

Rebuilding Ukraine: Lithuania's long-term plan

Current situation analysis
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Img 1. Cover image: map of Europe showing Ukraine and Lithuania. Scheme by the authors.

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1. INTRODUCTION

Ever since 2013 Russia has started war on Ukraine. On February 24, 2022, Russia launched a wide-ranging attack on Ukraine, causing numerous destructions, losses, destroying life at every turn. Almost all regions of the country continue to suffer damage and destruction of the infrastructure of varying severity.

At the time of the production of this document Lithuania had declared 4 planned actions in Kyiv region, two of which were planned in the city of Borodyanka. The planned projects consist of 36 units of mobile houses and the reconstruction of School No.1 in Borodyanka, Reconstruction of the kindergarten in city of Irpin and the bridge over the Trubizh river connecting Kyiv and Sumy regions.

Additionally, Lithuania is working on the future proposals for the rebuilding. The proposals include creating digital twin models, BIM modelling and the implementation of

energy efficiency certification in the rebuilding processes. The current situation analysis is used to give an overview of existing data, projects, capacities, needs and limitation. The gathered data provides the needed evidence for development of proposed action and allows to make an informed decision on a way forward.

It is important to note that due to the uncertainty raised by the events of war, the data provided can change very rapidly. This document represents the current situation in Ukraine as of October 15th, 2022, except of information under section "Lithuania's planned actions", which reflects data as of November 17th, 2022.



2 pav. Euromaidan protest in Kyiv in 2014 that led to russia's war against Ukraine. Source: https://uk.wikipedia.org/wiki/%D0%A4%D0%B0%D0%B9%D0%BB:%D0%BB:SSstate_flag_of_Ukraine_carried_by_a_protester_to_the_heart_of_developing_clashes_in_Kyiv_Ukraine_Events_of_February_18_2014.jpg

2. WHY IS REBUILDING UKRAINE IMPORTANT FOR LITHUANIA?

Ukraine is the second largest European country¹. Before the war on February 22, 2022, Ukraine was also the 8th most populous county in Europe with a population of around 41 million people². Due to its extensive fertile land, pre-war Ukraine was one of the largest grain exporters in the world³. The largest nuclear power plant in Europe, and among the 10 largest in the world, the Zaporizhzhia Nuclear Power Plant⁴, is in Ukraine as well. Hence, Ukraine influences all of Europe regarding food, energy, economy, as well as other fields.

- Lithuania has long supported Ukraine in the fight for freedom. The two countries have geopolitical similarities. By late October more than 60 000 Ukrainians have fled to Lithuania as refugees since the beginning of the war. Therefore, it comes to no surprise that Lithuania agreed to participate in Ukraine's rebuilding and is now looking into sharing the expertise in several topics to provide the needed aid. Looking at the scope of impact that Ukraine has on Europe and the level of destruction the country has experienced, it becomes clear that Lithuania's participation in Ukraine's rebuilding not only can provide for the partnership of the two countries but also have a long-lasting impact on several topics.

1 "Ukraine country profile," BBC News, March 1, 2022, <https://www.bbc.com/news/world-europe-18018002>.

2 "Population (by estimate) as of 1 January 2022," ukrcensus.gov.ua, Accessed 24 October 2022, https://web.archive.org/web/20210306154326/https://ukrstat.org/en/operativ/operativ2020/ds/kn/xls/kn1220_ue.xls.

3 "World Trade Report 2013," World Trade Organization, Accessed 24 October 2022, https://www.wto.org/english/res_e/publications_e/wtr13_e.htm.

4 "Nuclear Power Plants in Lithuania & Ukraine". In-dustcards.com, Archived from the original on 9 December 2012, Accessed 24 October 2022, <https://archive.ph/20121209092440/http://www.industcards.com/nuclear-lt-ua.htm>.

- **Helping Ukraine in order to restore European energy capacities;** Lithuania's input in the common effort for stabilizing energy supply infrastructure and assurance of building energy efficiency is directly linked to the whole energy field that influences all of Europe's energy capacities;
- **Gaining expertise and tools for future development of Ukraine and Lithuania;**
The knowledge obtained working on complex multi-party reconstruction projects at the time of uncertainty provides great expertise and tools that can be adapted for the future use resulting in a more sustainable Ukraine and Lithuania;
- **Building capacity, both on Lithuanian and Ukrainian sides, for future international partnerships** with organizations, countries and institutions involved in the rebuilding process (Kyiv School of Economics, European Investment Bank, Hope Foundation USA, etc.);
- **Strengthening the basis for future economic cooperation;**
Rebuilding infrastructure in a planned matter will help to restore Ukrainian local economic ecosystems faster, which therefore would further influence the restoration of Ukraine's economy and influence surrounding economies as well.



LITHUANIA

UKRAINE

3. SITUATION IN UKRAINE

In 2013, a series of mass demonstrations, known as the Euromaidan, erupted across Ukraine, eventually escalating into the Revolution of Dignity in 2014, which led to the establishment of a new government and pro-russian unrest. During this period, russian troops invaded the Crimean Peninsula, which was later annexed by russia.

The pro-russia unrest in Ukraine's Donbas culminated in russia-backed separatists seizing territory throughout the region, sparking the War in Donbas. This series of events marked the beginning of the ongoing russia's war against Ukraine, and lead to a major escalation of the conflict in February 2022.

On February 24, 2022 russia launched a full-scale invasion of Ukraine, causing numerous destructions, losses, destroying life at every turn which continues to this day.

As of the 15th of October, the data includes:

- **~6 000 civilians killed;**
- **~10 000 civilians injured;**
- **~7 000 000 internally displaced people (IDP);**
- **~7 500 000 refugees in European countries;**
- **~74 000 000 m² of infrastructure destroyed.**

Img 4. Map of Europe showing Ukraine. Scheme by the authors.

3.1 Kyiv region

Kyiv region (oblast) is the surrounding region of capital city Kyiv. The region surrounds but does not include the city of Kyiv which is a self-governing city with a special status. Before the war the population of Kyiv Oblast was 1 788 530 people⁵. The majority of region's population significantly depends on the urban economy and transportation of Kyiv city.

Most of the region's population significantly depends on the urban economy and transportation of Kyiv city.

Due to the close proximity to the capital, it was one of the harder hit regions. After the deoccupation of the region as of 15th October the destroyed infrastructure includes⁶:

- **167 schools;**
- **1 402 km of roads;**
- **122 health facilities;**
- **7 451 000 m² of housing.**

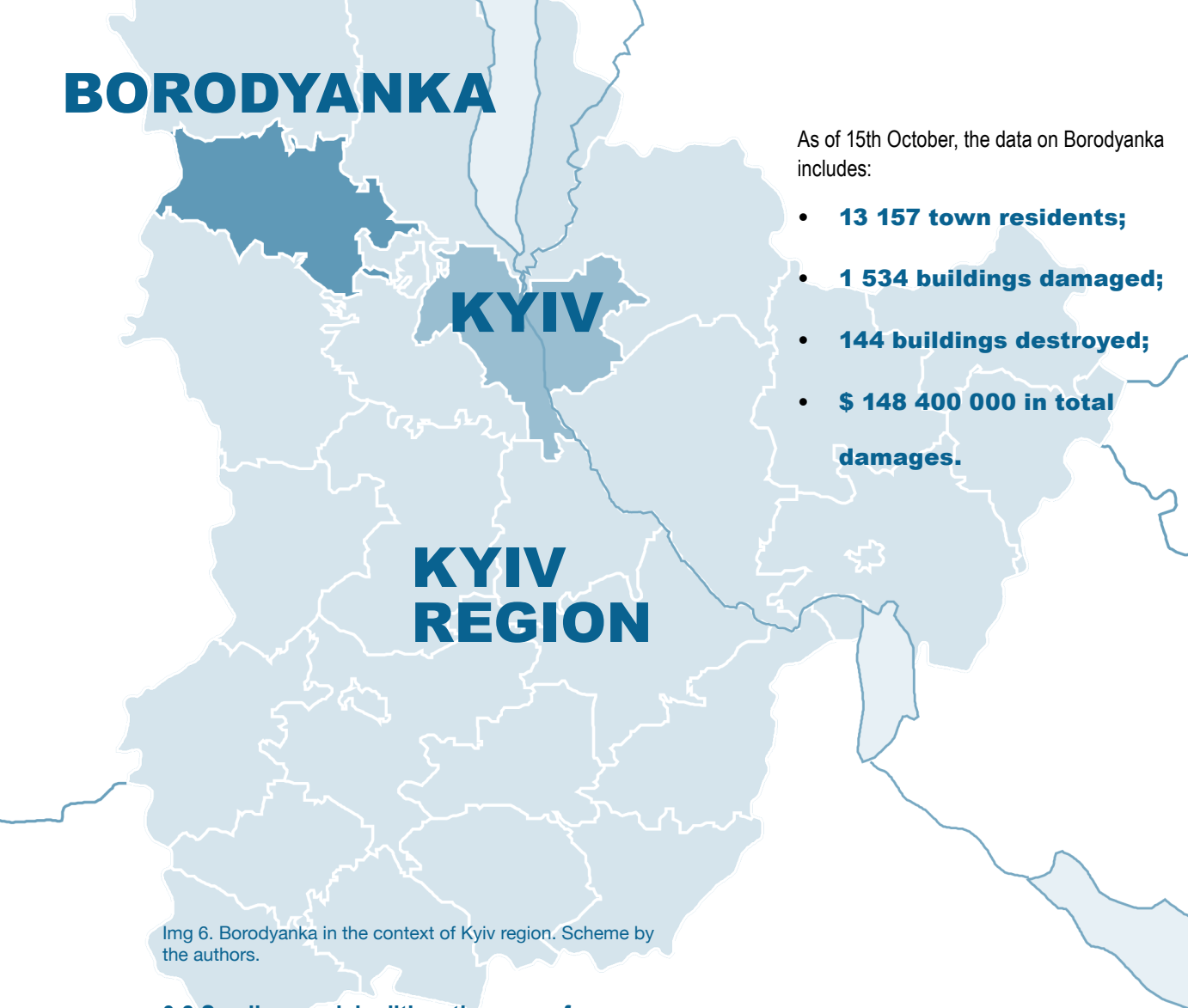


Img 5. Kyiv region in the context of Ukraine. Scheme by the authors.

5 "Чисельність наявного населення України на 1 січня 2021" (Number of Present Population of Ukraine, as of January 1, 2021), Ukrstat.gov.ua, Accessed 26 October 2022,

6 "Map of damages: Kyiv region", Recovery of Ukraine, Accessed 24 October 2022, <https://recovery.gov.ua/en>.

BORODYANKA



As of 15th October, the data on Borodyanka includes:

- **13 157 town residents;**
- **1 534 buildings damaged;**
- **144 buildings destroyed;**
- **\$ 148 400 000 in total damages.**

Img 6. Borodyanka in the context of Kyiv region. Scheme by the authors.

3.2 Smaller municipalities: the case of Borodyanka

Many smaller municipalities around bigger cities such as Kyiv, Kharkiv, Mykolaiv, Zaporizhzhia and others were drastically impacted during the attacks⁷. There are plenty of such examples in the Kyiv region that happened during the attacks on the capital city. Borodyanka's municipality is an example of heavy russian artillery attacks even though there are no military units, warehouses, or objects of strategic importance in Borodyanka. This fact did not prevent russian forces from destroying all the key administrative buildings and causing sufficient damage to the housing stock.

At the beginning of the russian invasion, fierce battles were fought in Borodyanka: according to eyewitnesses, russian planes fired rockets at residential buildings at low altitudes. As a result, the central street of the town turned into ruins — destroyed apartment buildings, fallen trees, and burnt cars. Bomb shelters could not save people: basements were also destroyed due to the scale of the shelling.

The information gathered during the interviews with local and international stakeholders confirms that the smaller municipalities are having a difficult time involving international partners in the rebuilding processes as they often lack the capacities in communication, management processes, knowledge regarding rebuilding processes and other fields while dealing with the devastating amounts of destruction and finding the sustainable solutions for it.

⁷ "Ukraine Situation Report," OCHA, Accessed 26 October, 2022, https://reports.unocha.org/en/country/ukraine?_gl=1%2a8fqkd8%2a_ga%2aNjl2NDkwMjl2LjE2N-jM1OTA5Mjg.%2a_ga_E60ZNX2F68%2aMTY2Njc3Mjk4O-C41LjEuMTY2Njc3MzAxNy4zMS4wLjA.



Img 7. Borodyanka, Kyiv Oblast, on 2 March 2022 after the Russian shelling of the town. Source: <https://euromaidanpress.com/2022/03/06/close-the-sky-or-how-russia-bombed-out-my-town-of-borodyanka/>

3.3 Conclusions

It is crucial to understand that Ukraine as the biggest country in Europe has a great impact on the region in several sectors including but not limited to energy, food, and economy. During the Berlin conference on creating post-war Ukraine the overall damages calculated by the World bank were \$349 billion while Ukraine's calculations for the repairs of damages caused by the war add up to a total of \$750 billion⁸.

It is important to understand that even though the amounts for needed funding are high, the money is not the only need. Smaller municipalities, cities and towns of affected areas have need for capacity building and tools for sustainable project management which would help to achieve faster and smoother processes in rebuilding the infrastructure. Hence, it is crucial to include these needs in the long-term plans. For this, the future chapters look deeper into the current situation but also provide information on long-term sustainable solutions on rebuilding.

8 Thomas Escritt, "Berlin conference lays out vision of post-war Ukraine," Reuters, October 25, 2022, <https://www.reuters.com/world/ukraines-marshall-plan-berlin-gathering-weighs-750-bln-rebuilding-2022-10-24/>.

4. NEEDS

This chapter will provide a deeper dive into the pallet of Ukraine's needs for the rebuilding. The needs are categorized into immediate, especially those related to the upcoming winter, and long-term needs that are more overarching through the whole rebuilding processes. More details are provided in the following chapters.

4.1 Immediate needs

Immediate needs are of high priority, and their focus is speed. Therefore, the needs often get covered quickly and the information changes rapidly. The needs described in this chapter are identified during the research period between 15th Sept. – 21st Oct 2022. As mentioned before, the research mostly covers the town of Borodyanka which is under the scope of Lithuania's planned actions. However, while the numbers may vary, the needs in different regions and towns are rather similar.

Immediate needs of Borodyanka (based on the information provided by local representatives):

- Water supply systems;
- ~700 units of housing;
- Sanitation such as wastewater management systems;
- • Following the escalated russia's attacks of energy infrastructure since Oct. 10th Ukraine's energy grid has become unstable which directly affects the heating supply in most regions. While the heating supply in Borodyanka has not been identified as a need, it is important to follow the situation closely.

Some of the needs are already being covered by international partners including representatives from both public and private sectors in Netherlands, Poland, Lithuania, and others. However, clear information regarding the projects is difficult to identify. Housing is still the biggest immediate need in Borodyanka and many other regions as well.



Img 8. russia sabotages water pipe to Mykolaiv. Source: <https://www.npr.org/2022/10/08/1127303154/ukraine-mykolaiv-water-supply>



Img 9. A temporary housing settlement for 350 people in Lviv, western Ukraine.
Source: <https://www.opendemocracy.net/en/odr/russia-ukraine-war-housing-crisis-displaced/>

4.2 Intermediate needs

Intermediate needs are the ones to be expected to be covered in the upcoming 12 months. The intermediate needs mostly cover public infrastructure and buildings needed for the operation of the urban areas. Currently one of the schools in Borodyanka is still operating, however due to the lack of public buildings which were destroyed by Russia, most of the public institutions are operating from the school building.

Intermediate needs of Borodyanka:

- 3 schools (including school furniture, books, computers etc.);
- Hospital and its premises,
- Kindergarten;
- Pharmacy;
- Clinic;
- Municipality administration building;
- Factories;
- Streetlights;
- Other public buildings (police station, fire station and other).

4.3 Long-term needs

Long-term needs are rather broad as they are set over a span of time and might adjust and be specified in the future. They cover long-lasting processes of rebuilding. Due to the broadness of the long-term needs, this chapter is separated into 3 topics which are detailed further.

4.4 Data

For more sustainable manner and faster decision making there is a crucial need for data on demolished infrastructure, existing buildings, zoning plans, public interest, and other related information. Some of the listed information is set and/or defined by local laws, however the level impact on buildings, reconstruction possibilities and public opinion might be impacted by the time passed since the beginning of the war. A wide number of national and international projects keep being implemented, so it is important to keep all the updated information in one place for better cooperation and shared knowledge. There are plenty of online information websites, however not all have clear data, dates and/or sources. A lot of information that is presented in this document was shared by local representatives, which at this moment is the most updated source on the current situation.



Img 10. IOM medical team assisting displaced persons in a collective centre in Yavoriv, Lviv Region. Source: <https://www.iom.int/news/displacement-ukraine-again-rise-iom-data-shows>

Img 11. Volunteers clear rubble in a residential area, in the village of Novoselivka, near Chernihiv, Ukraine. Source: <https://apnews.com/article/russia-ukraine-kyiv-fires-b1e48d9e788c36e3a83ed1eb9ef38d60>



4.4.1 Communication

In order to gather updated information from local representatives as the most reliable source on site constant communication is needed. From outside perspective (such as the perspective of Lithuania) there is a very big need to have the upmost updated information to navigate the situation from the outside, understand the very current needs and work done by other parties. However, planned communication is difficult to achieve at the moment due to destroyed infrastructure, constant air rides and other threats.

Some municipalities do not have dedicated people for communication with foreign partners. In such cases, as seen in Borodyanka, mayors take charge because it is easier and faster than going through the president's office or the ministries to navigate the aid.

However, it is essential to understand that Ukrainian representatives are overwhelmed by the attention from international organizations, countries, and other stakeholders asking them about their needs and bringing delegations providing rather underwhelming results of the cooperation. With that in mind it is important to be very specific in the discussions and have a clear objective and expected results in mind.



Img 12. IOM staff and local authorities discuss the needs of internally displaced persons in front of a damaged school in Zhytomyr centre. Source: <https://www.iom.int/news/needs-growing-over-8-million-internally-displaced-ukraine>

4.4.2 Capacity

Social, economic and knowledge capacities of both Ukrainian and Lithuanian partners are factors of the long-term project sustainability. The case of Borodyanka showcases that some of the smaller municipalities in Ukraine might lack the capacities of people and/ or knowledge for international partnerships as they have not organized such cooperation before the war. This might prolong decision making as well as the overall processes of the rebuilding projects. It is possible to find Ukrainian partners with the needed capacities outside of the municipalities such as Borodyanka. However, it is also important to use this opportunity for capacity building and provide the tools for local stakeholder growth over time.



Img 13. Volunteers clear rubble in a residential area, in the village of Novoselivka, near Chernihiv, Ukraine. Source: <https://apnews.com/article/russia-ukraine-kyiv-fires-b1e48d9e788c36e3a83ed1eb9ef38d60>

4.5 Conclusions

Keeping in mind the vast amount of international aid coming into Ukraine, it is vital to remember that the needs of Ukraine should be taken as the main focus for any rebuilding, development, humanitarian, or other aid projects. Both the amount of projects and speed of project development are very influential to the current needs of Borodyanka and are rather difficult to follow by using just online sources. That is why communication with local representatives is one of the main factors in the projects. It is crucial to base any planned actions on the actual needs and ensure the project sustainability in the future. Thus, the main topics discussed in this chapter prevail as the pillars for the future project development: data, communication, and capacity.

5. INTERNATIONAL AID

During Ukraine Recovery Conference⁹ in Lugano (Lugano Conference) the international community has expressed its commitment in supporting Ukraine throughout its path from early to long-term recovery. The high representatives of 40 countries as well as representatives of the Council of Europe, the European Bank for Reconstruction and Development, the European Commission, the European Investment Bank and the Organization for Economic Cooperation and Development signed the Lugano Declaration laying out a set of principles for rebuilding Ukraine.¹⁰The Declaration's Preamble ends with a reference to continuation principle that indicates that parties "...welcome the offer of the United Kingdom to host the next conference".¹¹

While the next conference is yet to be organized, the raise of different initiatives both at international level and inside Ukraine, dedicated to rebuilding of Ukraine, should be considered. Especially, in the light of the initial approach to rebuilding process reflected in the Lugano Declaration, that contains a clear reference to a territorial principle. Meanwhile, it is important to mention that Lithuania decided to focus on Kyiv region in its short-term reconstruction projects,¹² which will be reviewed under "Lithuania's planned action" chapter.

At the same time, the International Expert Conference on the Recovery, Reconstruction and Modernization of Ukraine took place at the end of October, 2022 in Berlin.¹³ The conference aimed to be a think-tanks cluster

for scientists and experts, international organizations, representatives of civil society and the private sector working on five sectors of the reconstruction of Ukraine to provide an expert recommendations for the way forward.¹⁴ The vision of Ukrainian representatives was supported by three guiding principles that are reflection of the three main stages of subsequent aid presented earlier during the Lugano Conference. In the following subchapter it will be reviewed.



Img 14. Ukraine, Allies Adopt Principles For Reconstruction. Source: <https://www.rferl.org/a/ukraine-reconstruction-lugano-conference/31929869.html>

9 Lugano Declaration, Ukraine Recovery Conference in Lugano, Switzerland, Accessed 24 October 2022, https://reliefweb.int/attachments/67d33cee-ad0f-44ec-a780-81f09320ee72/urc2022_lugano-declaration.pdf.

10 Ibid

11 Lugano Declaration, Preamble

12 "Lithuania co-creates the future of Ukraine," Lithuania Co-create, Accessed 4 November 2022, <https://lithuania.lt/governance-in-lithuania/lithuania-co-creates-the-future-of-ukraine/>.

13 "Donor platform to help rebuild Ukraine," The Federal Government, Accessed 7 November 2022, <https://www.bundesregierung.de/breg-en/news/ukraine-recovery-conference-2129426>.

14 Ibid



Img 15. Ukrainian Prime Minister Denys Shmyhal speaks during a plenary session at the Ukraine Recovery Conference URC, in Lugano. Source: <https://www.euractiv.com/section/europe-s-east/news/ukraine-estimates-cost-of-reconstruction-at-750-billion/>

5.1 Territorial vs sectoral approach

Some examples of territorial based approach in rebuilding of Ukraine can be found in the information published by one of Verkhovna Rada of Ukraine's Committee¹⁵ after the Lugano Conference. They consist of the following division, where the first part indicates responsible country (countries) and the second – specific city or territory in Ukraine effected by the war: Italy – Rivne; Germany – Chernihiv; Canada – Sumy; USA and Turkey – Kharkiv; Czech Republic, Finland and Sweden – Luhansk; Belgium – Mykolaiv; Sweden and the Netherlands – Kherson; Switzerland – Odesa; Norway – Kirovohrad region; Latvia – Zaporozhye; Poland and Italy – Donetsk.

The subsequent aid from states should be divided into three main stages:

1. Restoration here and now of objects critical to people's lives;
2. Restoration of schools, hospitals, construction of temporary housing after the end of hostilities;
3. Long-term transformation in various areas.¹⁶

The preliminary analysis of effectiveness of the territorial principle for rebuilding of Ukraine by international partners can be partially done in regards of the first stage. The effort of the countries that are actively supporting Ukraine was scrutinized. For instance, one of the immediate responses to the lack of housing for the internally displaced people in Ukraine was given by Poland in form of mobile housing. The Centre for internally displaced people was established in the west part of Ukraine, namely Lviv, for 350 people (mobile housing).¹⁷ Other mobile housing units were delivered to Borodyanka in Kyiv region¹⁸, where Lithuania has already kicked off two out of three emergency reconstruction projects.

¹⁵ “Країни світу допомагатимуть відновлювати регіони та міста України,” Децентралізація, Accessed 26 October 2022, <https://decentralization.gov.ua/news/15192?f-bclid=IwAR0RXQrr0db6kySNT5pCCu9CEwqtgkQeHFRFH-9BHBncv7nAYCvD43CvfWck>.

¹⁶ Ibid

¹⁷ “We can't leave our Ukrainian neighbours alone”: Polish PM,” Polskie Radio S.A., April 19, 2022, <https://www.polskieradio.pl/395/9766/Artykul/2941888>.

¹⁸ Announcement from 21 May 2022 by Mykola Lyashenko, Head of the Buchansk District Military Administration, Facebook post, see also Олександр Попов, “У Бородянці вже монтують модульне містечко для постраждалих від війни,” КИЇВВЛАДА, May 22, 2022, <https://kievlast.com.ua/news/u-borodyantsi-vzhe-mon-tuyut-modulne-mistechko-dlya-postrazhdalih-vid-vijni?nore-direct=true>.

3.1 Conclusions

These examples, along with others in progress, may serve for consideration of initial insights to the first stage of immediate restoration. Obviously, there is no obligation for the states to be attached solely to the given territorial division, however some may argue that so was expected after the Lugano Conference. The closer look at the international partners' engagement to Ukraine's recovery process based on gathered information resulted in the next conclusion:

Despite the declared territorial division, the active reconstruction and critical support are often shaped by

- 1) immediate needs of Ukrainian cities, villages, and communities;
- 2) human resources of recipients of the help;
- 3) various Ukrainian initiatives that facilitate help on the ground.

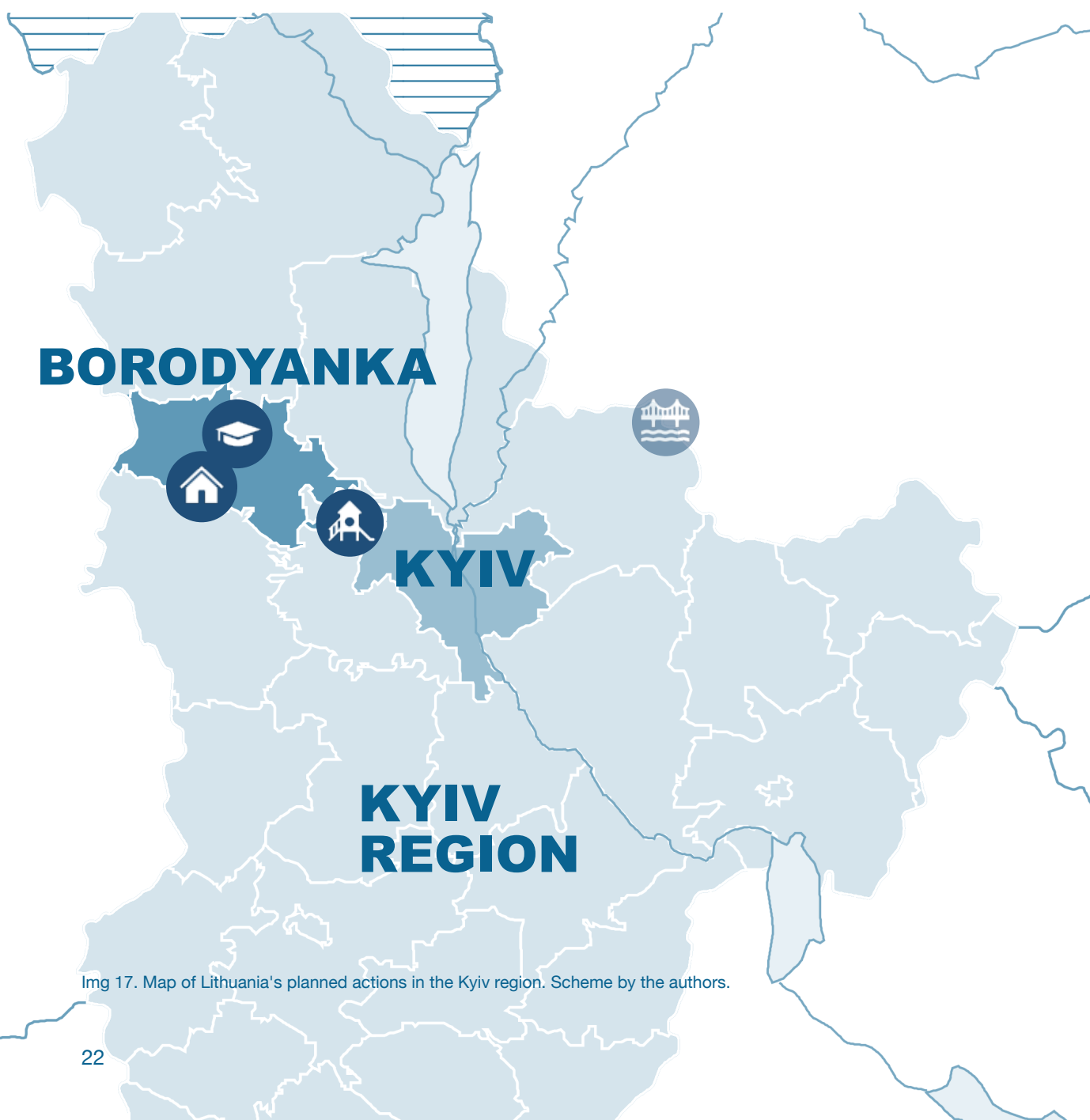
This could be explained by the fact that the countries that dedicated themselves to the territories that are still under occupation focus on de-occupied regions, and the situation in Ukraine changes rapidly due to active phase of the Russia's war against Ukrainian war. Consequently, the amount of help for the first stage is increasing dramatically and require effort from more than one state.



16 pav. Lithuanian Prime Minister Ingrida Simonyte in Ukraine. Source: <https://www.delfi.lt/en/politics/lithuanian-pm-pays-visit-to-ukraine.d?id=89942653>

4. LITHUANIA'S PLANNED ACTIONS

To meet some of the immediate needs in Ukraine, Lithuania has initiated several rebuilding projects. Due to Lithuania's capacity and the existing partners, the scope of the initial projects was chosen to be in the Kyiv region. More detailed information on the rebuilding projects is provided below.



Img 17. Map of Lithuania's planned actions in the Kyiv region. Scheme by the authors.

4.1 36 mobile houses in Borodyanka



Construction of a mobile residential settlement for 36 families of IDPs in the town of Borodyanka (where around 700 families are currently in need of housing).

Priority – high

Dates: To be delivered before winter 2022.

Price: approx. value of 1 mln EUR.

Responsibilities:

Organization: Ministry of Economy and innovation (LT) and Municipality of Borodyanka (UA);

Procurement: Centrinė perkančioji organizacija (CPO) (LT);

Third party to be selected.

What has been done?

Memorandum signed.

What else is needed?

Procurement of the mobile housing;

Delivery.

Img 18. Borodyanka, a commuter town not far from the capital, Kyiv. Source: <https://www.nytimes.com/2022/04/05/world/asia/ukraine-civilians-russia-borodyanka.html>



4.2 School No1 in Borodyanka



Restoration of a school for 700 children in Borodyanka.

Priority – medium.

Dates: Planning and design by December 2022;

Construction work start – February 2023;

Open by September 2023.

Price: The approx. amount of necessary investment is 5 mln EUR

Responsibilities:

Procurement: Central Project Management Agency (CPMA) (LT);

Reconstruction monitoring: CPMA and Borodyansky Settlement Council Buchansky District of Kyiv Region (UA);

What has been done?

Memorandum signed (CPMA and UA) (2022-10-28);

Finished procurement of the Technical work project preparation and project supervision service (CPMA);

Service: Signed Agreement with Architects Bureau "OKSA" (2022-11-11) (CPMA and UA);

What else will be done?

Restoration permit document (UA);

Procurement of the Technical supervisor (CPMA);

Procurement of the Restoration (CPMA);

Restoration work (UA; supervisor - CPMA).

What else is needed?

Furniture, computers, books, etc.



Img 19. Many of Ukraine's schools are destroyed limiting the access to education for the children. Source: <https://www.abqjournal.com/2528928/its-back-to-school-in-ukraine-but-far-from-normal.html>



Img 20. Lithuania has expertise in rebuilding educational infrastructure in Ukraine. A concrete example of that is the school in Adjivka which was opened in 2021. Unfortunately, the school was hit during the recent attacks from Russia and was again demolished. Source: <https://www.pozicija.org/karas-ukrainoje-simtas-astuonioliktoji-birzelio-21-diena-2/>

4.3 Kindergarten in Irpin



Renovation of the kindergarten “Radist” in the town of Irpin for around 300 children.

Priority – medium.

Dates:

Planning and design by December 2022;

Renovation work start - February 2023;

Open by September 2023.

Price: approx. amount of investment needed is 3,7 mln EUR.

Responsibilities:

Procurement: CPMA (LT);

Renovation monitoring: CPMA and Municipality of Irpin (UA);

Technical design: Architecture-Construction Company - Sigma Bild;

What has been done?

Memorandum signed (CPMA and UA) (2022-10-28);

What else will be done?

Renovation permit document (UA);

Procurement of the Technical supervisor (CPMA);

Procurement of the Renovation (CPMA);

Renovation work (UA; supervisor - CPMA).

What else is needed?

Furniture, computers, books, etc.

4.4 Bridge over the Trubizh river

Reconstruction of a bridge over the Trubizh river, connecting Kyiv and Sumy regions, importance for the economic viability of both.

The foreseen approx. amount of needed investment is 2,2 mln EUR.*

*Initially the bridge over Trubizh river was among 4 rebuilding projects that Lithuania has agreed to fund, but eventually the reconstruction has been funded by other sources.

4.5 Conclusions

Lithuania has taken up the responsibilities of developing four projects in the Kyiv region: 36 mobile houses and the school in Borodyanka, Kindergarten in Irpin and the Bridge over Trubizh river, proceeded with three of them, which cover some of the immediate and intermediate needs of the region. The projects are developed together with Ukrainian partners and are in different stages of development.

The mobile houses are expected to reach Borodyanka before the winter of 2022 while the other two projects are expected to open in 2023. The overall cost of the 3 projects is around 10 mln. euros.

Img 21. Local residents sit on a bench near a destroyed apartment building in the besieged southern port city of Mariupol, Ukraine on March 25, 2022. Source: <https://abcnews.go.com/International/cost-damage-ukraines-infrastructure-amid-russias-invasion/story?id=83719126>



5. RELATED EXAMPLES

On contrary to the first stage, the announced middle-term and long-term projects have much more clear territorial connection, but not necessarily responsible country (countries). The most relevant of them will be reviewed in the following subchapters.

5.1 UN4Kharkiv: Integrated Rehabilitation of Settlements (Territories) in Ukraine

One of the initiatives that is of particular interest for the current situation analysis was initiated by the Ministry for Communities and Territories Development of Ukraine (the Ministry), namely a pilot project on the development of a reconstruction plan in the city, Kharkiv that will be orchestrated by United Nations Economic Commission for Europe (UNECE)¹⁹. The idea behind the project is to involve international partners with the best expertise in particular field, local government institutions and representatives of private sector into pilot implementation of the draft Plans for the Integrated Rehabilitation of Settlements (Territories) based on the previously developed sectoral *Draft Ukraine Recovery Plan*²⁰ as the national policy instrument in the rebuilding process.

The implemented reconstruction plan for Kharkiv, in an ideal projected scenario, should become a blueprint for the reconstruction of other cities in Ukraine.²¹ The start date of the project is April 2022.



Img 22. Architect Norman Foster draws up plans to transform Kharkiv into 'city of the future. Source: <https://brand-zero.de/wp-content/uploads/2018/08/norman-foster-stelton-collection-2-e1533121197815.jpeg>

19 "UN4Kharkiv: Integrated Rehabilitation of Settlements (Territories) in Ukraine", UNECE, Housing and Land Management, Accessed October 24, 2022, <https://unece.org/housing/un4kharkiv>.

20 Cabinet of Ministers of Ukraine, "Draft Ukraine Recovery Plan," Materials of the "Construction, urban planning, modernization of cities and regions" working group, official website of Cabinet of Ministers of Ukraine (July 2022), <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/eng/construction-urban-planning-modernization-of-cities-and-regions-eng.pdf>.

21 Ibis UN4Kharkiv: Integrated Rehabilitation of Settlements (Territories) in Ukraine

According to the press release of the UNECE the following results are to be achieved:

1. Master plan for the city of Kharkiv which will be developed under the leadership of and with substantial expert contribution from the Norman Foster Foundation;
2. The revised draft national framework Plan for the Integrated Rehabilitation of Settlements (Territories) and relevant supporting documents for the draft Plan;
3. A proposal for the establishment of a mechanism for financing city-level infrastructure projects with a set of documents (including a proposal for the organization of the financing, project application, etc.);
4. A list of potential donors to support city-level projects in Ukraine;
5. A technology selector tool to support the use of advanced energy efficiency and renewable energy technologies and equipment and least carbon-intensive construction materials in the reconstruction process.

Img 23. The foreign minister of Estonia, Latvia and Lithuania visited Ukraine on May 6. Source: <https://news.err.ee/1608591250/estonia-to-support-rebuilding-of-ukraine-s-zhytomyr-oblast>

The project is organized in the way to connect and use the resources of UNECE such as Network of Geneva UN Charter Centres of Excellence²², private sector's experts from abroad, namely Norman Foster Foundation²³, public and private sectors in Ukraine by organizing coordination meetings and thematic workshops. The day-to-day management is ensured by regular weekly meetings, that are bringing together the Kharkiv city government, UNECE and the Norman Foster Foundation.



²² Estonian Union of Co-operative Housing Associations Centre of Excellence on Sustainable Housing will cover topic of Energy efficiency according to the interviews of the authors with representatives of UNECE.

²³ "Meeting between Mayor Ihor Terekhov and Lord Foster," Press-statement by the Norman Foster Foundation, April 18, 2022, <https://normanfosterfoundation.org/meeting-between-mayor-ihor-terekhov-and-lord-foster/>.

5.1 UN4Mykolaiv

In July 2022, the Ukrainian Government sent a request to the UNECE for coordination and help in implementation of the second pilot project for Mykolaiv, city in southern Ukraine.²⁴ The similar “tasks force” approach will be used to manage UN4Mykolaiv project, based on the presented by UNECE materials. The vision of Mykolaiv masterplan along with the first data analysis was presented by One Works, a global design and architecture company that works in collaboration with Ukrainian architects on UN4Mykolaiv project, to the city government on 29 September 2022.²⁵

Based on the milestones presented, the next UN4Kharkiv & UN4Mykolaiv “Task Force” meeting is planned for 22nd of November 2022. The detailed information on the planned events under the project can be found in presentation shared by UNECE.²⁶



Img 25. Map of Mykolaiv. Source: https://commons.wikimedia.org/wiki/File:Mykolaiv_location_map.png

5.2 Sustainable Borodyanka (France)

Another initiative that aims to rebuilt Borodyanka as one of the first ecological towns, with systems on modern energy-efficient technologies was announced on July 5th, 2022, as a memorandum of Cooperation was signed by the Kyiv regional military administration and the Regional Council of Ile-de-France, the State Energy Efficiency Agency.²⁷ The concept and a plan of specific necessary actions and tasks were submitted to the Recovery Plan of Ukraine. In accordance with information published, to support Ukraine, Ile-de-France plans to allocate € 1.1 million:

“...In a short period of time, we will offer the very concept and project of the new city. French experts will be able to provide Ukraine with its own assessment of the revitalization of destroyed areas, as well as to take part in the development of master plans, involving the best experience in urbanism.”²⁸

However, since the information on progress of the project was not published by signatories of the mentioned above memorandum of Cooperation, it is presumed that collaboration is yet to be expected in the future and may be an opportunity for partnership along with other initiatives in Kyiv region.



Img 24. Chairman of the French Senate, Gerard Larcher, visited Bucha and Borodyanka, Kyiv Oblast. Source: https://www.rada.gov.ua/en/news/News/top_news/225375.html

²⁴ UNECE, “Building back better Ukrainian Cities”, materials presented at UN4Kharkiv workshop, October 17, 2022.

²⁵ Ibid, presentation from 17.10.2022, UNECE

²⁶ Ibid, presentation from 17.10.2022, UNECE

²⁷ Borodyanka is planned to be rebuilt as the first energy-efficient eco-town,” 5 July 2022, Ecopolitic.com.ua, Accessed October 25, 2022, https://ecopolitic.com.ua/en/news/borodyanku-planujut-vidbuduvati-yak-pershe-energoefektivne-ekomistechko-2/?fbclid=IwAR2_vRelyPqTVPSyhp4qE5u5WxdWpGhysEdmfY_1vU5O-3GO_tkUusbDfE-s

²⁸ Ibid, “Borodyanka is planned to be rebuilt as the first energy-efficient eco-town”, Valerie Pecress, the president of the largest French region, Ile-de-France comment on the project.

5.3 Conclusions

The selected examples are important reflection of the smooth transition from the initial clear territorial approach of the international partners' engagement to Ukraine's recovery process in the short-term projects to more a comprehensive approach that combines sectoral and territorial aspects aimed at innovations and best practices in the middle and long-term projects. In addition, the described initiative may find some synergy with the Lithuania's efforts in Kyiv region.

This synergy might be based on the common subject of interest (help) as in case of "Sustainable Borodyanka" project in Kyiv region or, as in case of UNECE projects in Ukraine, the cooperation may follow the planned activities of Lithuania and UNECE:

- at stage of organizing thematic workshop by UNCENE, including, but not limited to topics on digital transformation and sustainable recovery;
- at stage of planning of Lithuania's long-term efforts for recovery of Ukraine by exchanging knowledge on implemented parts of UN4Kharkiv and UN4Mykolaiv projects;
- and at stage of implementation of Lithuania's proposed action, further discussed in the next chapter.



Img 26. Gerard Larcher spoke with the current heads of the towns' communities. Source: https://www.rada.gov.ua/en/news/News/top_news/225375.html

6. LITHUANIA'S PROPOSED ACTIONS

6.1 Digital model

A sustainable and rapid development focused open-source data platform.

To provide shared knowledge for following EU building regulations and rebuilding practices in the future development of the cities.

Need – long-term.

Dates: Project foreseen to begin in 2023.

Possible partnerships with KaunasTECH and VilniusTECH universities.

What is needed?

Ukrainian partners to define the local needs and capacities to ensure project sustainability.

Possible international partners for wider applicability.

Lithuanian examples:

[Open model of Kaunas:](#)

[Vilnius master plan:](#)

[3D models of Vilnius:](#)

[Database of Vilnius maps:](#)

[3D model of city of Klaipėda:](#)

[3D model of city of Panevėžys.](#)



Img 27. Vilnius master plan consultations with the residents. Source: <https://pu-pa.eu/projects/vilniaus-miesto-bendrojo-plano-konsultacijos/>

6.2 Future actions

The next steps in developing of the Lithuania's proposed action include:

- Research on best practices in digital model tools application taking into account Ukrainian context
- Research on related initiatives that have started in Ukraine, and which could be invited for a partnership and collaboration
- Engaging of stakeholders and decision makers in consultative and collaborative manner
- Analysis and determination of potential territorial limitation for the initial digital city model tool development in Ukraine
- Definition of potential members of a work group and outlining the scope of their responsibilities according to the staging of the project implementation.



Img 28. Kaunas digital twin with proposed projects. Source: https://eu.opencitiesplanner.bentley.com/www_ktu_edu/kaunasdigitalcity-stage1

The mentioned above will result in:

1. Development of initial plan for digital city model implementation
2. Suggested work group on Lithuanian and Ukrainian sides (with possible international partners)
3. Reviewed implementation guidelines for Lithuania's long-term plan

The subsequent reach of the results under the digital city model implementation plan will be developed in line with the future fulfilment of overarching Lithuania's long-term plan under potential supervision of Statybos sektoriaus vystymo agentūra (SSVA).

3.1 Conclusions

Analyzing the Lithuanian examples of proposed digital model, we can see that Lithuania has shared knowledge to help build Ukrainian capacities in creating digital twin cities thus, providing online databases for faster rebuilding processes. However, for the sustainable implementation of the program there is a need for Ukrainian counterparts which would have the local knowledge related to the digital twin city project. As a starting point it is suggested to research the capacities and networks of RebuildUA initiative mentioned before which have started mapping the demolished areas in Ukraine and produced several reports on demolished cities and towns. Therefore, it is anticipated to partner with them in the development of the digital model.

Img 29. Vilnius online 3D model with proposed projects. Source: <https://3d.vilnius.lt/scenos/realaus-vaizdo-3d-modelis>

4. SUMMARY

To summarize the overview of Lithuania's rebuilding initiatives in Ukraine, the key following parts should be highlighted:

- As result of Lugano Conference, the international partners' engagement to Ukraine's recovery process is formulated on subsequent aid.
- Rebuilding process should evolve from a territorial approach "here and now" aimed at objects critical to people's lives to long-term transformation in various areas that requires comprehensive decision making and combines sectoral and territorial aspects.
- Despite the declared territorial division, the active reconstruction and critical support are often shaped by:
 - 1) immediate needs of Ukrainian cities, villages and communities;
 - 2) human resources of recipients of the help;
 - 3) various Ukrainian initiatives that facilitate help on the ground.
- Lithuanian's immediate and intermediate support includes developing three projects in the Kyiv region.
- If the first part of the Lithuanian subsequent aid is already in the progress, the second one comes from the actual evaluation of both Ukrainian and Lithuanian capacities and needs. From a long-term perspective, it is important to understand that:
 - Smaller municipalities, cities and towns of affected areas have a need for capacity building and tools for sustainable project management which would allow help to achieve faster results.
 - Communication with local representatives is one of the main factors in the projects.
- Based on the overview, Lithuania is willing to share the knowledge and build Ukrainian proficiency in creating digital twin cities, starting with the first city in Kyiv region.
- The reviewed external initiatives in Kyiv region may have a logical synergy with the Lithuania's long-term plan in form of exchange of knowledge and sectoral expertise cooperation.



Img 30. Ursula von der Leyen at he Ukraine rebuilding conference in Berlin. Source: <https://www.reuters.com/world/europe/world-must-not-waste-time-swiftly-start-work-ukraines-reconstruction-eu-2022-10-25/>

There are no debates on how greatly the war in Ukraine effected not only Europe, but the world in general. The support of Ukraine in its recovery is not only a question of moral imperative for Lithuania in terms of shared history, but of much greater investment into better common future. As European Commission President Ursula von der Leyen said:

*“We will be at Ukraine’s side as long as it takes. The road to reconstruction is at the same time Ukraine's path towards its vision to become a more modern, democratic and prosperous country. Every euro, every dollar every pound and every yen spent will be an investment in Ukraine and democratic values around the globe ... ”*²⁹



Img 31. People in Lithuania protesting against russia's war on Ukraine. Source: <https://www.lrytas.lt/lietuvosdiena/aktualijos/2022/02/27/news/vilniuje-prie-rusijos-ambasados-protesto-akcija-pries-rusijos-agresija-ukrainoje-22535357>

29 “Ukraine: International Expert Conference hosted by the Commission and G7 Presidency reaffirms unwavering commitment to support Ukraine's recovery,” European Commission, Accessed November 7, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6336.

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