, regarding the refugee wave and migration pressure, these countries already had experience, which allowed them to respond quickly to the unexpected crisis.

The best practices in the four countries all emerged around the principles of cooperation and solidarity, proving that community resilience depends not only on good but also on humane decisions. The strength of society also depends on appropriate emotional resilience and how the community can cope with its fears. The four countries, in different ways but based on the principle of inclusivity, created community spaces, child welfare services, training programs, and even discounted transportation.

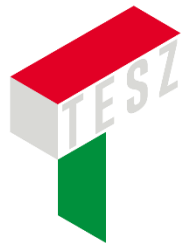
Although climate change has long been a proven phenomenon that permeates our daily lives, many good examples have been mentioned that involve creative mitigation or adaptation processes that take into account local and regional opportunities. The solutions can be grouped into three categories. The first category includes purely technological and engineering solutions, which use increasingly flexible and open approaches to architecture for environmental and climate protection. Examples include buildings made from environmentally conscious materials such as straw bales or wood, as well as hanging gardens, green facades, and roofs. A well-designed rain garden or urban oasis that helps retain water can also be considered part of this initiative.

The second category consists of practices linked to municipal leadership and public decision-making, the establishment of new systems, and regulations. These include systems that facilitate sustainable urban certification, green urban labels and brands, tree-planting campaigns, the creation of urban gardens, fairy gardens, and forests. This category also includes systems that promote energy independence or innovative water base and water use regulations.

The third category includes practices related to individuals and communities. Examples are community plantings, community green space maintenance, or even neighbourhoods realized through community planning.

To sum it up, although the presented cases are very diverse, their message is common: the factors of resilience can be developed individually or collectively, tailored and customized as needed. In this way, we can ensure the long-term survival and well-being of communities and their residents.





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