Damage Impact Analysis
Saltivka District, Kharkivska Oblast

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ABOUT REACH

REACH Initiative facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery and development contexts. The methodologies used by REACH include primary data collection and in-depth analysis, and all activities are conducted through inter-agency aid coordination mechanisms. REACH is a joint initiative of IMPACT Initiatives, ACTED and the United Nations Institute for Training and Research - Operational Satellite Applications Programme (UNITAR-UNOSAT).

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Rationale

While information on the extent of conflict-driven infrastructure damage in Ukraine is increasingly available, significant gaps remain with regards to the localised impacts of damage on different sectors and at different timeframes. To address this, REACH complements geo-spatial damage assessments with qualitative damage impact analyses to understand the multi-faceted disruptions caused by infrastructure damage, with a focus on service availability and accessibility.

This analysis leverages primary qualitative data to provide comprehensive insights into how damage impacts communities. It aims to guide context-sensitive humanitarian, early recovery, and reconstruction measures that address the complex impacts of damage. It also addresses the need for a localised understanding framed through an Accountability to Affected Populations lens, to ensure that recovery efforts are inclusive, data-driven, and tailored to the evolving needs of affected communities. This report presents the findings from a damage analysis conducted in the Saltivka District of Kharkiv City.

Context

Kharkiv, Ukraine's second-largest city, is the administrative center of Kharkivska Oblast in northeastern Ukraine, and a major economic and educational centre. The population exceeded 1.4 million before the invasion. This number reportedly fell as low as 200,000 at the start of the conflict[1], and has risen to up to 1.3 million in March 2024.[2]

Before the conflict, Saltivka District, was one of Ukraine's largest residential areas. Developed during the rapid urbanisation and industrialisation of the 1960s and 1970s, Saltivka is characterised by mass-housing apartment blocks.

Situated on the city outskirts, the district experienced conflict-related damage from the first day of Russia's invasion of Ukraine, the 24th February 2022. Saltivka became an area of intense fighting and incurred severe destruction due to heavy artillery and missile attacks, as well as seeing ground fighting. Bombardments targeted residential buildings, public infrastructure, and public spaces, causing widespread damage. By early May, the Ukrainian Armed Forces repelled the Armed Forces of the Russian Federation from the district and the broader region of Kharkiv. By mid-2022, the area was described as a shadow of its former self, with only about 5% of its residents remaining, surviving without electricity or water and under constant shelling.

As the situation stabilised, residents began returning to their homes. With support from volunteers and local government, they began cleaning up debris, making emergency repairs, and restoring basic services

This analysis examines the immediate and long-term impacts of conflict-driven infrastructure damage in the Saltivka District. It aims to inform humanitarian and early recovery actions that mitigate and address damage impacts, while ensuring that communities' needs and priorities are understood and integrated into recovery and reconstruction planning.

Key Findings

- **Kharkiv City and its Saltivka District have suffered extensive conflict-related damage,** impacting 5,626 buildings, including 30% of residential stock, 78 medical facilities, and nearly 40% of educational institutions. This is generating immediate and long-term challenges, including compromised living conditions; forced relocations, financial constraints, disruptions in essential services like healthcare and education, and significant psychological distress among residents.
- **Drastic coping strategies have gradually given way to more sustainable adaptations, but considerable negative impacts are still felt.** Initially, people employed adaptive survival strategies such as open fires and sourcing water from springs. With utility restoration progressing, more sustainable adaptations have become possible, including online education and community-driven support networks to meet essential needs. Recovery priorities are now focused on reconstructing housing, healthcare and educational infrastructure, ensuring access to reliable information, and securing financial assistance for residential repairs.
- **Significant barriers are perceived to hinder recovery efforts,** primarily financial constraints, a scarcity of construction materials, continued insecurity, bureaucratic challenges in accessing aid, a lack of coordinated communication, and low involvement of residents in decision-making processes.

Methodology

This analysis is based on primary data collected by REACH in Kharkiv's Saltivka District in September 2023. This includes two focus group discussions with impacted residents and 14 in-depth, semi-structured interviews with representatives of local authorities and civil society organisations. Additionally, two participatory mapping focus group discussions with community members were held to gather insights into the localised impacts of infrastructural damage. The study also integrates secondary data to triangulate findings from primary data.

An "impact score" provides an indicative measure of the severity of sectoral damage impacts based on qualitative insights. It is a snapshot of people's perceptions at the time of the primary research. Please refer to the methodology annex for further information on this score.

Low Impact

Represents minimal disruption, with most facilities operational and services largely accessible.

Medium impact

Noticeable disruption, with services operating at reduced capacity or being intermittently unavailable. Residents face notable challenges in accessing services Damage to infrastructure is significant but generally repairable. Need for temporary solutions and external assistance.

High impact

Reflects major disruption or severe/complete service unavailability; often couple with extensive damage requiring significant reconstruction efforts. Residents experience severe challenges in accessing services, with resulting decline in living standards. Restoration of services requires comprehensive and long-term external support.

The analysis also leverages findings from REACH's damage assessment in Kharkiv, based on analysis of high-resolution satellite imagery. Detailed maps and datasets are published separately and subject to information sensitivity. To access these products, please contact REACH at **impact.ukraine@impact-initiatives.org**. For additional details on the methodology, refer to the annexed methodology note.

Findings

Summary of infrastructure damage

According to Kharkiv City Council, 5,626 objects were recorded as damaged in the city by the end of November 2023. This includes apartment buildings, single-family houses, private sector buildings, educational facilities, medical institutions, administrative buildings, industrial objects and others.[3]

Residential damage

In Kharkiv, about 30% of the housing stock has been damaged according to local authorities. As of November 2023, 128 residential buildings have undergone restoration, funded through a subvention from the state budget. Furthermore, more than 320,000 Kharkiv residents have reportedly been temporarily relocated from their homes[4].

In Saltivka District, a damage assessment conducted by REACH based on satellite imagery from September 2022 identified a total of 93 damaged buildings due to the conflict. This included 91 apartment complexes and 2 single-family houses. Before the invasion of Ukraine by the Russia Federation, these residential structures housed an estimated population of 34,753. Most of the damage is concentrated in the northern part of Saltivka, with Neighborhoods 3 and 6 being the most severely affected.

Public service infrastructure damage

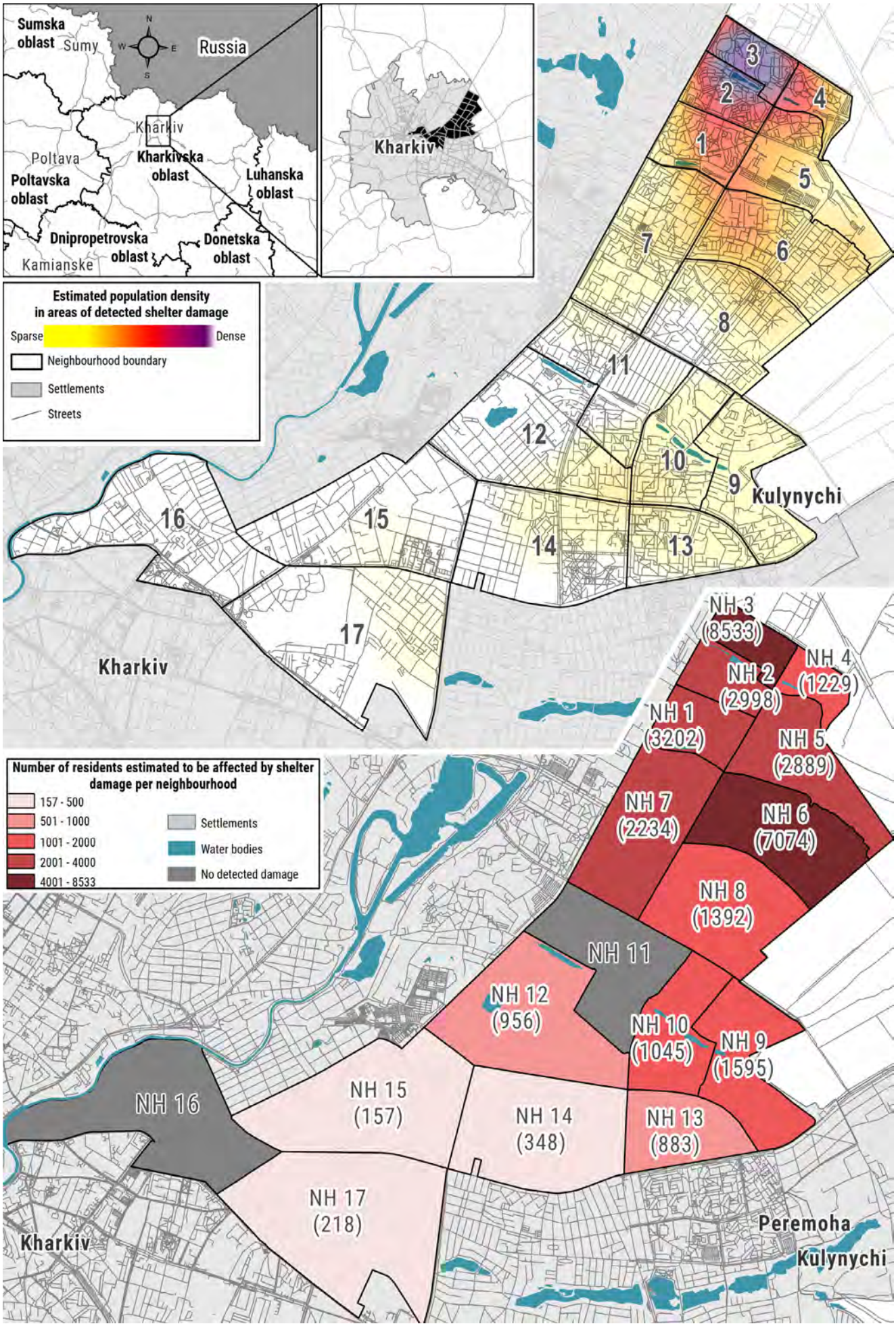
Non-residential and public service infrastructure in Kharkiv has also suffered significant damage since the onset of the full-scale invasion, particularly affecting healthcare and educational facilities.

As of November 2023, 78 medical facilities in the city have been either damaged or destroyed, severely compromising the availability and quality of healthcare services for residents. Notably, at least 8 of these facilities experienced repeated attacks, further hindering healthcare access and quality.[5]

The education sector in Kharkiv has also been heavily impacted. According to a report by the Ministry of Education and Science of Ukraine, by February 2023, nearly 40% of educational institutions in the Kharkiv Region had sustained various levels of damage, adding to the considerable challenges faced by the community.[6]

In Saltivka District, a remote sensing analysis conducted by REACH identified 36 damage non-residential infrastructure objects, a significant number considering the primarily residential nature of this district. Overall, these findings underscore the extensive nature of infrastructure damage in Kharkiv, affecting essential services and the daily lives of its inhabitants.

Map 1. Saltivka population density and affected population maps



Residential damage impact

Conflict-induced residential damage in Kharkiv, particularly in Northern Saltivka, has led to immediate and long-term challenges for the community. The primary issues identified key by informants are practical challenges and poor living conditions arising from damage to homes, such as broken windows, wall mold, and damaged roofs. These issues are reportedly further compounded by a lack of financial resources for repairs.

Forced relocation due to damaged homes is also mentioned as a critical concern for residents, as highlighted by key informants. Some people who could secure alternative housing report still incurring rental costs or receiving utility bills for uninhabitable homes.

Relocation is not always possible due to the lack of available alternative housing, forcing some residents to continue to reside in homes that are deemed uninhabitable. Community members emphasised the need for comprehensive safety assessments of damaged residential buildings, particularly structural elements, to prevent the collapse of damaged buildings while they are inhabited.

Focus group participants who relocated expressed a strong desire to return to their homes, which requires significant investment for building restoration, including plumbing replacement, interior renovations, roof repairs, window replacements, and re-establishing utilities such as power, water, and heating. They highlighted financial support as key to allow their return and address the long-term impacts of damage. Key informants similarly pointed out the need for investments in the development of new buildings, especially in Saltivka, and for the demolition of irreparable buildings.

"There were 400,000 residents in North Saltivka. Now there is lack of financial resources for construction of new buildings in the city. There was massive destruction due to shelling in Saltivka. Buildings damaged by fires and bombardments must be demolished as they are beyond repair. The majority of district residents cannot return to their homes as they have been completely destroyed."
– KI respondent

"The main long-term difficulties are of an emotional nature, and they will continue for more than a year. There are houses in which stairs are damaged, so people cannot live in their homes. Apartments have been damaged and there were direct hits to housing. There are a lot of challenges, people are forced to relocate to places with proper living conditions. People face financial difficulties due to the lack of employment opportunities. "
– KI respondent

Damage to housing has also taken an emotional toll, with psychological challenges highlighted as a critical concern by both community members and key informants, suggesting long-term psychosocial impacts. Research indicates that about 22% of individuals impacted by the full-scale war experience mental health conditions, varying from mild depression or anxiety to psychosis, with nearly 9% experiencing moderate to severe conditions.[7] This suggests that infrastructural work should be accompanied by robust psychosocial support programmes that mitigate risks of long-term psychological impacts, in support of the well-being of people whose homes have been damaged or destroyed.

Community coping strategies

Confronted with infrastructure and public service interruptions and damage to residences, residents report having developed a range of coping strategies to meet essential needs. These includes the use of open fires for both cooking purposes and heating, gathering water from natural springs for assorted tasks, the use of outdoor toilets, and development of local support systems such as food or financial support organised by and for neighbours and community members.

To maintain hygiene and warmth, individuals are making use of wet wipes and heated water bottles. Some have taken the initiative to repair their homes at their own expense, while others have engaged with humanitarian organisations, city authorities, and the media to raise awareness about their challenges. These adaptive measures reflect the community's resilience and resourcefulness in the face of adversity.

"People shared everything they had with others to provide support for those who were in need the most. Volunteers brought food."
- FGD participant

Participant 1. "There was no water supply during the first days following the bombardment. People took water from springs. The situation was complicated at that time as people could not cook food and wash due to lack of water."

Participant 2: "Now water supply has been restored and there is no lack of water."

Participant 3: "Water supply has not been restored in some buildings yet. It is impossible to restore it when half of a building is destroyed"
- Focus group discussion

Non-residential infrastructure damage impact

Conflict-induced damage has also severely affected non-residential and public service infrastructure in Saltivka District. Damage to water and energy infrastructure disrupted access to drinking water, sanitation and electricity. This issue is further exacerbated by harsh winter conditions and the destruction of homes, leaving many community members without essential heating. Military operations and shelling additionally often destroy components of power grids, leading to widespread blackouts, depriving both residential and public areas of necessary electricity, particularly important during winter months.[8]

Furthermore, damage is severely impacting public services such as education and healthcare. Health facilities had been particularly affected, limiting access to medicines and health services.[9] This situation worsens the already challenging conditions for civilians, especially those in vulnerable groups and those living in damaged, unheated dwellings.

Damage to residential and non-residential infrastructure interact in complex ways, often compounding each other. The below section therefore provides a multi-sectoral understanding of damage impacts in Saltivka District, from the perspectives of residents and KIs.

Healthcare

According to OCHA, more than 90 per cent of all attacks impacting health care facilities in the world between 24 February and 22 November 2022 occurred in Ukraine.[10] In Kharkiv specifically, 78 medical institutions were reported to have suffered damage as of November 2023.[11]

In Saltivka District, according to community members, the destruction of Polyclinic No. 10, once the primary healthcare facility, resulted in a critical gap in healthcare accessibility for the local population. The subsequent pressure on Polyclinic No. 11, which has been partially reconstructed, underscores the challenges in resource allocation and service provision amid a surging demand from a considerable population base of 330,000 people.

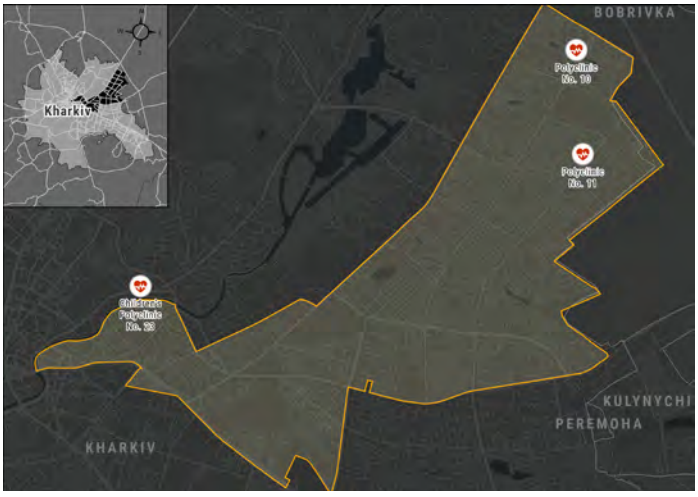
One participant spoke about the large medical centre in District 602, just outside of Saltivka district. They reported that it had received significant medical equipment from humanitarian organisations, but they judged the resources were underutilised—a situation that indicates potential challenges in operational management or logistical constraints affecting the effective use of resources. The mayor of Kharkiv further noted that residents can use Children's Polyclinic No. 23 as an alternative location after the near complete destruction of Polyclinic No. 10.[12]

Fig 3. Residential damage in Saltivka District

The damage to health facilities and the associated challenges with resource allocation have reportedly led to inconveniences for local community members, including overcrowding of healthcare facilities, hindered access due to irregular public transportation, extended waiting times and delays, and inconsistent access to qualified healthcare professionals.

These challenges particularly affect retirees, a dominant group in Saltivka District, who are now required to travel further distances and spend considerable time and effort accessing medical care.

Whilst community members note challenges in accessing appropriate healthcare, KIs present a mixed view of the healthcare access landscape. While around half of KIs (6/14) suggest no specific healthcare access challenges as a result of infrastructure damage, others point to barriers such as the availability of healthcare services, transport disruptions, shortages in the availability of specialists, financial constraints, and difficulties in accessing medical records.



Map 2. Impacted healthcare facilities in Saltivka district based on input from community members during participatory mapping.

Some Key Informants (KIs) have noted no issues with healthcare access, attributing this to a significant population shift due to war-induced relocations, which has temporarily reduced healthcare demand. However, concerns arise that should internally displaced persons (IDPs) return in large numbers, the healthcare system may struggle to adjust and adequately meet the heightened demand and diverse health needs of the returning population.

Education

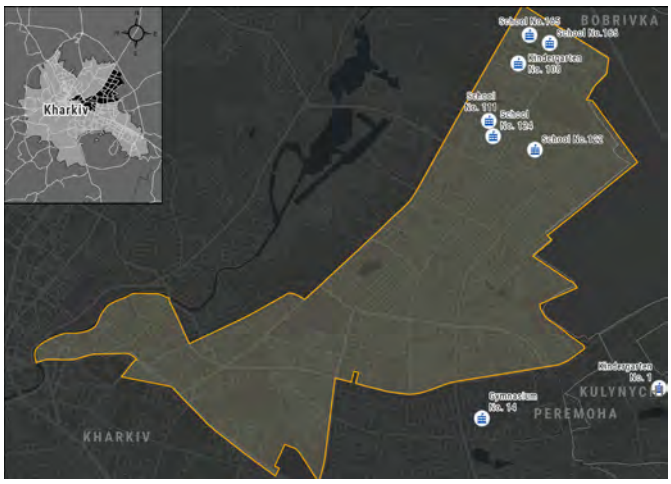
LOW IMPACT | MEDIUM IMPACT | HIGH IMPACT

Almost all educational facilities in North Saltivka are reported to be destroyed or to have suffered direct damage. Notable educational institutions such as Schools number 124, 111, and 122, along with Kindergarten number 1, Kindergarten number 108, and Gymnasium number 14 have been particularly impacted. As a result, in-person educational activities have shifted to online learning. Respondents noted significant challenges in maintaining the quality of education previously offered in physical classrooms.

In addition to the immediate need for repairs to education infrastructure, KIs voiced a broader concern for the educational trajectory of the region's youth and their ability to socialise. These findings are in line with those reflected in OCHA's Humanitarian Needs Overview, which states that the impact of damage to education facilities are multifold, affecting not only physical safety but also mental wellbeing, access to quality education and continuity of learning.[13]

In agreement with community members, a majority of KIs noted reduced access to high-quality education for the youth as a major concern. The lack of bomb shelters in schools was also raised as a further compounding issue, as according to legislation, educational institutions can only operate in-person classes when there is an appropriate shelter available, approved by a specialised commission.[14]

"Schools are not open yet, there are almost no schools left in the district. There is one kindergarten, and it is not working yet. The impact on the young people is bad as there is no proper education. It is our future generation, and they will not be able to get to higher education institutions if they do not have proper level of knowledge."
– KI respondent



Map 3. Damage-impacted education facilities based on input from community members during participatory mapping.

Water and sanitation

LOW IMPACT | MEDIUM IMPACT | HIGH IMPACT

Damage from the conflict has severely impacted water and sanitation infrastructure, leaving many without access to hot water or functional water pipes. In the early stages, the disruption forced residents to depend on natural springs. Currently, a new boiler facility is under construction to mitigate these issues, yet the quality of cold water has notably declined according to community feedback.

Information from eleven key informants (KIs) reveals that while there have been improvements in water supply and drainage systems since the initial disruptions, challenges persist, particularly with sewage and heating systems. Residents continue to face issues with hot water availability and pipe damage in some apartments. Despite observed declines in water quality, daily analyses by Kharkiv's "Kharkivvodokanal" laboratory confirm that tap water complies with all sanitary and hygienic standards (13).

"When there is no water, life pauses right away. In the first days of shelling there was no water just to take a pill."
– FGD participant

Power & communication networks

Targeted attacks on Ukraine's national power grid have resulted in disruptions to electricity and other essential infrastructure. In Kharkiv, while eight out of thirteen KIs referenced difficulties with power and communication networks early during the conflict, nine out of thirteen noted that these services have now been restored. Only two KIs mentioned ongoing disruptions with communication and power networks. However, community members noted during focus group discussions that while some areas have power, damaged buildings often continue to experience power disruption, suggesting a disparity between the experiences of community members and the observations of KIs. Even in places with electricity, safety concerns are prevalent, especially in apartments where structural damage might have compromised electrical wiring. The absence of street lighting is also highlighted as a major inconvenience, particularly for children returning home after dark, a risk further exacerbated by glass on the ground resulting from shattered windows.

> *"Some places are connected [to power], some aren't. The wiring is melted, the communication networks are re-connected, but you can't be sure they are safe to use."*
> *– FGD participant*

Transportation

In general, public transportation was perceived to be available, but with reduced frequency as a result of damage. For instance, prior to the war, the Saltivskyi Tram Depot housed 160 vehicles, but 125 were damaged by shelling, including 30 completely destroyed. Infrastructure damage further hampers tram operations. For example, the lack of power caused by damage to substations prevents trams from running on their usual routes.[15] This shortage leads to long queues and wait times, causing considerable inconvenience for many commuters.

Free minibuses have been made available, offering some relief. Community members additionally highlight the inconvenience caused by the destruction of local healthcare facilities, necessitating longer travel times to reach alternative services. This issue is particularly acute for retirees and people using public transport. In contrast, KIs initially reported challenges in accessing essential services at the start of the war but observed a decrease in these challenges over time. Currently, 7 KIs note no significant damage on transportation infrastructure.

Business & livelihoods

Community members emphasise the widespread damage to service industries and manufacturing, noting the destruction of stores, bakeries, small businesses and supermarkets. As of January 2023, approximately 55% of the pre-war number of service and household service enterprises were operational in Kharkiv.[16]

The disruptions to economic activity have also had implications for employment and the ability for households to provide for themselves.[17] Participants said that the destruction of business premises has caused an increase in unemployment. In North Saltivka, the mapping focus group participants described major supermarkets like Klass, ATB, and Ekvator as damaged or destroyed. It was noted that residents have to visit multiple stores to find various items.

In addition to direct damage, KIs also focused on the broader economic implications of the damage, with 7 KIs mentioning reduced employment opportunities as the main impact. However, employment rates are currently recovering due to active measures introduced by Kharkiv City Council, such as the provision of financial assistance to employers.[18]

Additionally, as part of the Enterprise Relocation Program, 210 economic entities in the city have successfully completed either full or partial relocation of their capacities to other regions of Ukraine.[19]

> *"A lot of small retail outlets burned out. There is not enough customers for them to open and work. Now there are probably not enough jobs."*
> *– MFGD participant*

> *"In general, all types of businesses in Kharkiv were impacted. Kharkiv needs investments now, but no one will make them in the current situation as our city is located close to the border. People are unemployed or get very low salaries."*
> *– KI respondent*

> *"It was difficult to get the essential goods and services during the first months of the war. There was no public transport in the district. Only volunteers delivered food items. Functioning of public transport has been restored now."*
> *- KI respondent*

Community priorities for recovery and reconstruction

Reconstruction and recovery priorities related to residential damage

Windows and roofs have been identified as the key priorities for home repairs, with a general consensus that these repairs are crucial priorities for rendering residences habitable and safe, particularly when no structural damage exists. Community members mentioned the need for timely repairs as the ongoing decomposition, driven by moisture, threatens to ruin concrete and walls, leading to further deterioration and potential collapse. Participants also mentioned that insulating affected homes would be highly beneficial.

Another priority shared by respondents is access to accurate information allowing for agency and decision-making during the recovery process. The main areas of interest relate to how to safely return to damaged homes, how to prepare for relocation, safety and risk awareness, how to assess repair needs, and how to access support. Whilst residents have observed the commencement of repairs, it is often unclear how to access financial or other types of support to assist in the restoration of their homes. Due to the lack of access to information, some community members have taken proactive steps by reaching out to humanitarian organisations, contacting city authorities, and collaborating with journalists to raise awareness about the challenges they are confronting.

KIs emphasised financial resources as the main consideration in prioritising home reconstruction, as mentioned by seven KIs, as well as available human and material resources and the type of repairs needed as mentioned by five KIs. The degree of damage, the time required for repairs, and the number of occupants in the building were also mentioned by KIs. These factors collectively inform the prioritization of repairs as well as the geographical areas for recovery efforts.

> *"If the house is restored, then we need the plumbing replaced and interior renovated. It's a huge investment. Now we need the roof to be repaired, the windows replaced, communications re-connected, so that we could move in. I want to go home."*
> *– FGD participant*

> *"The longer the houses stay unattended, the worse it gets."*
> *– FGD participant*

> *"Residential buildings are a priority, people can't come back even if they want to."*
> *– FGD participant*

Reconstruction and recovery priorities related to public services infrastructure

Reconstruction planning of residential homes and infrastructure are closely interconnected. Whilst residential reconstruction is critical in providing homes for community members, functioning infrastructure is necessary to make these homes habitable.

With regards to prioritisation of infrastructure restoration, access to healthcare and utility services were considered particularly important to community members, with a lesser focus on education and transportation. It is however important to note that community respondents primarily consisted of retirees, a dominant demographic in Saltivka, but whose views may not fully reflect the experience and priorities of the broader population in Kharkiv. KIs, for example, identified education as the most important sector to be prioritised for recovery.

Indicating a focus on the restoration of education, Kharkiv's mayor has announced ongoing investments in the sector. Notably, construction has begun on the city's first "underground" school, designed for 900 students across two shifts, reflecting an adaptive approach to enhancing educational infrastructure and opportunities.[20]

Healthcare is additionally considered as a priority area, as discussed by 6 KI respondents. In North Saltivka, a significant portion of the remaining population comprises of isolated elderly individuals, who face challenges in commuting to other areas for medical assistance. However, timely restoration of healthcare facilities is not always possible. For instance, the restoration of the 10th city polyclinic, formerly the primary healthcare facility in Saltivka, has suffered such damages that restoration is not feasible.[21]

Heating and power supply are additionally noted as critical areas, and reconstruction has already begun in some areas. For example, after multiple attacks on critical infrastructure, Kharkiv city carried out restorations at the Kharkiv Combined Heat and Power (CHP) Plant as well as boiler houses. In addition, to prepare for the 2023/24 heating season, the city installed 220 kilometres of heating networks, along with 14 modular boiler houses and five smaller scale combined heat and power (CHP) plants.

The importance of utilities, businesses, and transportation, along with the construction sector's key role in repairing buildings and generating jobs in war-torn regions, was highlighted. The construction industry's dual purpose is particularly vital for economic revival and stability in these areas. While there's an emphasis on prioritizing the rebuild of small businesses due to their crucial role in local economies and enhancing community resilience, and concerns about larger businesses potentially being more vulnerable to future attacks, KIs acknowledged that businesses of all sizes may face ongoing challenges.

Contextual and systemic factors affecting recovery

Anticipated barriers in early recovery and reconstruction

Financial constraints were noted by KIs as the main barrier hindering timely and effective recovery and reconstruction activities at both the households and local government levels. Three KIs reported a scarcity of construction materials as a critical barrier, while others also noted that ongoing hostilities and the absence of a cohesive recovery and reconstruction policy framework further exacerbate these challenges.

> *"People make repairs on their own. If they can't afford it, they leave it as it is."*
> *– FGD participant*

Community members have highlighted several obstacles in accessing and benefiting from aid in recovery efforts. They pointed out inconsistencies in aid distribution, with some not receiving any assistance while others benefit from varied support types, such cash for repairs, construction material vouchers, financial help, and utility restoration in certain buildings. Even among those who have received aid, many found it inadequate for their needs.

The primary challenges in accessing support include a lack of information on available aid, as well as bureaucratic challenges, particularly the extensive documentation required, which complicates the aid application process.

Community members also expressed concern about a perceived limited involvement in recovery and reconstruction decision-making, highlighting communication gaps with local authorities and dependency on news outlets, including international ones, for information.

> *"Many people do not know their legal rights, and no one can explain them how to get the best possible assistance both from foundations and the government. There is lack of unified source of information where people could get consultations. Lack of coordination is a major problem."*
> *– KI respondent*

> *"The main barrier for efficient elimination of damage impacts are financial resources and availability of construction workers [as] there is a lack of them now."*
> *- KI respondent*

Differential impacts on vulnerable populations

Insights gathered from community members and local key informants underscore the disproportionate impact of war-related damage experienced by vulnerable populations. Women, children, older people, and people with a disability are described to have been affected disproportionately by damage, both physically and psychologically. Respondents note practical and financial challenges, as vulnerable groups may be unable to work, leading to a critical need for financial support to sustain themselves. KIs also noted that evacuating vulnerable groups, in particular people with a disability and elderly people, presented an additional challenge, characterised by unclarity about mandates among local and international stakeholders.

It was also mentioned that elderly people are particularly likely to refuse to leave their homes and opt to remain in unhabitable and unsafe buildings, with often disrupted access to water, electricity and heating. This highlights the importance of addressing the unique vulnerabilities of these groups in recovery and reconstruction efforts.

> *"Due to the fact that elevators are damaged, it is difficult for the elderly and disabled people to climb the stairs to their apartments in multi-story buildings. Children's playgrounds have been damaged, children had nowhere to play. But now the playgrounds have been restored, and there are plans to repair the elevators."*
> *- KI respondent*

> *"The war caused children's psychological traumas and stress, because they went through bombardments."*
> *- KI respondent*

> *"Polyclinic No 10 in Saltivka, which provided healthcare services to the whole district, has been completely destroyed. People have to go to another district to get healthcare services. It is inconvenient, especially for vulnerable groups"*
> *- FGD participant*

Conclusion

This analysis underscores the extensive impact of the conflict on Kharkiv's residential and public infrastructure, particularly in the Saltivka district. The findings reveal significant material destruction, displacement of residents, and disruption of essential services, necessitating urgent recovery and reconstruction measures. The data highlights the need for residential and infrastructure prioritisation, with a focus on enhancing operational efficiency in healthcare and educational facilities and the reconstruction of homes.

Moreover, it is critical to include community engagement in redevelopment planning and ensure equitable support distribution, especially for vulnerable populations. Successful recovery and reconstruction efforts would require a coordinated approach, integrating community insights and aligning efforts with local reconstruction priorities to facilitate a sustainable and resilient rebuilding of the affected areas.

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Fig. 5 Residents of Saltivka District providing insights during the Mapping Focus Group Discussion

Annex - Methodology note

This analysis used a mixed methodology approach based on geo-spatial analysis (remote sensing), secondary data review, and qualitative primary data collection to obtain a comprehensive understanding of the extent and impact of conflict-related damage.

To assess war-related damage, this study adopted a Geographic Information System (GIS). Initially, satellite imagery were analysed using remote sensing techniques to identify areas of significant change or destruction. This data was then integrated into a GIS framework for spatial analysis and mapping, enabling the visualisation of damage to both residential homes and infrastructure.

The secondary data review entailed a thorough analysis of existing data sourced from humanitarian actors and exiting damage assessment data. Furthermore, relevant literature from humanitarian actors addressing the humanitarian needs associated with infrastructure and residential damage was analysed as part of the methodology.

Moreover, primary qualitative data was acquired through key informant interviews (KIIs), focus group discussions (FGDs), and participatory mapping focus group discussions (MFGDs). These methods were used to gather data on the experiences, perceptions, and challenges of those affected by residential and infrastructure damage, as well as to assess the broader implications for community resilience and post-conflict recovery efforts. It is important to note that local members respondents primarily consisted of retirees, and their perspectives may not fully represent the views of the entire community.

In the sampling process, key informants (KIs) were selected through a purposive approach employing the snowballing technique. This selection method involved two parallel strategies. Firstly, local authorities played a pivotal role by providing contacts for key informants. Simultaneously, an additional list of key informants was prepared based on the existing networks within the REACH framework. These strategies, which combined purposive selection with the snowballing technique, enabled to assemble a diverse and well-informed group of participants for the study, enhancing the richness of data and insights garnered.

- 13 KIIs involving representatives from various sectors: five local authorities, four utility providers, two humanitarian organisations, and two civil society organisations. These interviews were conducted to assess damage, identify settlement-level needs, and gather information on response and repair efforts, alongside evaluating local implementation capacities and available resources.
- 2 FGDs with the representatives of the local community members. These discussions played a significant role in evaluating the needs, assessing the impact of the damage, and identifying the preferences for prioritization in the context of recovery and reconstruction, as expressed by members of the community.
- 2 MFGDs with the representatives of the local community members. Participatory mapping, a collaborative approach, engaged the local communities in creating maps that specifically highlighted the impact of infrastructural damage in their settlement. In the conduct of this research, the research team developed large maps of the area. These maps were used during focus group sessions and interviews with KIs. Participants employed whiteboard markers to identify areas they believed should be prioritized in terms of residential and infrastructure damage recovery and reconstruction. This participatory mapping approach facilitated direct community input into the decision-making process.

Damage Impact Score

The Damage Impact Score is an indicative quantitative measure derived from primary qualitative data collected through key informant interviews and focus group discussions, triangulated with data on the extent and severity of damaged infrastructure. Sectoral in nature, this score provides an estimation on the severity of the impacts resulting from damage to different types of infrastructure (rather than the severity of the damage itself). Based on the perspectives of participants at a moment in time, it should be seen as an indicative snapsho of how people in the city think about damage and its impact.

This measure emphasises the degree to which specific infrastructure elements (such as power and water), public services (including education and healthcare), and residential homes are affected, rather than the types of impacts. It is meant to facilitate sectoral prioritisation for humanitarian, early recovery and reconstruction measures that address localised damage impacts.

- **Low impact** Represents minimal disruption, with most facilities operational and services largely accessible.
- **Medium impact** Noticeable disruption, with services operating at reduced capacity or being intermittently unavailable. Residents face notable challenges in accessing services Damage to infrastructure is significant but generally repairable. Need for temporary solutions and external assistance.
- **High impact** Reflects major disruption or severe/complete service unavailability; often couple with extensive damage requiring significant reconstruction efforts. Residents experience severe challenges in accessing services, with resulting decline in living standards. Restoration of services requires comprehensive and long-term external support.