



Making
Cities
Resilient



PROJECT REPORT

Local Resilience Building in Ukraine:

Recommendations



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OBJECTIVE

The Local Resilience Building in Ukraine project sought to support the engagement of Ukrainian cities and regions in the global [Making Cities Resilient 2030 initiative](#), which works towards developing local strategies for disaster risk reduction (DRR). The project focused on supporting a set of baseline resilience assessments in four Ukrainian cities (Lviv, Mykolaiv, Ostroh and Vinnytsia) and one region (Rivne Oblast), using the MCR2030 Disaster Resilience Scorecard for Cities preliminary level assessment methodology. From November 2023 to February 2024, the project aimed to assess resilience levels and provide actionable recommendations for enhancing local climate resilience and recovery strategies.

The project methodology adapted to the ongoing context in Ukraine by emphasizing capacity-building for remote information-gathering and online workshop facilitation. Six online sessions and weekly forums were conducted, covering the MCR2030 introduction, city collaboration, resilience strategy, assessment tools and outcome discussions. A two-day workshop hosted by the Polish city of Wrocław, an MCR2030 Resilience Hub, facilitated deeper discussions and knowledge exchange. Despite challenges, administrative tasks were successfully managed to ensure smooth coordination.

Each city was supported in undertaking baseline resilience assessments to highlight strengths and weaknesses while offering a baseline and a set of recommendations for future planning. Notably, infrastructure resilience during wartime received high scores, yet challenges persist in long-term

proactive planning and effective disaster response to non-conflict-related stresses. Rivne Oblast showed strengths in infrastructure but highlighted challenges in recovery planning. Ostroh demonstrated progress in resilience programmes but identified gaps in critical infrastructure. Lviv showcased readiness for infrastructure resilience but lacked comprehensive recovery plans. Mykolaiv demonstrated resilience in wartime pressures but faced challenges in assessing non-war-related risks. The scorecard assessment of Vinnytsia emphasized the need for holistic risk analysis and recovery planning.

To strengthen these cities' DRR and resilience capacity, recommendations include enhancing their risk analysis, institutional capacity, financial resilience, recovery planning, and infrastructure resilience. Awareness-raising activities and international knowledge exchange are crucial, necessitating collaboration between cities and stakeholders. Establishing a Resilience Hub in Ukraine (e.g. in Lviv) could serve as a focal point for capacity-building and collaboration.

Beyond the project scope, formalized city collaboration could evolve into a broader support network for recovery efforts, leveraging Ukrainian cities' knowledge and expertise. Strategies focusing on resilience and sustainability could attract funding and investment while addressing immediate and long-term needs. Additionally, robust and effective disaster risk governance through these strategies could enhance investment prospects and collaboration opportunities.

METHOD

Given the ongoing war in Ukraine, the experts did not physically travel to each city in the country; rather, they focused on building capacity for conducting information-gathering related to the assessment early on, and this remained the guiding principle throughout the project's duration. Many participants had previously engaged in awareness-raising activities related to resilience, such as the 2022 and 2023 European Urban Resilience Forums (EURESFO).

Throughout the project, a total of six online sessions were conducted, along with weekly open forums for reflection and Q&A.

- Session one served as an introduction to MCR2030 and explored the global landscape of city resilience.
- Session two focused on city-to-city collaboration within the project.
- Session three focused on resilience strategy, action plans and financing strategies. Various examples were presented, and methodologies and experiences from the MCR2030 partnership were examined, with a particular emphasis on a comprehensive review of the Sendai Framework and the Ten Essentials.
- Session four was dedicated to the assessment tools, with the aim of establishing a thorough understanding of the tools and developing the ability to implement assessments within each city's context and circumstances.
- Following sessions three and four, a separate follow-up session was held to provide additional time for participants to review instructions and materials related to the assessment.
- Session six, conducted online, focused on discussing the outcomes of the assessment workshop and the recommendations outlined in the report.

A two-day workshop was organized to finalize the assessment and facilitate the exchange of experiences among cities regarding the use of assessment tools and findings. This workshop also addressed needs, opportunities and challenges. Hosted by the Polish city of

Wrocław, an MCR2030 Resilience Hub, it provided expert support and interventions from key officials from the city administration, including Deputy Mayor Jakub Mazur.

Energy resilience emerged early on as a major challenge for all cities, leading to an interest in developing sustainable renewable energy island concepts. To inspire public-private partnership development in addressing these complex challenges, Agnieszka Spirydowicz, Chief Executive Officer of Zgorzelecki Klaster Rozwoju OZE i Efektywności Energetycznej Zklaster, was included.

To further deepen knowledge and understanding of urban resilience, the following study materials were included and recommended:

- *UNDRR Disaster Resilience Scorecard: Preliminary Level Assessment*
- *UNDRR Disaster Resilience Scorecard: Detailed Level Assessment*
- *Reference Note on Required Data/Information: Preliminary Assessment*
- UNDRR Hazard Information Profiles
- UNDRR, *Technical Guidance on Application of Climate Information for Comprehensive Risk Management*
- [UNDRR DRR glossary](#)
- *Resilient Rotterdam Strategy 2022–2027*
- *Vejle's Resilience Strategy*
- *Resilient BoTu 2028*
- *What is Social Resilience? Lessons Learned and Ways Forward*
- "Social equity in urban resilience planning", *The International Journal of Justice and Sustainability*
- YouTube, [The Dryline – BIG's vision for New York City](#)
- YouTube, [Social resilience in Vienna | Mirjam de Klepper | TEDxViennaSalonResilience](#)
- YouTube, [Sustainable and Resilient City \(the City of Malmö\)](#)
- *Urban Flows & Resilience: A handbook which sorts out how everything fits together*

RESULTS

RESILIENCE SCORECARD ASSESSMENT

The [MCR2030 scorecard assessment methodology](#) offers a self-assessment for cities. It provides a baseline analysis of resilience at the city level, with a view to developing a local strategy for DRR. It is based on the current valuation, so will change over time as measures are taken and/or the situation evolves. The result should be used not to compare these cities or other MCR2030 cities, but rather as a participatory self-assessment offering an overall picture of the city's risks, challenges and current approaches.

The results for each city are presented using its overall score in the scorecard assessment, where strengths and weaknesses are highlighted. Further information is found on each city's scorecard and could be used for further analysis and understanding.

The MCR2030 scorecard preliminary assessment methodology and tool was translated into Ukrainian to support project implementation.

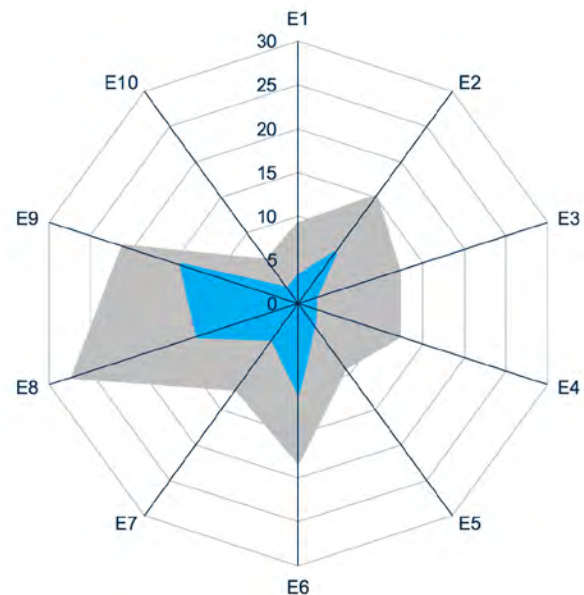
Rivne Oblast (Rivne region)

Rivne Oblast (state/region) is the only regional entity to have undertaken a scorecard assessment in Ukraine. Rivne Oblast has an overall score of 60 out of 141. Its highest rating is in Essential 8, "Increase infrastructure resilience", followed by Essential 9, "Ensure effective preparedness and disaster response". Essential 10, "Expedite recovery and build back better", has the lowest score.

The regional level, like the cities, scores highly in the "Infrastructure" Essential, especially when it relates to managing the stresses of war. However, as stated in the comments, needs are escalating and there is a constant need for critical infrastructure to be monitored and upgraded.

"The risks constantly evolve, they change and the protective infrastructure needs to be updated. For instance, the power grid has been designed specifically to be disconnected from European countries, and the best practice, on the contrary, would be to make it more modern."

The lowest score was given to Essential 10, "Expedite recovery and build back better". When it comes to post-event recovery planning, the process is constantly being updated as the national recovery strategy also changes. This calls for a consolidated strategy.



"More attention and focus should be given to a systematic approach in capturing and disseminating the lessons learned. Some sectors (like cybersecurity) do have a proper system, therefore it can be scaled to all other sectors."

The scorecard assessment of Rivne Oblast contained many interesting comments that supported the assessment and offered a clearer picture of the complexities the region was facing. Some of them are listed below.

“There is experience with the temporal loss of service, there is a lack of vehicles (e.g. many school buses were given to the armed forces of Ukraine) and in event of an emergency, the police should be more involved in the facilitation process.”

“Once again, we are a unique region and our health-care facilities work with maximum load constantly. They have reflected their resilience and ability to treat major injuries quickly. [However,] given the number of wounded soldiers, the need for additional facilities for both treatment and rehabilitation is tremendous.”

“Some teaching facilities are still at risk. However, the vast majority do have proper shelters as the local population demanded offline education and to have it, schools were obliged to equip bomb shelters.”

“There are developed scenarios for particular risks. However, several risks are not communicated well. The fast response works much better than the regular planning and updates.”

“The promotion and development of blue and green infrastructure are primarily done by private initiatives.”

“Ongoing discussion on emerging issues (there is a need for a mechanism and/or platform), risk matrix development (the probability is not analysed on an ongoing basis).”

“There are no incentives [for sectors and businesses to support resilience building] in general, only fines.”

“The training programmes for vulnerable groups are mostly conducted by international organizations or NGOs, whereas the authorities rarely provide regular training.”

Ostroh

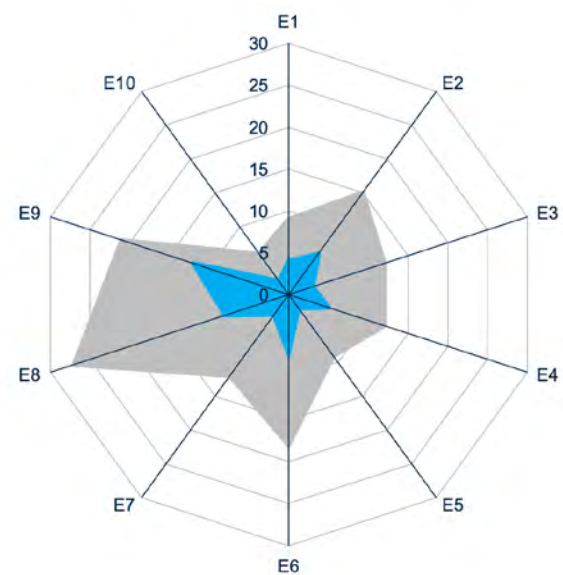
Ostroh has an overall score of 52 out of 141. Its highest rating is in Essential 8, “Increase infrastructure resilience”, followed by Essential 9, “Ensure effective preparedness and disaster response”. Essential 10, “Expedite recovery and build back better”, has the lowest score, followed by Essential 1, “Organize for disaster resilience”.

The response refers to the decision of the Ostroh City Council dated 25 August 2023, No. 1211 on the programme to increase the resilience of the critical infrastructure of the Ostroh city territorial community to crises caused by the termination or deterioration of the provision of services important for its survival for 2023–2025.

“There is a protective infrastructure [in] the territory of the community, but it does not comply with best practice.”

The highest score was in Essential 9, “Event effective preparedness and disaster response”.

“The emergency response plan of the Ostrozka urban territorial community was approved by the mayor in 2022 with the Rivne RDA [regional development agency] and



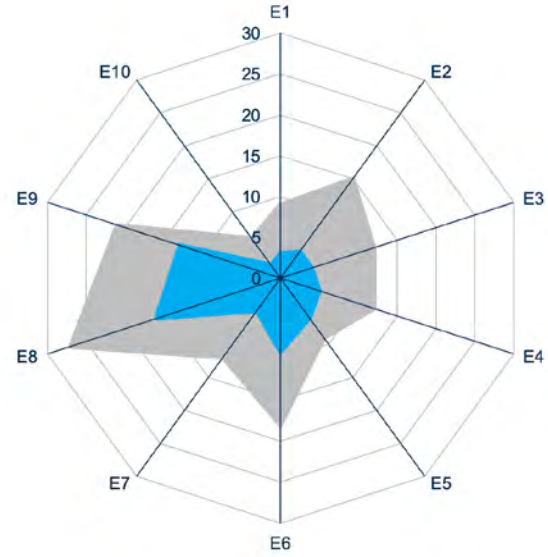
three DPRZ GU DSNS [the State Fire and Rescue Unit of the Main Directorate of the State Emergency Service of Ukraine] in the Rivne region, with appendices.”

Lviv

Lviv has an overall score of 67 out of 141. Its highest rating is in Essential 8, “Increase infrastructure resilience”, and the lowest is in Essential 10, “Expedite recovery and build back better”. Lviv made extensive use of the opportunity to fill in comments and reflections in the various cells, hence a lot of additional information was captured.

In Essential 8, “Increase infrastructure resilience”, it becomes clear that the pressures of war have had both positive and negative effects on the city’s readiness to strengthen infrastructure resilience. Measures to protect and secure infrastructure have been taken concerning military threats and risks. Of course, these have significant value for other risks and contribute to increased infrastructure resilience; for example, within communications, several means of maintaining effective connectivity are in place and up to date due to frequent use. There are, however, comments on the lack of plans, despite awareness of the importance and prioritization of critical infrastructure resilience. In the comments about how to achieve maximum resilience, one important note states that “The working group on resilience, which is expected to be established in 2024 to plan, monitor and manage resilience in the city, will develop the risk matrix and will develop recommendations on the improvement of critical infrastructure resilience.” This will become an important measure for future infrastructure resilience, not only to stresses from the war but also to all other risks and challenges that Lviv is facing.

In Essential 10, Lviv notes that there are recovery plans in



place within many sectors, yet they are not comprehensive and seem to be foremost developed within the sector silos.

The “working group on resilience” mentioned above will be responsible for improving all aspects of recovery planning.

The scorecard assessment for Lviv is rich in comments and reflections, and provides extensive information on the overall assessment presented.

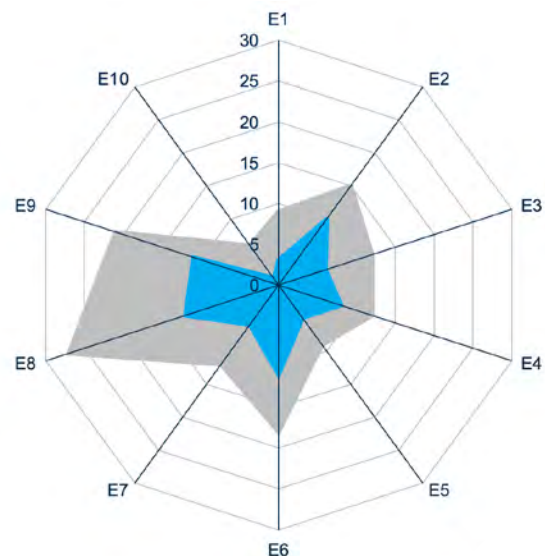
Since the first scorecard assessment, additional remarks have been gathered, enabling deeper understanding of, and ability for, resilient development. That valuable work is attached to this report in appendix 1.

Mykolaiv

Mykolaiv has an overall score of 73 out of 141. Its highest rating is in Essential 8, “Increase infrastructure resilience”, and the lowest is in Essential 10, “Expedite recovery and build back better”.

Mykolaiv has evidently had the capacity to deal with the severe stresses of war. However, the information on other risks and the level of resilience is more difficult to interpret.

“The experience of actions during martial law in the country verified the information entered. The services were provided both from the resources themselves (directly) and through a designated reserve.”



Vinnytsia has an overall score of 36 out of 141. Essential 8, “Increase infrastructure resilience”, has the highest rating. Essential 10, “Expedite recovery and build back better”, and Essential 5, “Safeguard natural buffers to enhance the protective functions offered by natural capital”, have the lowest scores.

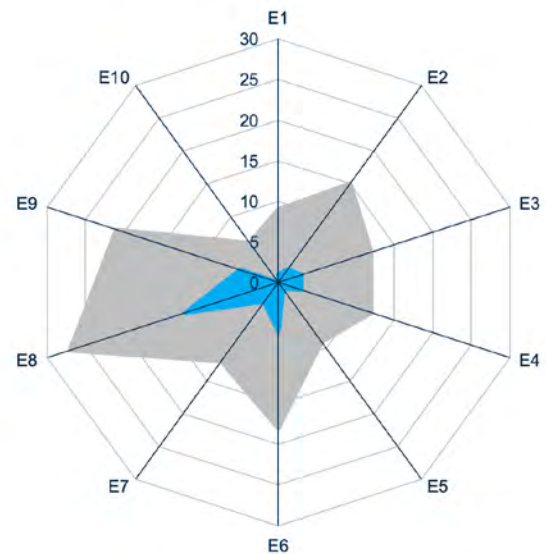
In the comments for Essential 8, it is consequently mentioned that infrastructure needs to be assessed and developed according to climate risks and sustainable development. It is also interesting to notice the ambition to have the functionality of the infrastructure in focus. It becomes apparent that measures that were undertaken due to stresses from the war need to be considered and further developed for climate-related stresses and shocks.

In Essential 5, it is evident that awareness of a holistic approach to nature-based solutions, including ecosystem services and biodiversity, needs to be raised in order to carry out a proper inventory of green areas. There is also a need to develop an evaluation mechanism and to take the issue of biodiversity loss into account. All processes related to green and blue infrastructure must be reviewed.

“Deeper and more thematic cooperation between cities and networks regarding climate risks must be developed.”

Comments on Essential 10 stress the importance of strategies for preventing risks from happening, and the need for scenarios to be developed to act as a base for recovery planning.

“In the context of climate risks, a post-event assessment process needs to be developed and implemented.”



Finally, Vinnytsia reflected as follows:

“Taking into account all the complexities of the process of urban resilience in general, and the current lack of a general risk matrix, when filling out the scorecard we decided to focus on climate risks. This decision takes into account Vinnytsia’s recent adoption of the Local Green Deal, where one of the measures is the development of the climate change mitigation and adaptation strategy. Last year’s Assessment of the City’s Vulnerability to Climate Change study allowed us to identify the main risks that Vinnytsia will face in the future: problems with drinking water, heat and loss of green areas. Therefore, we decided to apply the proposed tool for these risks. Working with the scorecard and going through the Essentials was useful to us – we were able to look more thoroughly at the strategic process holistically and analyse and plan for future development. We now see how much work and what exactly should be done.”

RECOMMENDATIONS

Through the resilience scorecard assessment, several specific needs have become apparent, which are common to all participating cities. Additionally, each city has its own unique needs based on the nature of the risks and challenges it faces, as well as factors such as size and existing capacity at the local level.

The following observations and recommendations will provide baseline elements for consideration when supporting cities in initiating the planning and preparation process for formulating local resilience plans. These recommendations would need to consider the realities at the city level, with a view to supporting cities to establish plans and activities for sustainable solutions that are in line with existing capacities.

NEEDS

Actions related to the recommendations should be tailored to each city in order to best accommodate their needs and consider what is achievable in the given circumstances.

Risk analysis, climate risks, and future scenario planning

Overall, cities must enhance their internal capacity to conduct more-rigorous risk identification and thorough analysis. This should extend beyond traditional industrial perspectives to encompass climate-related (including biodiversity), societal and economic risks. Achieving this requires capacity-building through training in existing methodologies and tools.

Scenarios to understand complexity and interdependencies appear to be insufficiently developed or utilized. Therefore, support is essential to introduce this approach as a strategic tool for long-term planning and strategy development.

Strengthening institutional capacity and organizing for disaster resilience

The assessment and related discussions with the city of Wrocław (as the MCR2030 Resilience Hub supporting this process) highlighted the need for a broader awareness activity within the local administration to introduce and establish a common understanding and resilience language. This is also relevant for stakeholders and city operators of critical infrastructure. As some of the stakeholders are from the private sector, specific knowledge and strategies on how to identify them, get them involved and engage them over the long term are required.

Strengthening financial capability for resilience

The first challenge is to create financial capacity for work to develop local resilience plans. There is a need for funding to ensure proper staffing and budgets for activities related to resilience and recovery plans.

The next challenge is to create financial capacity for the actions needed in line with the resilience and recovery plans. As this is a challenge that many cities outside Ukraine are facing, pathways that have proved successful elsewhere should be followed. Special attention should also be paid to different funding opportunities that will become available for the recovery of Ukraine.

Building back better, resilient urban development and design, and using nature-based solutions

These needs are forward-looking. Within this project, it is evident that most efforts and resources are directed towards addressing immediate needs and short-term solutions to cope with the impacts of war. While long-term planning and ambitions do exist, they are often overshadowed by the urgency of immediate requirements. This prioritization is understandable, given the circumstances, and it is reflected in the lower scores across all cities for related Essentials.

There is a pressing need to elevate the significance of long-term planning and strategies and to synchronize efforts between the national, regional and local levels. This may require a separate task or dedicated project that focuses on utilizing future exploratory scenarios to comprehend risks, pressures and opportunities. This groundwork will facilitate the formulation of strategies for urban development and recovery, grounded in resilience and sustainability principles. Importantly, such work must encompass not only traditional risks and climate impacts but should also consider the social ramifications of conflict and global urban trends.

Addressing these challenges requires time and cannot be hastily resolved. It is a multifaceted undertaking for which the scorecard methodology provides valuable insight, although with some vagueness on the specific path forward. Preparations and planning for recovery need to be initiated.

Societal capacity for resilience

There is a significant need for heightened awareness of, and a shift towards, long-term planning, particularly concerning climate risks and sustainable development. Additionally, it is imperative to actively engage the private sector.

To reinforce societal resilience, it is essential to cultivate organizational structures based on public–private collaboration, which should include NGOs, various civil groups and other stakeholders.

There is considerable potential in establishing a structured approach to harness the capabilities of self-organized citizens in effectively addressing future shocks and stresses. The challenge for the city is to prepare for interacting with self-organized citizens before the citizens mobilize for specific purposes. By utilizing future scenarios, cities can identify areas where self-organized citizens could contribute as valuable assets and resources. Specific questions to address include: 1) How can citizens' participation be organized and directed within the municipal response framework? 2) How can accountability be ensured within crisis management plans?

Infrastructure resilience

Cities performed strongly in this aspect, focusing primarily on mitigating the pressures and strains of war on infrastructure. This approach is perceived to be successful, with cities showcasing a high capacity for reactive measures. However, the ability to deliver essential services to citizens at an acceptable level during wartime does not necessarily translate into being a liveable city for residents or an attractive investment destination for the private sector.

In terms of long-term, proactive planning, it is crucial to consider additional stresses and to incorporate transformative global trends, largely driven by climate change, emerging disruptive technologies, and other challenges beyond those of war.

Through more-comprehensive identification and analysis of risks, as discussed earlier, it will become evident that investments in infrastructure are essential to address these risks and future challenges. Challenges identified by cities in the scorecard assessment include issues related to energy, water supply, mobility (beyond automobiles), and the integration of sustainable and decentralized systems.

Building resilient infrastructure requires sustained, long-term planning that aligns with the city's strategy for resilient development, accompanied by a financial strategy. To identify needs and solutions for urban resilience and infrastructural functionality – particularly since many service providers are private entities – a cluster initiative can be beneficial. This entails a public–private collaboration focused on urban issues.

Ensure effective disaster response

Cities have performed very well in this regard, as evidenced by their effective response to the challenges posed by war. Ukrainian cities could offer valuable insights into sharing best practices for efficient disaster response.

However, it is essential to recognize that other long-term challenges, such as heatwaves, and flooding, must also be incorporated into the response system. These stresses persist regardless of the ongoing conflict.

HOW TO ORGANIZE CONTINUED SUPPORT

To advance the development of a resilience strategy and resilient recovery planning, it is crucial to enhance capacity for subsequent steps through various enablers, namely:



Structural support

- **Establishing a “port of support”**

During the project, it became evident that cities require support to organize and formalize collaboration with potential supporters. Establishing a “port of support”, where needs and experiences can be shared and solutions can be “imported”, is a concept worth exploring.

- **Building capacity within Ukraine**

There is a need to develop capacity within Ukraine, by Ukrainians, in the Ukrainian language. Establishing a Resilience Hub within the country would significantly support this effort. As stated in the MCR2030 initiative, “The primary purpose of a Resilience Hub is to enhance city-to-city collaborations and peer-to-peer support. Resilience Hubs play a critical role in knowledge-sharing, capacity-building and creating learning opportunities. They should inspire other local governments to commit to greater resilience.” Therefore, establishing a Resilience Hub in Ukraine is crucial. With dedicated support, the city of Lviv has the capacity to take on this role.

- **Formalizing collaboration**

Formalized collaboration between cities that leads to resilience strategies has significant potential to evolve into a port of support with external support for aid and assistance in recovery efforts, not only for the cities involved in this project but also for others, as it will develop general knowledge about needs and methodologies. Collaboration between cities needs to be formalized and facilitated.

- **Exchanging knowledge internationally**

Cities require further international knowledge exchange and the ability to establish concrete collaboration with other cities, institutions, organizations and enterprises. There is a need to map and analyse which forums and meetings are relevant and prioritized for city participation, such as EURESFO and the European Summit of Regions and Cities.



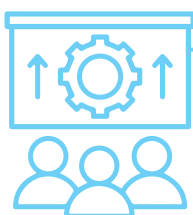
Technical assistance

- **Developing resilience plans**

The subsequent phase in the MCR2030 process involves developing resilience plans (a resilience strategy). Formulating these plans, along with an action/implementation plan and financing strategy, is complex and requires a learning-by-doing approach, which demands time. This process can be expedited with dedicated facilitation and support. It is beneficial to undertake this exercise in the early stages of recovery, ensuring it is well coordinated with other ongoing initiatives (such as regional development strategies) and involves local authorities.

- **Carrying out risk analysis and challenge analysis**

Risk analysis and challenge analysis need to be further developed in conjunction with the development of a resilience strategy and associated action plan.



Capacity-building

- **Enhancing understanding of resilience concepts**

One significant challenge is the language barrier. Ukrainian cities must improve their Ukrainian language proficiency in resilience, in alignment with the MCR2030 framework and the sustainability discourse of the European Union (EU). City administrations and stakeholders generally have an insufficient understanding of resilience concepts and the principles outlined in the Sendai Framework. Therefore, further awareness-raising activities are required for municipalities and various stakeholders. Assistance should be offered in planning and executing these activities effectively. Cities have expressed a wish for external experts from diverse organizations to participate in these efforts to lend them credibility and importance.

- **Training and capacity-strengthening**

Additional training and capacity-strengthening activities are necessary to establish a critical mass of officials with a uniform understanding and language of resilience.

REFLECTIONS BEYOND THE SCOPE OF THIS PROJECT

There is an opportunity to initiate recovery efforts while the conflict is ongoing with a long-term strategic focus, instead of short-term patching. A well-designed resilience strategy, as we know, increases the potential for financing through investments, loans and grants. It is reasonable to assume that these strategies would also attract donations, as they ensure long-term commitments while addressing immediate needs.

Knowledge of how modern warfare affects the local level is valuable. Ukrainian cities have the expertise and accumulated experience of those effects. Using resilience and sustainability terminology in framing challenges, as well as developing strategies and plans, allows for the Ukrainian knowledge and experience to be shared on the local level outside Ukraine in a useful and effective way. The work done in this project allows for knowledge and experience from the pressures of war to be communicated and shared. Developing local strategies according to MCR2030, as well as using resilience and sustainability terminology, can make this knowledge more relatable and help to raise interest in the exchange of knowledge, best practices and collaboration on a local level outside Ukraine. This could be commercialized and create a base for research, innovation and exchange.

Many large international companies see significant risks with corruption. There are opportunities within the framework of these strategies to also implement anti-corruption efforts, which would strengthen the willingness for investment and collaboration. Any processes, methods and systems developed must also minimize opportunities for corruption.

Measuring Lviv resilience using UNDRR methodology

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In 2023, the city of Lviv joined the Making Cities Resilient 2030 (MCR2030) global partnership, coordinated by the United Nations Office for Disaster Risk Reduction (UNDRR). In this case, building resilience means taking measures that allow systems, services and people to respond to hazards, cope with damage and recover.

Lviv faces various kinds of threats (environmental, economic, social, etc.), but since 24 February 2022, the city authorities have been focusing primarily on military ones. To effectively address the consequences of Russia's military aggression (internal migration, destruction of housing and infrastructure, civilian and military casualties, etc.), city officials are implementing a variety of measures that form the urban resilience system. To describe and evaluate this system, City Institute (the municipal institution of Lviv City Council), together with the Civil Protection and Territorial Defence Department of the Lviv City Council, used the resilience scorecard, a self-assessment tool offered to MCR2030 network members.

In order to qualitatively cover the city's policies and positions on environmental, economic, social and military threats, the City Institute, in cooperation with the Civil Protection and Territorial Defence Department, surveyed the Lviv City Council institutions. With support from the MCR2030 network and based on the survey results, respected representatives of the above-mentioned institutions filled out the resilience scorecard to assess Lviv's resilience system.

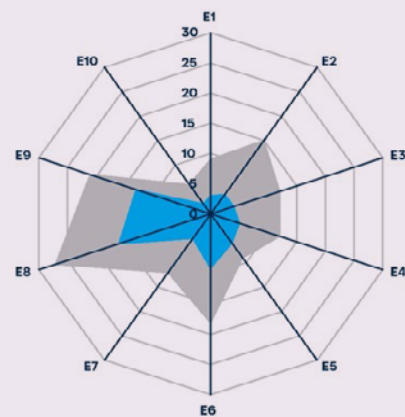
We draw your attention to the following caveats to avoid misinterpretation of the results presented:

1. The survey conducted among Lviv City Council institutions is not representative; it is intended to form only a general idea of actions by institutions to increase the city's resilience. In the future, the survey will need to be redesigned to achieve more accurate results. This will require additional resources.
2. The methodology underlying the resilience scorecard does not consider military threats, focusing instead on natural disasters. In addition, most of the information related to resilience to military threats is not currently available. Therefore, the following assessment and explanation provide only a partial picture of the urban resilience system. It can be supplemented through closer cooperation with relevant city and state authorities, as well as international organizations and experts.

Overall resilience score for Lviv: **67/141**

Загальний бал для цієї оцінки становить 67 / 141

Стійкість до стихійних лих форма оцінки для міст — попередня оцінка, v.1.0.



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The resilience scorecard methodology is based on 10 principles for making cities more resilient, or in other words, the steps that need to be taken to build and maintain resilience. These principles were developed to accelerate the implementation of the Hyogo Framework for Action and later the Sendai Framework for Disaster Risk Reduction 2015–2030 at the local level as part of the Campaign for Resilient Cities (the predecessor to MCR2030). The 10 principles are directly correlated with the priorities of the Sendai Framework and its indicators for monitoring disaster risk reduction (DRR).

You can learn more about the 10 principles on the [MCR2030 website](#).

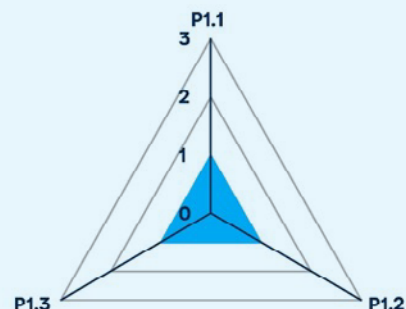
To learn more about the Sendai Framework, see <https://sendaimonitor.undrr.org/>.

ESSENTIAL 1: ORGANIZE FOR RESILIENCE

To effectively respond to various kinds of threat, the city must integrate resilience into the organizational structure of the City Council and into the city's documentation that defines the principles of both daily interaction and strategic development.

Принцип 01: Організувати для стійкості (Organize for resilience)

P1.1	Чи включає генеральний план міста (або відповідна стратегія/бачення розвитку) підходи до зниження ризику стихійних лих/катастроф відповідно до Сендайської рамкової програми та чи впроваджує їх?	1
P1.2	Чи існує міжвідомчий/міжгалузевий механізм з відповідними повноваженнями та ресурсами для вирішення питань зниження ризику стихійних лих?	1
P1.3	Чи належним чином інтегрована стійкість з іншими ключовими функціями/сферами діяльності міста?	1



The Integrated Development Concept: Lviv 2030 and strategic documents in the field of climate change approved in Lviv – such as the Sustainable Energy and Climate Action Plan (SECAP), the Sustainable Urban Mobility Plan (SUMP) and the Green City Action Plan – provide strategies for responding to various kinds of threat. The Integrated Development Concept: Lviv 2030, in particular, establishes the framework principles of urban development. These principles are designed to, among other things, protect the city from environmental, economic and social threats.

It notes the following:

- Lviv is a compact city.
- The city has a belt of opportunities.
- Lviv's green framework requires preservation and development.
- Public transport requires development.
- Sustainable urban mobility requires development.
- Centres and subcentres should be formed.¹

However, these strategic documents do not address all the dimensions of resilience envisioned in the Sendai Framework, and they need to be updated

in light of changing administrative and territorial boundaries and new, primarily military, hazards.

The urban resilience system is largely formed by institutions that have specialized areas of work in emergency response (warning system, support for veterans and internally displaced persons [IDPs], support for residents living in areas with potential chemical contamination, etc.), for which operational programmes to achieve resilience have been developed. However, they do not take into account all hazards and lack a cross-sectoral vision of ways to prevent them.

The Municipal Safety Commission, which enables intersectoral dialogue, is primarily concerned with responding to emergencies that have already occurred, but it lacks tools for assessing and preventing complex hazards.

The results of the survey among Lviv City Council institutions indicate that most institutions do not consider resilience issues as part of their daily work, except for some specialized structures. Resilience is mainly taken into account during activity planning, budget planning and civil protection training organized by the Civil Protection and Territorial Defence Department.

Recommendation: Resilience is partially integrated into the current and strategic activities of local authorities, but there is a need to update existing strategic documents to cover a wider range of threats and to develop a comprehensive resilience policy for the city.

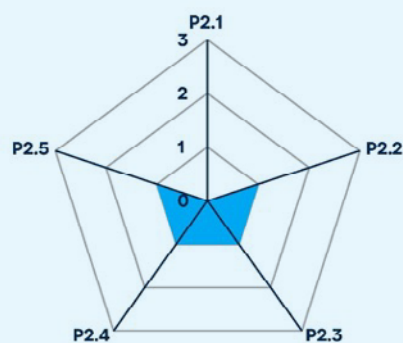
¹ More information about the principles of urban development introduced by the Integrated Development Concept: Lviv 2030 is available (in Ukrainian) at <https://drive.google.com/drive/u/0/folders/12Mz6HnLRvtUzZW0NnKGm1IPg1BShEVG>.

ESSENTIAL 2: IDENTIFY, UNDERSTAND, AND USE CURRENT AND FUTURE RISK SCENARIOS

Effective counteraction to threats requires a good understanding of them. This is built through regular monitoring, analysis of relevant indicators, and the development of emergency scenarios and hazard maps.

Принцип 02: Визначати, розуміти і використовувати сценарії поточних і майбутніх ризиків

P2.1	Чи знає керівництво міста про основні загрози, з якими стикається, та ймовірність їх виникнення?	0
P2.2	Чи існує спільне розуміння ризиків між керівництвом міста і різними постачальниками комунальних послуг та іншими регіональними і національними установами, які відіграють роль в управлінні інфраструктурою, такою як енергетика, водопостачання, дороги і залізниця, слабких місць і ризиків у масштабах міста?	1
P2.3	Чи існують узгоджені сценарії, що враховують вразливість міста та ступінь нараження відповідно до кожної небезпеки або групи загроз (див. вище)?	1
P2.4	Чи існує колективне розуміння потенційних каскадних збоїв між різними міськими та інфраструктурними системами за різних сценаріїв?	1
P2.5	Чи існують детальні карти небезпек та дані про ризики? Чи регулярно вони оновлюються?	1



Lviv has information on some types of hazards, but the lack of a common risk matrix makes it difficult to have a holistic understanding of the situation. Certain systemic risks, in particular in the areas of water supply, energy supply, transportation and health care, are known, but the survey results give reason to doubt that there is full cross-sectoral understanding of cascading effects between Lviv City Council institutions. A more detailed examination of this hypothesis would require additional research.

While scenarios for some emergencies exist, they are not sufficiently data-driven. Scenarios are best developed for military hazards, although some respondents to the survey indicated that scenarios also exist for medical, environmental, social and economic hazards. Likewise, hazard maps are not available for all hazards, and they need to be updated more regularly and to take a comprehensive approach to data analysis.

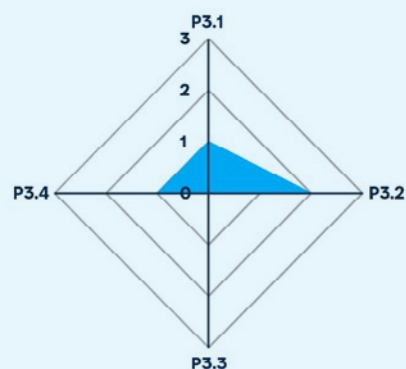
Recommendation: Wider application of data analytics, the creation of a common risk matrix, analysis of cascading impacts and updating of hazard maps would improve the city's run-off performance according to this essential.

ESSENTIAL 3: STRENGTHEN FINANCIAL CAPACITY FOR RESILIENCE

The importance of financial instruments to ensure resilience cannot be overstated. The city must continuously invest in the development of a sound financial strategy that enables an effective response to various hazards.

Принцип 03: Зміцнювати фінансову спроможність задля стійкості

P3.1	Міська влада / провідні установи розуміють усі джерела фінансування та «дивіденди стійкості», мають налагоджену комунікацію, розуміють усі доступні шляхи залучення зовнішнього фінансування та активно шукають кошти для великих інвестицій у підвищення стійкості.	1
P3.2	Чи має місто спеціальний «окремий» (захищений) бюджет, необхідні ресурси та механізми резервного фонду для зниження ризику стихійних лих на місцевому рівні (пом'якшення наслідків, запобігання, реагування та відновлення)?	2
P3.3	Який рівень страхового покриття в місті, по всіх секторах — бізнес та суспільство?	0
P3.4	Які стимули існують для різних секторів та сегментів бізнесу та суспільства для підтримки підвищення стійкості?	1



According to the survey results, the municipal budget remains the main financial source for Lviv City Council institutions. Although some respondents indicated that they have access to other financial instruments (leasing, public–private partnerships, etc.), the data do not provide grounds to suggest that they are widely used among Lviv City Council institutions. The city has a protected Municipal Reserve Fund, which is used to respond to emergencies, but not for disaster prevention measures. There are also some municipal programmes that provide for the allocation of funds for the implementation of protection measures (purchase of equipment and materials, construction work to reduce the consequences of disasters). In addition, specialized structures have stocks of necessary material resources (fuel, construction materials, etc.).

The city uses some tools that encourage the business sector to support resilience, such as voucher support for businesses introduced in 2023,² but they are not systematic. The survey results indicate that most respondents are aware of the existence of incentives for different sectors and segments of business and society to increase resilience to threats, and some of them are implementing such incentives (for example, partial compensation for the cost of a generator, partial financing of the production of various equipment for civil protection, financial support for relocated businesses).

Disaster insurance has minimal coverage in the city. This is a significant drawback of the local resilience system and calls for the development of new approaches to disaster insurance.

Recommendation: Strengthening financial capacity for resilience requires a comprehensive urban resilience policy to be developed that supports the principles of diversification of financial revenues, a culture of insurance and public–private partnerships.

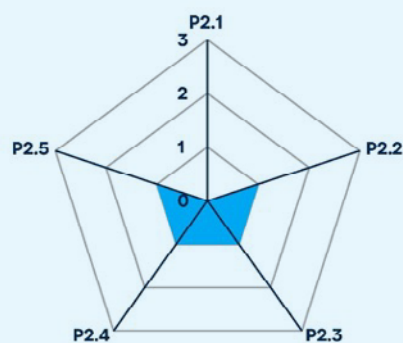
² See <https://www.cpp.lviv.ua/voucher/> and <https://investinlviv.com/voucher-business-support-of-the-lviv-city-council/>.

ESSENTIAL 4: PURSUE RESILIENT URBAN DEVELOPMENT AND DESIGN

Risk-based planning in urban development is being applied. This new practice for Ukraine has become critical to ensuring urban resilience in the face of Russian military aggression.

Принцип 02: Визначати, розуміти і використовувати сценарії поточних і майбутніх ризиків

P2.1	Чи знає керівництво міста про основні загрози, з якими стикається, та ймовірність їх виникнення?	0
P2.2	Чи існує спільне розуміння ризиків між керівництвом міста і різними постачальниками комунальних послуг та іншими регіональними і національними установами, які відіграють роль в управлінні інфраструктурою, такою як енергетика, водопостачання, дороги і залізниці, слабких місць і ризиків у масштабах міста?	1
P2.3	Чи існують узгоджені сценарії, що враховують вразливість міста та ступінь нараження відповідно до кожної небезпеки або групи загроз (див. вище)?	1
P2.4	Чи існує колективне розуміння потенційних каскадних збоїв між різними міськими та інфраструктурними системами за різних сценаріїв?	1
P2.5	Чи існують детальні карти небезпек та дані про ризики? Чи регулярно вони оновлюються?	1



As a result of the full-scale Russian invasion of 24 February 2022, urban planning principles in Lviv have undergone significant transformations. The success of projects led by [UNBROKEN](#), the “ecosystem of humanity”, has helped a human-centred, holistic approach become the standard

for urban planning in Lviv. The [UNBROKEN Mothers](#) project demonstrated how to implement a complex social project quickly and efficiently, and thus proved that Ukrainian specialists have unique experience and knowledge in sustainable urban planning, which other countries sometimes lack.

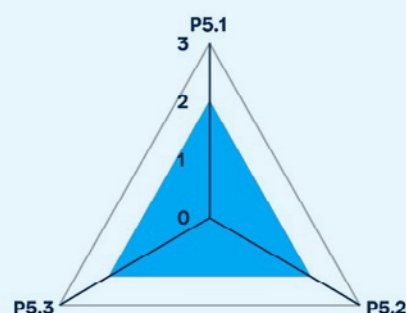
Recommendation: To improve the city’s performance in the area of resilient urban planning, there is a need to develop a common risk matrix, review existing zoning to expand the range of threats covered, and introduce regular monitoring of risk data and update relevant urban planning documentation based on its results.

ESSENTIAL 5: SAFEGUARD NATURAL BUFFERS TO ENHANCE THE PROTECTIVE FUNCTIONS OFFERED BY NATURAL ECOSYSTEMS

Natural assets perform ecosystem functions such as water supply, biodiversity development and climate change mitigation. The preservation and strengthening of protective functions directly affect the city's resilience to environmental threats, including natural disasters.

Принцип 05: Охороняти природні буфери для покращення захисних функцій екосистем

P5.1	Чи розуміє керівництво міста які екосистемні функції здійснюють природні активи (природні екосистеми) на благо міста?	2
P5.2	Чи просувається зелена та синя інфраструктура у великих проєктах міської забудови та інфраструктурних проєктах за допомогою політики та забезпечення допоміжними методичними матеріалами?	2
P5.3	Чи знає міська влада про екосистемні послуги, які місто отримує від природних активів за межами, її адміністративних кордонів? Чи існують угоди з сусідніми адміністраціями для підтримки захисту та управління цими екосистемами?	2



Preservation of the green framework is one of the principles of the *Integrated Development Concept: Lviv 2030*. And in 2019, as part of the Sustainable energy Positive & zero cARbon Communities (SPARCS) project, Lviv began its journey towards becoming a climate-neutral city by 2050. To achieve its strategic goals, the city is implementing projects on energy efficiency, climate change adaptation and sustainable mobility within the framework of the European Union's Horizon Europe and LIFE Programmes and developing sustainable practices.³

The results of the survey among Lviv City Council institutions indicate that there is incomplete

awareness and understanding of the functions performed by natural assets in the city and beyond its administrative boundaries. Respondents indicated that green and blue infrastructure is promoted through policy development, but there are few supporting guidelines for implementers.

Importantly, some of the respondents indicated that they have agreements with neighbouring communities on the proper management of natural assets, including solid waste management, environmental quality (including cooperation on the protection of forests, peatlands and water bodies), and support for the protection and management of ecosystems.

Recommendation: There is a lack of high-quality data analytics to develop a more comprehensive understanding of the importance of natural assets. Participation in international projects makes it possible to conduct relevant research with relevant analytics through knowledge exchange with foreign experts. However, there is an ongoing problem with the lack of local specialists who could initiate such projects. Through international and inter-municipal cooperation, the city authorities could increase their capacity to protect natural buffers to improve the protective functions of ecosystems. In particular, this cooperation could take place through localizing the [Lviv Oblast Climate Change Adaptation Strategy](#).

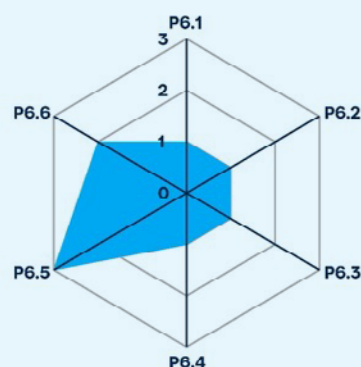
³ See, for example (in Ukrainian) https://tvoemisto.tv/exclusive/hto_taki_sadivnyky_lvova_i_dlya_chogo_vony_mistovi_118916.html.

ESSENTIAL 6: STRENGTHEN INSTITUTIONAL CAPACITY FOR RESILIENCE

In this regard, the process of strengthening institutional capacity for resilience is understood as establishing information and data exchange between citizens, institutions and communities and ensuring regular training.

Принцип 06: Зміцнювати інституційну спроможність заради стійкості

P6.1	Чи має місцева влада вільний доступ до всіх спеціалістів, які, на їхню думку, можуть знадобитися для зменшення ризиків та реагування на визначені сценарії стихійних лих?	1
P6.2	Чи проводиться скоординована кампанія з належного інформування громадськості про небезпеки, ризики та катастрофи у зрозумілій та доступній для застосування формі засобами масової інформації, органами освіти та ін.	1
P6.3	В якому обсязі відбувається обмін даними з іншими організаціями, задіяними у зміцненні стійкості міста.	1
P6.4	Чи існують навчальні курси, що охоплюють питання ризиків і стійкості, доступні для всіх секторів міста секторам міста, включаючи муніципальні організації, бізнес, НУО та населення?	1
P6.5	Чи доступні навчальні матеріали більшістю мов, якими користуються в місті?	3
P6.6	Наскільки активно прагне місто обмінюватися знаннями та вчитися в інших міст, які стикаються з подібними проблемами?	2



In the context of the military threat, the mobilization and emigration of part of the population has led to Lviv City Council experiencing a shortage of qualified personnel and increased staff turnover. This poses a challenge to institutional resilience. At the same time, specialized structures dealing with emergencies have been strengthened: the system for informing the public about hazards, risks and disasters has been improved, access to the necessary skills and experience to respond to risks has improved, and data exchange on risks has improved.

The results of the survey among Lviv City Council

institutions showed that the data exchange system is best established in the area of preventing and responding to military threats. At the same time, some respondents noted that there is a lack of capacity to collect the necessary data and process it.

Training courses on risk and resilience in various areas are conducted by the Human Resources Department of Lviv City Council and the Civil Protection Department. There are also a number of programmes to disseminate information about hazards, but they should be rethought to reach a larger proportion of the population.

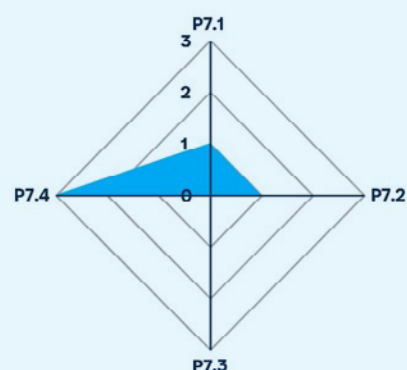
Recommendation: Through cooperation with other communities and cities, Lviv is increasing its institutional capacity. The results of a survey among Lviv City Council institutions showed that most institutions exchange experience with neighbouring communities and almost every structural unit has experience in sharing knowledge with other Ukrainian cities.

ESSENTIAL 7: UNDERSTAND AND STRENGTHEN SOCIETAL CAPACITY FOR RESILIENCE

Maintaining social cohesion, including through educational activities and trainings, as well as community involvement in disaster prevention and response measures, have a critical impact on the success of disaster risk management.

Принцип 07: Розуміти і зміцнювати суспільну спроможність заради стійкості

P7.1	Чи беруть участь місцеві громадські організації у заходах зі зниження ризику небезпек та ліквідації наслідків дії надзвичайних ситуацій у кожному районі міста?	1
P7.2	Чи проводяться регулярні навчальні програми для найбільш вразливих та нужденних верств населення в місті?	1
P7.3	Яка частка підприємств має документально підтверджений план забезпечення безперервності діяльності, який переглядався протягом останніх 18 місяців?	1
P7.4	Наскільки ефективно міська влада взаємодіє з громадянсьтю у питаннях ЗРСЛ?	2



In the context of the military threat, the awareness of key grass-roots organizations about the importance of measures to prevent and overcome threats, as well as the level of citizen engagement and awareness, has significantly improved. Volunteers and civil society organizations regularly participate in DRR and disaster management activities, which is confirmed by the results of the survey of Lviv City Council institutions. The respondents noted that volunteers and civil society organizations (CSOs) assist in accommodating IDPs and responding to emergencies caused by rocket attacks, and church leaders are involved in dealing with the consequences of power outages. However, civil society engagement is limited to certain threat groups, primarily the military.

The main channels of communication with residents regarding threats are: the Lviv City Council website, media, social media, radio, and mobile applications with alerts. Respondents also mentioned direct requests for access to information, and interaction with the public through civil protection specialists during relevant exercises. Some survey respondents mentioned the existence of a training programme on working with low-mobility groups to ensure free access to Lviv City Council institutions and facilities, a retraining programme for people of pre-retirement age, and a programme for providing emergency and systemic psychological assistance and psychosocial support.

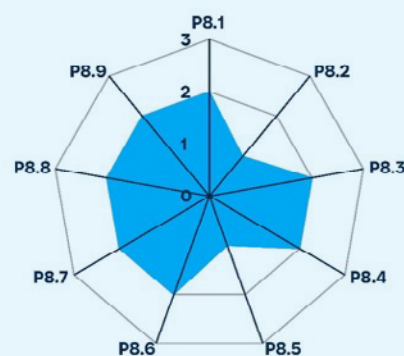
Recommendation: Regular exercises in threat prevention and counteraction that would cover a larger proportion of the population could increase the resilience of the Lviv community. In addition, interaction with the public on a wider range of threats needs to increase.

ESSENTIAL 8: ENHANCE INFRASTRUCTURE RESILIENCE

The essential encourages the evaluation of infrastructure resilience.

Принцип 08: Підвищувати стійкість інфраструктури

P8.1	Чи є стійкість критичної інфраструктури пріоритетом міста, чи має місто план або стратегію захисту критичної інфраструктури та чи впроваджує його?	2
P8.2	Чи добре розроблена та побудована наявна захисна інфраструктура з урахуванням інформації про ризики?	1
P8.3	Чи очікуються значні перебої з цими двома основними послугами для значної частини міста за узгодженими сценаріями стихійних лих?	2
P8.4	Чи очікуються значні перебої в послугах енергозабезпечення мешканцям значної частини міста в разі настання «найгіршого» сценарію? У разі збою коридори енергетичної інфраструктури залишаться безпечними для використання (тобто не матимуть ризику витоку, небезпеки ураження електричним струмом тощо)?	2
P8.5	Чи очікуються значні перебої в транспортних послугах мешканцям значної частини міста в разі настання «найгіршого» сценарію? У разі збою коридори транспортної інфраструктури залишаться безпечними для використання (тобто не матимуть ризику повеней, небезпеки ураження електричним струмом тощо) та вільними для проїзду?	1
P8.6	Чи очікуються значні перебої в послугах комунікації мешканцям значної частини міста в разі настання «найгіршого» сценарію?	2
P8.7	Чи має система охорони здоров'я достатньо можливостей для надання невідкладної медичної допомоги для лікування очікуваних значних травм за «найгіршого» сценарію?	2
P8.8	Яка частка закладів системи освіти під загрозою пошкодження за «найвірогіднішим» і «найгіршим» сценаріями?	2
P8.9	Чи буде в разі необхідності достатньо засобів реагування для швидкого реагування, ключно із військовими або цивільними?	2



Due to the lack of a common risk matrix, not all risks are taken into account when building infrastructure resilience. Military threats are the best addressed, with protective structures and shelters in place (in schools, hospitals and critical infrastructure). For example, in the water supply sector, there are scenarios for military threats or power outages. These include providing back-up power, water transportation, and access to available natural water sources. Also, critical infrastructure facilities (hospitals, heat and water supply companies, municipal institutions, telecommunications operators) are equipped with back-up power and alternative means of communication.

As a result of the COVID pandemic and the military threat (and the subsequent need to treat affected

military personnel), the city has significantly strengthened the resilience of its health-care and education systems. For example, the UNBROKEN ecosystem is developing, while educational institutions are provided with communications equipment, making it possible to conduct online learning and make changes to class schedules. Some educational institutions have opened “unbreakable” centres (places equipped with generators and other emergency equipment) to serve as a “safe place” in emergencies.

The city has significantly improved the provision of necessary equipment, primarily to respond to military threats. However, the resilience of the city’s infrastructure to other threat groups has received far less consideration.

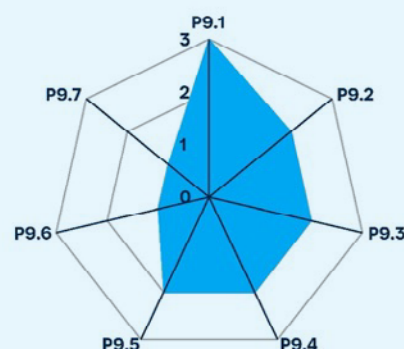
Recommendation: The city’s performance under Essential 8 could be improved by investing in protective infrastructure covering a wider range of threats. Since such projects require substantial investment, they need the cooperation of a wide range of stakeholders and the involvement of international organizations.

ESSENTIAL 9: ENSURE EFFECTIVE PREPAREDNESS AND DISASTER RESPONSE

Municipal disaster response mechanisms, including early warning systems, enable authorities, society and individuals to act promptly and reduce the number of human casualties and property damage.

Принцип 09: Забезпечувати ефективне реагування на катастрофи

P9.1	Чи є у міста план або стандартна операційна процедура щодо ранніх попереджень і прогнозів? Яка частина населення охоплюється системою раннього попередження?	3
P9.2	Чи існує план попередження та реагування у випадку стихійних лих (план готовності/план реагування на надзвичайні ситуації, в якому вказано заходи щодо зниження наслідків, рівень готовності та засоби реагування на надзвичайні ситуації на місцевому рівні)?	2
P9.3	Чи має відповідальний орган з управління надзвичайними ситуаціями достатній кадровий потенціал для підтримки обов'язків служб ліквідації наслідків у наступу випадку різкого настання стихійного лиха?	2
P9.4	Чи чітко визначено потреби в обладнанні та спорядженні, а також наявність обладнання?	2
P9.5	Чи зможе місто продовжувати годувати й давати притулок населенню після наступу стихійного лиха?	2
P9.6	Чи існує оперативний центр екстреного реагування за участю всіх установ, який автоматизує стандартні операційні процедури, спеціально розроблені для роботи за «найвірогіднішими» та «найгіршим» сценаріями?	1
P9.7	Чи залучають до тренувань і громадськість, і професіоналів?	1



Under martial law, the city's warning system covered more than 90 per cent of the population through street systems, social networks and mobile applications. An information campaign was also conducted among the population on personal disaster supplies, and cooperation was established with volunteer structures, NGOs and support funds. There are workshops on how to respond to certain threats, but only for professionals. There is a need for wider public involvement, while noting that lecture format is common, but there are not enough workshops.

For some natural disasters, the contingency plan is well developed (e.g. fire, missile threat), while others need to be finalized. In addition, in the area of military threats, the needs have been identified and tools have been developed to obtain the necessary personnel, including a system for meeting the needs of IDPs and volunteer patrol groups. Separate scenarios have been worked out for receiving a large number of IDPs, organizing volunteers for patrolling, and meeting water supply needs.

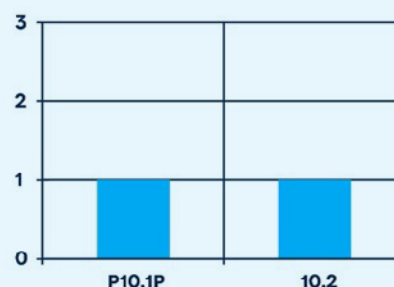
Recommendation: While the city's emergency response system is effective, the disaster prevention system could be improved. This could take the form of the development of a risk matrix, regular collection and analysis of risk data, and regular updating of risk maps.

ESSENTIAL 10: ACCELERATE RECOVERY AND BUILD BACK BETTER

This essential involves finding out whether there are strategies for recovery, rehabilitation and reconstruction after disasters and whether they are aimed at improving the urban environment.

Принцип 10: Прискорювати відновлення і відбудувати ліпше ніж було

P10.1	Чи існує стратегія або розроблений процес для відновлення й реконструкції після стихійного лиха, включаючи переавантаження економіки, соціальні аспекти тощо?	1
P10.2	Чи включають процеси оцінки, що проводяться після стихійного лиха, аналіз помилок/невдач і здатність виносити отримані уроки, які потім враховуються при розробці й виконанні проектів реконструкції?	1



Lviv has adopted strategic documents that lay the groundwork for a long-term transformation to climate neutrality and sustainability. Among these documents is the *Integrated Development Concept: Lviv 2030*, which declares the need for a compact city, the preservation and development of the natural framework, the development of subcentres, sustainable urban mobility, and other aspects of an integrated approach to urban planning and development. The Concept is also complemented by the Sustainable Urban Mobility Plan until 2030, the Sustainable Energy and Climate Action Plan, and the Green City Action Plan. The existence of such long-term goals gives reason to believe that the transformation processes, which include restoration, will be of a “build back better” nature.

However, these strategies do not consider resilience and recovery as part of the transformation process. Instead, the COVID-19 pandemic and the full-scale invasion have demonstrated that resilience must be

integrated, strategic plans must be complemented by operational plans to respond to threats, and recovery is an important component of responding to threats in the medium and long term.

The active work on reconstruction and recovery from natural disasters, which has been under way since the beginning of the full-scale invasion of Ukraine, through the implementation of the measures listed below, is not comprehensive. The measures currently being implemented at the local government level include: organizing temporary measures for damaged facilities; arranging temporary housing; a policy on the procedure for providing assistance for inspection, repair and debris removal; organizing counselling and personal support; organizing support for citizens; organizing the restart of the economy; improving city planning and operational activities during reconstruction; infection control measures and epidemic action plans.

Conclusions

The self-assessment tool allows users to not only to assess the resilience of a city, but also to compare the responses of different cities (grey segment of the graph). This way, we can see that, first of all, Lviv does not meet the average results for Essentials 2, 3, and 4:

Essential 2: Identify, understand, and use current and future risk scenarios

Essential 3: Strengthen financial capacity for resilience

Essential 4: Pursue resilient urban development and design

Measures that will increase the city's resilience according to these principles can include:

1. Developing a risk matrix based on a study of the main threats to the city. Complementing it with an analysis of cascading effects.
2. Developing a community resilience strategy that will complement existing community strategic plans and help build the capacity of local authorities.
3. Identifying indicators to prevent threats and introducing regular monitoring.
4. Ensuring diversification of financial revenues of Lviv City Council departments and institutions to respond to threats.

Despite the need for continuous improvement, the Lviv community is currently actively resisting the threats inherent in military operations and is supporting the implementation of long-term goals related to climate neutrality and the city's sustainable. It is important to scale this experience in Lviv and share it with other communities in Ukraine by forming a Resilience Hub based on the Lviv community.



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